

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

B701352399

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|---|-------------------------------|---------------------------|
| FACILITY: Huron Casting, Inc (Blue Diamond Steel Casting) | | SRN / ID: B7013 |
| LOCATION: 7050 HARTLEY ST. & 125 STURM RD, PIGEON | | DISTRICT: Saginaw Bay |
| CITY: PIGEON | | COUNTY: HURON |
| CONTACT: Daryl Mendrick | | ACTIVITY DATE: 01/08/2020 |
| STAFF: Gina McCann | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: Inspection of MI-ROP-B7013-2018a and Administrative Consent Order 4-2017 | | |
| RESOLVED COMPLAINTS: | | |

I (glm) performed a scheduled inspection of Huron Casting Inc. and Blue Diamond Steel Casting LLC on January 8, 2020. During the inspection we toured the Blue Diamond Steel Casting LLC (BDSC) portion of the stationary source and viewed the control devices associated with the Huron Casting Inc. (HCI) portion. At the time of the inspection the facility was in compliance with MI-ROP-B7013-2018a, Administrative Consent Order 4-2017 and all applicable and enforceable state and federal regulations.

Source and Regulatory Discussion

Huron Casting Inc is one stationary source consisting of two steel foundries, Blue Diamond Steel Casting LLC (BD), located at 125 Sturm Road, Pigeon, Michigan and Huron Casting Inc (HC), located adjacent at 7050 Hartley Street, Pigeon, Michigan. In 2008, the facility obtained PTI No. 129-08 for the installation of a second steel foundry, Blue Diamond Steel Casting LLC (BD), on a contiguous property at 125 Sturm Road, Pigeon, Michigan. With the installation of the BD portion of the facility under PTI No. 129-08, the company created a major source of emissions under the PSD regulations due to potential emissions of carbon monoxide (CO) greater than 100 tons per year (tpy).

In 2016, the facility entered Administrative Consent Order (ACO) 4-2017. The ACO is effective for six years and will expire, upon request, in 2022. Per the ACO the facility was issued a Prevention of Significant Deterioration, PSD, permit #115-16, which was rolled into their Renewable Operating Permit (ROP) MI-ROP-B7013-2018a. The ROP includes all applicable and enforceable state and federal regulations.

Process Description

The facility melts metals in one of several electric induction furnaces to produce a steel casting. When the melting process is complete the molten metal is tapped (by tilting and pouring through a spout on each furnace) and poured into a ladle. From the ladle, the metal is poured into molds and the castings are allowed to cool.

The molds consist of two parts, the outer molds and inner cores, both of which are made of sand and chemical binders. The sand is a source of particulate emissions and the binder is a source of volatile organic compound (VOC) emissions. The amounts of both sand and binder used in the process are directly related to the amount of metal melted and poured. Emissions occur in the moldmaking and coremaking processes and later when the molds and cores are removed from the cooled castings.

When the castings have cooled, the sand molds and cores are removed from the castings by physical processes including pulling, prying, shotblast, and shakeout. The sand is reclaimed through destruction of the binder material in high temperature natural gas fired calciners.

Additional metal particulate emissions are generated in the casting cleaning and finishing processes which include cutting with saws or torches and grinding.

Source-Wide Conditions

Title V permit, MI-ROP-B7013-2018a requires the facility to meet source-wide emission limits as listed in the emission limits table. Below is a comparison of the emission limits to the 12-month rolling time period as determined at the end of December 2019.

Review of the Hazardous Air Pollutants (HAPs) emissions during the last inspection provided 12-month rolling time periods near the facility's 22.4 tpy source-wide limit and individual limit of 8.9 tpy. The facility tested FG-BDSV05 in November of 2018 to demonstrate their source emission factors for benzene, toluene, and phenol, and hydrogen cyanide. Utilizing emission factors demonstrated during that test, the 12-month rolling time period ending December 2019 reported 3.19 tpy of aggregate HAPs with toluene as the largest contributor at 0.99 tpy.

| Pollutant | Limit | December 2019 |
|-----------------|-----------|---------------|
| PM10 | 59.6 tpy | 3.3 tpy |
| PM2.5 | 11.9 tpy | 0.73 tpy |
| VOC | 98.0 tpy | 6.19 tpy |
| Individual HAPs | 8.9 tpy | 0.99 tpy |
| Aggregate HAPs | 22.4 tpy | 3.19 tpy |
| CO | 345.6 tpy | 12.08 tpy |

Special condition (S.C.) II.1. restricts the facility from melting more than 144,000 tons of metal per year based on a 12-month rolling time period as determined at the end of each calendar month. S.C. VI.2. is the associated monitoring and recordkeeping requirement that requires the facility to keep records of metal melted in tons per month, as required by SC II.1, II.2, and II.3. For the 12-month rolling time period ending December 2019 the facility melted 64,702 tons of steel.

S.C. II.2 restricts Huron Castings Inc. from melting more than 72,000 tons per year of steel based on a 12-month rolling time period, as determined as the end of each calendar month. S.C. VI.2. is the associated monitoring and recordkeeping requirement that requires the facility to keep records of metal melted in tons per month, as required by SC II.1, II.2, and II.3. For the 12-month rolling time period ending December 2019 December 2019 was 40,247 tons.

S.C. II.3 restricts Blue Diamond Steel Casting from melting more than 72,000 tons per year of steel based on a 12-month rolling time period, as determined as the end of each calendar month. S.C. VI.2. is the associated monitoring and recordkeeping requirement that requires the facility to keep records of metal melted in tons per month, as required by SC II.1, II.2, and II.3. For the 12-month rolling time period ending December 2019 was 24,455 tons.

S.C. II.4. restricts natural gas usage to less than 1,026 MMcf per year based on a 12-month rolling time period, as determined as the end of each calendar month. S.C. VI.6. is the associated monitoring and recordkeeping requirement that requires the facility to keep records monthly and 12-month rolling records of natural gas usage rates, as required by SC II.4. For the 12-month rolling time period ending December 2019 was 365.72 MMcf.

S.C. II.5 restricts the facility from processing more than 3,870 tons of binder per year based on a 12-month rolling time period calculated at the end of each calendar month. S.C. VI.7. is the associated monitoring and recordkeeping requirement that requires the facility to keep records monthly and 12-month rolling records of binder usage rates, as required by SC II.5. For the 12-month rolling time period ending December 2019 was 1,188 tons.

S.C. III.1. restricts operation of each emission unit that is subject to an emission limit more than 7,000 hours per year based on a 12-month rolling time period as determined at the end of each calendar month. S.C. VI.5. is the associated monitoring and recordkeeping requirement that requires the facility to keep records monthly and 12-month rolling time period operating hour records for each emission unit that is subject to an emission limit, as required by S.C. III.1. For the 12-month rolling time period ending December 2019 hours of operation ranged from 747 hours for EU-NBCALCINER at the Blue Diamond side to 6,257 hours for EU-07 at the Huron side.

S.C. III.2. restricts operation of the facility's 29 baghouses unless a malfunction abatement plan (MAP) as described in Rule 911(2), has been submitted to the AQD District Supervisor within 180 days of permit issuance, and is implemented and maintained. The facility has an approved MAP on file with the Department that reports an acceptable pressure drop reading is between 1 inches of water column ("W.C.") and 9 "W.C. for all baghouses.

Huron Castings, Inc.

HCI was founded in 1976. It has the capability to produce shell molded steel castings in a weight range from 3-500 lbs. Operations began at the Huron Casting Inc facility over 40 years ago. Over time, the facility has been modified and new equipment has been added. Operations at the facility include raw materials handling, sand mixing, mold and core production, melting, casting, finishing, welding, grinding, testing, packaging, and shipping. All melting furnaces at the facility are electric induction furnaces.

EU-01

A-line east pouring line, Mag drum and shot air wash controlled by Baghouse #774 (20,000 dry standard cubic feet per minute (dscfm)).

EU-01 has limitations that restrict PM and PM10 and visible emissions. Compliance with the emission limits are demonstrated through monitoring to demonstrate proper operation of the baghouse. The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

The pressure drop across the baghouse is required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. I reviewed records for December, October, June and April 2019. Pressure differentials were within the appropriate range for the records reviewed.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

EU-02

Vibramill, A-line Shake-out sand elevator and conveyor, A-line shot leg, controlled by Baghouse #788 (20,000 dscfm pulse jet type).

After the parts are forged from A-line (EU-01) and cooled, the sand casting is removed via this unit. This emission unit consists of a vibramill, for shaking and breaking the sand apart, and associated conveyor and elevator which transfers the spent sand via a shot leg to a calciner to be reclaimed.

EU-02 has limitations that restrict PM and PM10 and visible emissions. Compliance with the emission limits are demonstrated through monitoring to demonstrate proper operation of the baghouse. The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. A Method 9 reading was not done on the baghouse during the inspection; however no visible emissions were noted during the inspection.

The pressure drop across the baghouse is required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. During the inspection the pressure drop reading was 5.5 "W.C. I reviewed records for December, October, June and April 2019. Pressure differentials were between 4.5 "W.C. and 5.5 "W.C. for the records reviewed.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

EU-TORCHES1-18

Cutting torches #1-18. These are mainly used to cut risers, spurs, etc. from the finished piece. It provides a rough finish to the part.

EU-1-18 has limitations that restrict PM and PM10 and visible emissions. The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. A Method 9 reading was not done on this equipment during the inspection; however no visible emissions were noted during the inspection.

EU-05

Vibramill shot air wash, B-line east end pouring line. Particulate emissions are controlled by Baghouse #791 (42,000 dscfm reverse air type)

EU-05 has limitations that restrict PM and PM10 and visible emissions. Compliance with the emission limits are demonstrated through monitoring to demonstrate proper operation of the baghouse. The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

The pressure drop across the baghouse is required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. I reviewed records for December, October, June and April 2019. Pressure differentials were between 2.6 "W.C. and 5.8"W.C. for the records reviewed.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

EU-06

Sand coating/handling and reclaim operations controlled by baghouse #787 (20,000dscfm reverse air type).

EU-06 has limitations that restrict PM and PM10 and visible emissions. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations, monitoring of the temperature in the calcining furnace and analyzing spent sand for loss of resin.

S.C. II.1. restricts the loss of resin to one percent based on total weight for the resin coated sand in the mold/core making process from pouring through shakeout. S.C. VI.3. is the associated monitoring and recordkeeping requirement that requires the facility on an annual basis, during the month of May, independently verify by analysis the phenol content of each of the binders which were used in the previous month of April and that the loss of binder is no more than one percent in spent mold/core sand. Test results for 2019 were received on June 27, 2019 and indicated compliance with this limit.

The pressure drop across the baghouse is required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1"W.C.) and 9 "W.C. At the time of the inspection the pressure differential was 2.0 "W.C. (BH #787). S.C. VI.2. is the associated monitoring and recordkeeping requirement that requires the pressure drop across the baghouse to be recorded on an daily basis. I reviewed records for December, October, June and April 2019. Pressure differentials were between 1.0 "W.C. and 2.6"W.C. for the records reviewed.

S.C. III.2 of MI-ROP-B7013-2018a requires the calcining furnace to maintain a minimum temperature of 1200F while in operation. At the time of the inspection the calciner was not in operation and has not been for the last couple of years.

The facility is required to independently verify, during the month of May, by analysis the phenol content of each of the binders which were used in the previous month of April and that the loss of binder is not more than one percent in spent mold/core sand. Test results for 2019 were received on June 27, 2019 and indicated compliance with this limit.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

EU-07

Sand coating/handling and reclaim operations, Vibramill. Emission controlled by BH #484 and #1001 (total air flow 20,000 dscfm reverse air type).

EU-07 has limitations that restrict PM and PM10 and visible emissions. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations, monitoring of the temperature in the calcining furnace and analyzing spent sand for loss of resin.

S.C. III.1. restricts operation of EU-07 unless the associated baghouse is installed, maintained, and operated in a satisfactory manner. S.C. VI.1. is the associated monitoring and recordkeeping requirement that requires the plant to monitor the pressure drop across the baghouse and record on a daily basis. At the time of the inspection the pressure drop across the baghouse was 2.5 "W.C. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C.

S.C. III.2 of MI-ROP-B7013-2018a requires the calcining furnace to maintain a minimum temperature of 1200F while in operation. At the time of the inspection the calciner was operating at 1400F. I reviewed records for December, October, June and April 2019. When the process was in operation, the calciner met the minimum temperature of 1200F.

Likewise, to EU-06, the facility is required to independently verify, during the month of May, by analysis the phenol content of each of the binders which were used in the previous month of April and that the loss of binder is not more than one percent in spent mold/core sand. Test results for 2019 were received on June 27, 2019 and indicated compliance with this limit.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

EU-08

Cut-off saws #1-9, grinders #1-13, 7 to 12 handgrinders and 7 welders. Particulate emissions are controlled by BH #616 (40,000 dscfm, reverse air type) and exhausts to the in-plant environment.

EU-08 has limitations that restrict PM and PM10 and visible emissions. Compliance with the emission limits are demonstrated through monitoring to demonstrate proper operation of the baghouse. The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

The pressure drop across the baghouse is required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1"W.C. and 9 "W.C. At the time of the inspection the pressure drop across the baghouse was 3.2 "W.C. I reviewed records for December, October, June and April 2019. Pressure differentials were in compliance for the records reviewed.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

EU-09

Shot blast equipment. Emissions controlled by BH #618 (25,000 dscfm reverse air type).

EU-09 has limitations that restrict PM and PM10 and visible emissions. Compliance with the emission limits are demonstrated through monitoring to demonstrate proper operation of the baghouse. The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

The pressure drop across the baghouse is required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. At the time of the inspection the pressure drop across the baghouse was 3.8 "W.C. I reviewed records for December, October, June and April 2019. Pressure differentials were between 2.8 "W.C. and 8.8" W.C. for the records reviewed.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

EU-10A

Sand leg and mag drum, shot legs, vibratory mold dumper/conveyor, used for shakeout activities. Particulate emissions are controlled by BH #864 (32,000 dscfm dust collector) and BH #776 (24,000 dscfm dust collector).

EU-10A has limitations that restrict PM and PM10 and visible emissions. Compliance with the emission limits are demonstrated through monitoring to demonstrate proper operation of the baghouse. The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

The pressure drop across the baghouse is required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1 inches of water column "W.C. and 9 "W.C. At the time of the inspection the pressure drop across the baghouse was 5.4 "W.C. on BH-776 and 6.8 "W.C. on BH-864. I reviewed records for December, October, June and April 2019. Pressure differentials were within appropriate ranges.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

FG-POUR

This flexible group consists of the following emission units:

EU-POURINGA:

Three (3) electric induction furnaces, Pouring line A and ancillary equipment controlled by Baghouse #790 (30,000 dscfm reverse air type) exhausts to the in-plant environment.

EU-POURINGB:

Three electric induction furnaces, Pouring line B and ancillary equipment controlled by Baghouse #554 (42,000 dscfm pulse jet type and Baghouse #553 (32,000 dscfm pulse jet type) exhausts to the in-plant environment.

Emissions are controlled by three (3) separate baghouses and all exhausted to the in-plant environment.

FG-POUR has limitations that restrict PM, PM10 and PM2.5 emissions. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations.

The pressure drop across the baghouses are required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1"W.C. and 9 "W.C. At the time of the inspection the pressure drop across BH-790 was 5.4 "W.C. I reviewed records for December, October, June and April 2019. Pressure differentials were within appropriate ranges.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

FG-MOLDLINE

Molding machines # 1-26 and cutting torches #19-22. No control. A-line west end pouring line A-line cooling room; BH #789 (32,000 dscfm). West end pouring line B, B-line cooling room; BH #792 (47,000 dscfm). All equipment exhausts through SV-03. Baghouses are shaker type.

This flexible group consists of EU-MOLDLINE-A, EU-MOLDLINE-B, EU-MOLDLINE-C, EU-TORCHES19-22, EU-03A and EU-03B.

Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations and limitations on amount of binder used.

The pressure drop across the baghouses are required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1" W.C. and 9 "W.C. At the time of the inspection the pressure drop across BH-789 was 7.4 "W.C. and 4.5 "W.C. on BH-792. I reviewed records for December, October, June and April 2019. Pressure differentials were within appropriate ranges.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

Binder usage is restricted to not more than 1,480 tons per year based on a 12-month rolling time period, as determined at the end of each calendar month. Binder usage for the 12-month rolling time period ending December 2019 was 449 tons.

S.C. II.2. limits the maximum phenol content of any of the binder used for coating sand to less than 1.1 percent by weight. The facility is required to independently verify, during the month of May, by analysis the phenol content of each of the binders which were used in the previous month of April and that the loss of binder is not more than one percent in spent mold/core sand. Test results for 2019 were received on June 27, 2019 and indicated compliance with this limit.

Blue Diamond Steel Castings

The Blue Diamond portion of the facility has a shell mold line that uses three 8-ton capacity electric induction furnaces for a design melting capacity of approximately 200 tons per day. It also has a no-bake line which uses two 8-ton capacity electric induction furnaces and one electric arc ladle reheat station plus a vacuum degassing unit for a design melting capacity of approximately 200 tons per day. Operations at the facility include raw materials handling, sand mixing, mold and core production, melting, casting, finishing, welding, grinding, testing, packaging, and shipping. All of the melting and heat treat furnaces at the facility are electrically heated. There are no fuel combustion emissions from electric furnaces.

Source-Wide Conditions

For regulatory purposes, the two foundries are one stationary source. Operations at the facility includes raw materials handling, sand mixing, mold and core production, melting, casting, finishing, welding, grinding, testing, packaging, and shipping. All the melting furnaces at the facility are electric induction furnaces.

Title V permit, MI-ROP-B7013-2018a requires the facility to meet source-wide emission limits as listed in the emission limits table. The source-wide emission limits are for the entire facility and the emissions from Huron Castings, Inc. and Blue Diamond Steel Castings are combined to determine compliance with these limits.

Source-wide conditions were discussed at the beginning of this report.

EU-NBFURNACE

The no-bake furnace line consists of (3) three electric induction furnaces: two 8-ton capacity melt furnaces, one electric arc ladle reheat station, and a vacuum degassing unit for an expected melting capacity of 200 tons per day. The furnaces are controlled by an 80,000 cfm baghouse (BH #22) with the exhaust re-circulated to an area behind the furnace hoods.

The furnace started operating on July 20, 2011. Testing to demonstrate compliance with Subpart ZZZZZ was conducted on December 2, 2011. The test results demonstrated compliance with Subpart ZZZZZ. However, based upon the poor capture efficiency documented during the testing staff did not consider the test to be provide a valid compliance determination for Subpart ZZZZZ. The Division requested the facility install better capture and control to re-test for MACT ZZZZZ compliance. The facility installed a hood system, on a swivel arm, that is placed over the furnace at all times the furnace is in operation, with the exception of tilting and pouring. The hood is too low to be above the furnace during this activity.

The no-bake furnace has PM, PM10 and PM2.5 emission limits. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations.

The pressure drop across the baghouses are required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. At the time of the inspection the differential pressure on BH#22 was 4.4 "W.C.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

The facility is required to track monthly records of tons of steel melted for EU-NBFURNACE per special condition VI.2. For the month of November 2019, the no-bake furnace melted 268 tons of steel.

S.C. VI.3. requires the facility to monitor and record, the negative pressure using a magnehelic gauge at the inlet side of the baghouse BH-01 for EU-NBFURNACE on a daily basis during operation of EU-NBFURNACE to verify that the hood system capture velocity as designed is achieved in practice. I reviewed hood negative pressure for April, June, October and December 2019. It appears the plant is meeting this requirement.

EU-NBMOLD

The mold making process that blends the sand and binder, prepares and cures the molds, and sets the mold out on the casting lines. This emission unit is not controlled.

The facility is required to track the monthly and yearly binder usage rate and shall not process more than 1,500 tons of binder per year in EU-NBMOLD based on a 12-month rolling time period calculated at the end of each calendar month. For the 12-month rolling time period ending December 2019 the binder usage was 7.0 tons.

EU-SHELLFURNACE

The shell furnace line consists of three 8-ton capacity electric induction furnaces for an expected melting capacity of 200 tons per day. The furnaces are controlled by a 50,000 cfm baghouse (BH-06) with the exhaust re-circulated back into the furnace hoods.

Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations and a source-wide material limit on the tons of steel melted.

The pressure drop across the baghouses are required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. I reviewed records for December, October, June and April 2019. Pressure differentials were within appropriate ranges.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. The system is equipped with a visual alarm. A green light means the system is operating properly and a red light indicates that the alarm has been triggered. At the time of the inspection, the light was green.

EU-NBTORCHES

No-bake cutting torches with the exhaust emitted into the cutting area.

The permit does not have emission limits or monitoring associated with this unit. The compliance check in not discharging directly into ambient air. At the time of the inspection the facility was in compliance with this requirement.

EU-SHELLTORCHES

Shell cutting torches with the exhaust emitted into the cutting area.

The permit does not have emission limits or monitoring associated with this unit. The compliance check in not discharging directly into ambient air. At the time of the inspection the facility was in compliance with this requirement.

EU-FINISHING

The finishing process consists of grinders, shot blast, cut-off saws, wheelabrators, and welders. The process is controlled by a 30,000 cfm baghouse (BH-10) with the exhaust re-circulated back into the finishing area.

Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations.

The pressure drop across the baghouses are required to be monitored and recorded on a daily basis. According to the facility's MAP, an acceptable pressure drop reading is between 1" W.C. and 9 "W.C. At

the time of the inspection the pressure drop across BH-10 was 4.8 "W.C. I reviewed records for December, October, June and April 2019. Pressure differentials were within appropriate ranges.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

FG-BDSV01

This flexible group consists of EU-NBPOURAND COOL, the no-bake pouring and cooling room consists of a pouring hood and enclosed cooling room which is controlled by a 40,000 cfm baghouse (BH-02) and EU-SHELLCOOL. The shell cooling room encloses cast molds on a conveyor and is controlled by a 40,000 cfm baghouse (BH-07). Emissions are exhausted through stack SV-01.

FG-BDSV01 has PM, PM10 and PM2.5 emission limits. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations.

The pressure drop across the baghouses are required to be installed and operating properly. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. At the time of the inspection the differential pressure on BH#02 was 2.4 "W.C. and 3.2 "W.C. on BH#7.

The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

FG-BDSV02

Emission units exhausted through stack SV-02. EU-SHELLCALCINER: The calciner is used to destroy the binder material in the mold facing and core sand from the shell line by heating it to 1,200° F (minimum) before the sand is returned to the shell sand system for recycling. The calciner is controlled by a 15,000 cfm baghouse (BH-09). EU-SHELLMOLD, the mold making process that blends the sand and binder, prepares and cures the molds, and sets the molds out on the casting lines. The emissions from this process are captured with a hood with a flow rate of 71,000 cfm. Includes 22 core machines which emit to the in-plant environment and two natural gas fired heat treat furnaces. Each heat treat furnace is rated at 9.9 MMBTU/hr.

FG-BDSV02 has PM, PM10 and PM2.5 emission limits.

Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations and limitations on tons of binder used per year in EU-SHELLMOLD portion of FG0BDSV02.

The facility is required to track the monthly and yearly binder usage rate and shall not process more than 840 tons of binder per year in EU-SHELLMOLD portion of FG-BDSV02, based on a 12-month rolling time period calculated at the end of each calendar month. For the 12-month rolling time period ending December 2019 the facility used 312 tons of binder.

The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

The pressure drop across the baghouses are required to be installed and operating properly. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. At the time of the inspection the differential pressure on BH-09 was 4.8 "W.C.

The EU-SHELLCALCINER portion of FG-BDSV02 shall not operate unless a minimum temperature of 1,200F is maintained. During the inspection the shell calciner was operating at 1339F. I viewed records for December, October, June and April 2019. Temperatures were above 1300F for this time period. The setpoint for the temperature is 1250F.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

FG-BDSV03

Emission units exhausted through stack SV-03. EU-NBCALCINER: The calciner is used to destroy the binder material in the mold facing and core sand from the no-bake line by heating it to 1,200°F (minimum) before the sand is returned to the no-bake sand system for recycling. The calciner is controlled by a 6,500 cfm baghouse (BH-03). EU-NBSAND: The no-bake sand system includes the vibramill, sand cooler, shakeout, cooling conveyor, sand tanks, and elevators. The sand system is controlled by a 40,000 cfm baghouse (BH-04).

The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

FG-BDSV03 has PM, PM10 and PM2.5 emission limits. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations.

The facility is required to track the monthly and yearly binder usage rate and shall not process more than 1,550 tons of binder per year in FG-BDSV03, based on a 12-month rolling time period calculated at the end of each calendar month. For the 12-month rolling time period ending December 2019 the facility used 29 tpy.

The pressure drop across the baghouses are required to be installed and operating properly. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. At the time of the inspection the differential pressure on BH-04 was 3.6 "W.C. and BH-03 was not in operation. BH-03 is associated with the no-bake calciner, which is used as a backup.

The EU-NBCALCINER portion of FG-BDSV03 shall not operate unless a minimum temperature of 1,200F is maintained. During the inspection the equipment was not operating I viewed records for December, October, June and April 2019. The facility only operated this calciner in January 2019. During the periods of operation, the calciner maintained a temperature above 1200F.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

FG-BDSV04

Emission units exhausted through stack SV-04. EU-SHELLSAND is the shell sand system that includes the mechanical reclaim, dumper, shakeout conveyor, shot sand screen, vibramill, bucket elevators, and sand tanks. The sand system is controlled by a 35,000 cfm baghouse (BH 08). EU-SHELLPOUR: This unit includes the pourline, shot separator, and shot cooler. All activities are controlled by a 50,000 cfm baghouse (BH-05).

The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

FG-BDSV04 has PM, PM10 and PM2.5 emission limits. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations.

The facility is required to track the monthly and yearly binder usage rate and shall not process more than 840 tons of binder per year in FG-BDSV04, based on a 12-month rolling time period calculated at the end of each calendar month. For the 12-month rolling time period ending December 2019 the facility used 719 tpy.

The pressure drop across the baghouses are required to be installed and operating properly. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. At the time of the inspection the differential pressure on BH-05 was 3.8 "W.C. and BH-08 was 5.8 "W.C.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

FG-BDSV05

Emission units exhausted through stack SV-05. EU-SHELL2POUR: This unit includes the pourline, shot separator, and shot cooler. All activities are controlled by a 50,000 cfm baghouse (BH-18).

EU-SHELL2COOL: The shell cooling room encloses cast molds on a conveyor and is controlled by baghouses BH-19A and BH-19B, 30,000 dscfm each. EU-SHELL2SAND: The shell sand system includes the mechanical reclaim, dumper, shakeout conveyor, shot sand screen, vibramill, bucket elevators, torch stations, and sand tanks. The sand system is controlled by a 40,000 cfm baghouse (BH 17).

FG-BDSV05 has PM, PM10 and PM2.5 emission limits. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations.

The ROP restricts visible emissions to below 5 percent opacity. Monthly non-certified visible emissions are required monthly. This requirement was not an active permit condition at the time of the inspection. However, no visible emissions were noted during the inspection.

FG-BDSV04 has PM, PM10 and PM2.5 emission limits. Compliance with the emission limits are demonstrated through monitoring of proper baghouse operations.

The facility is required to track the monthly and yearly binder usage rate and shall not process more than 840 tons of binder per year in FG-BDSV04, based on a 12-month rolling time period calculated at the end of each calendar month. For the 12-month rolling time period ending December 2019 the facility used 137 tpy.

The pressure drop across the baghouses are required to be installed and operating properly. According to the facility's MAP, an acceptable pressure drop reading is between 1 "W.C. and 9 "W.C. At the time of the inspection the differential pressure on BH-17 was 2.8 "W.C. and BH-19A was 1.8 "W.C and BH-19B was 2.8 "W.C.

The facility is required to have a bag leak detection system on this equipment and shall operate it appropriately. At the time of the inspection the bagleak indicator, showed there was no leak.

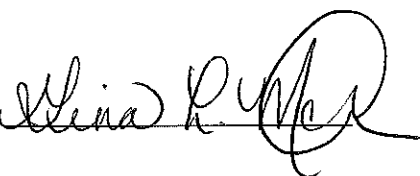
FG-Rule 290

This flexible group covers any emission unit that emits air contaminants and is exempt from the requirements of Rule 201, pursuant to Rules 278, 278a and 290. The facility has a heat treat furnace that utilizes this exemption. The HAP emissions from this unit shall be included in the source-wide HAPs recordkeeping. They currently are only tracked separately.

Conclusion

The facility was in compliance with all applicable requirements.

NAME



DATE

2/12/20

SUPERVISOR

