

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

B196150007

FACILITY: Barber Steel Foundry Corporation		SRN / ID: B1961
LOCATION: 2625 Winston Rd., ROTHBURY		DISTRICT: Grand Rapids
CITY: ROTHBURY		COUNTY: OCEANA
CONTACT: Bruce Mulligan, Plant Manager		ACTIVITY DATE: 08/21/2019
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced compliance inspection		
RESOLVED COMPLAINTS:		

**Note: Since the date of the on-site inspection, the facility has informed EGLE that they will be permanently ceasing all operations on or before September 19, 2019, except for finishing, which will cease operation on or before November 18, 2019.**

### FACILITY DESCRIPTION

Barber Steel is a steel foundry that casts rail road car under carriage components.

### REGULATORY ANALYSIS

All permitted processes at the facility are covered under PTI No. 12-14E. The facility is entered into a consent order with AQD regarding past compliance issues. The consent order is AQD No. 58-2014. The facility is subject to Subpart ZZZZZ, Iron and Steel area source NESHAP, as a new large source.

### COMPLIANCE EVALUATION

Prior to entering the facility, no abnormal odors or opacity were observed.

At the facility EG met with Bruce Milligan, Director of Operations.

The facility conducts melting and pouring in the overnight hours during off-peak electrical demand periods. Evaluation of night time operations was going to be conducted on September 23-24, 2019 while the facility was conducting performance testing. Since the facility is ceasing operations, performance testing and a nighttime inspection will no longer be possible or necessary.

Below is an evaluation of compliance based on PTI No 12-14E.

#### EU-CHRGHANDLING

Emission unit addresses the charge area where incoming scrap is delivered and internal run-around is stored. The area has a roof, concrete floor and partial walls to reduce fugitive emissions. Fugitive emissions are required to be reduced by the design, which was observed during the inspection.

#### EUINDUCFURNEIF6

Emission unit covers a 6-ton/hour electric induction furnace controlled by a Torit dust collector.

Emissions of PM, PM10, PM2.5, Total Inorganic HAPs and Visible Emissions are restricted in the permit. Compliance with the emission limits is demonstrated through required emissions records, testing, charge restrictions and proper operation of the baghouse.

Performance testing was conducted in February 2018, at which time compliance with PM, PM10, and PM2.5 was demonstrated. The facility had within 5 years of the issuance of PTI No. 12-14E (March 27, 2019) to conduct performance testing to demonstrate compliance with the Total Inorganic HAPS limit. Compliance with the VE limits was demonstrated by the requirement to perform daily non-certified VE observations.

The facility provided monthly and 12-month rolling PM emission records demonstrating compliance with the permitted limits.

Charge material is restricted by the type and amount. The facility is restricted to charging clean busheling or comparable scrap, as well as returns and internal runaround. Observation of the scrap onsite showed compliance with the charge material restrictions. Material throughput is limited to 6 tons per hour and 15,000 tons per day. The facility provided records demonstrating compliance with the limits.

Proper operation of the baghouse is demonstrated through preventative maintenance, pressure drop monitoring and operation of a bag leak detection system. The facility provided preventative maintenance documentation for the past 12 months for the furnace and hood. Additionally, the facility provided daily pressure drop and opacity records for the previous 60 days. Pressure drops were within the established ranges and no VE was noted. There are periods when there are no recorded pressure drop readings, this could be due to the furnace not operating at the time the readings were taken. Staff would recommend that the readings need to be taken when the furnaces is operating or note that the furnace was down, however the facility has ceased operation. The facility acknowledged issues with VE observations and pressure drop readings regarding documentation. The facility stated that they had initialed employee training to resolve issues.

**Observations:** The furnace was not operating at the time of the inspection. Observation of the hood showed that it appeared maintained as it was during the last performance test.

### EU-FINISHING

**Emission unit covers finishing processes, including cut-off, grinding, welding and air arc cutting. Emissions from finishing vent to the in-plant atmosphere.**

Emissions of PM, PM10, PM2.5 are restricted in the permit. Compliance with the emission limits is demonstrated through required material throughput limits and emission records.

Metal finished is limited to 13,500 tons/year. The facility provided records documenting that during the most recent 12-month period, 7,676 tons of metal was processed. Calculated emissions of PM and PM10 for the most recent 12-month period were 1.47E-04 tons for each pollutant. Emissions of PM2.5 were reported at 0.0E-04 tons. The emission limit for each pollutant is 0.9 tpy.

**Observations:** During the inspection some finishing operations were active. No issues noted.

### EU-SHOTBLAST

Emission unit covers a table shot blast unit controlled by a baghouse (F).

Emissions of PM, PM10, PM2.5, aggregate HAPs and visible emission are restricted in the permit. Compliance with the emission limits is demonstrated through required emissions records, throughput limits and proper operation of the baghouse.

Metal processed is limited to 5.88 tons/hr. and 14,700 tons/year. The facility provided records documenting that during the most recent 12-month period, 7,885 tons of metal was processed. Additionally, facility records of calendar day throughput were provided to document compliance with the ton/hr. limit. PM emissions are restricted and calculated on an hourly basis. Aggregate HAPs are restricted and calculated on a lb/ton of metal finished basis. Calculated emissions of PM was 1.35E-02 lb./hr. (limit=0.07 pph), PM10 and PM2.5 were each 9.44E-03lb./hr. (limit=0.05 lb./hr. each) Aggregate HAPs (metallic HAP) was 1.99E-04 lb./ton of metal (limit=0.0007lb./ton of metal)

Proper operation of the baghouse is demonstrated through the requirement to monitor and record the pressure drop and daily visible emissions observations. The facility provided requested records for the previous 60 days. Pressure drops were within the established ranges and no VE was noted. There are periods when there are no recorded pressure drop readings, this is likely do the shot blast not operating at the time the readings were taken. Staff would recommend that the records note that the shot blast was not operating, however the facility has ceased operation.

**Observations:** During the inspection the shot blast unit was not operating. Observation of the baghouse showed good housekeeping practices.

### EU-SHAKEOUT

EU-SHAKEOUT covers casting removal from the flask and mold (shakeout area) and placing the casting in the shakeout machine. Emissions from the shakeout machine are controlled by Baghouse C-1 and Baghouse C-2. Emissions from the shakeout area are controlled by the PCS Baghouse (collector H).

Emissions of PM, PM10, PM2.5, CO, VOCs, Benzene, Cresols, Naphthalene, aggregate HAPs and visible emission are restricted in the permit. Compliance with the emission limits is demonstrated through required emissions records, throughput limits and proper operation of the baghouse.

The facility was scheduled to conduct performance testing to demonstrate compliance with the emission limits on September 23, 2019, however, with the facility ceasing operations, testing will not be conducted.

Metal processed is limited to 13,500 tons/year. The facility provided records documenting that during the most recent 12-month period, 7,676 tons of metal was processed. Records of daily material throughput were provided to demonstrate compliance with the tons/hour limit.

The facility is required to calculate and maintain monthly and 12-month rolling time period records for VOC, CO, individual HAPs, and aggregate HAPs. The facility provided emission record for the previous 12-month period. Review of the emission records demonstrated compliance with the ton/yr emission limits.

Proper operation of the baghouse is demonstrated through pressure drop monitoring and the operation of a bag leak detection system. The facility provided pressure drop records for the past 60 days that showed pressure drop readings within the established ranges and no VE was noted. The facility acknowledged issues with VE observations and pressure drop readings, regarding documentation. The facility stated that they had initialed employee training to resolve issues.

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### FGPOURCOOL

Flexible group that consists of metal pouring, cooling and mold and core making. Emission unit include fugitives from shakeout, melting. Emissions from sand handling and mold sand silo operations are also vented to the same baghouse (PCS - Baghouse H)

Emissions of PM, PM10, PM2.5, CO, NOx, VOCs, Benzene, Cresols, Naphthalene, aggregate HAPs and visible emission are restricted in the permit. Compliance with the emission limits is demonstrated through required emissions records, throughput limits and proper operation of the baghouse.

Performance testing for PM, PM10 and PM2.5 was conducted in February 2018, at which time compliance was demonstrated.

The facility was scheduled to conduct performance testing to demonstrate compliance with the remaining pollutants on September 23, 2019, however, with the facility ceasing operations, testing will not be conducted.

Material limit restrictions apply to: metal poured, sand processed, resin binder/catalyst usage and natural gas. The facility provided records documenting that during the most recent 12-month period they were in compliance with the material throughput limits.

The facility is required to calculate and maintain monthly and 12-month rolling time period records for VOC, CO, NOx, individual HAPs, and aggregate HAPs. The facility provided emission record for the previous 12-month period. Review of the emission records demonstrated compliance with the ton/yr emission limits.

Proper operation of the baghouse is demonstrated through pressure drop monitoring and the operation of a bag leak detection system. The facility provided pressure drop records for the past 60 days that showed pressure drop readings within the established ranges and no VE was noted. The facility acknowledged issues with VE observations and pressure drop readings, regarding documentation. The facility stated that they had initialed employee training to resolve issues.

**Observations:** During the inspection the pressure drop across the No. 1 unit was 3.4" and the pressure drop across the No. 2 unit was 5.2". No VE was noted from the baghouse, both within the established ranges.

**FGMOLDSILO**

Flex group includes a 100 ton new molding sand silo and a 50 ton reclaim molding sand silo.

Emissions of PM, PM10, PM2.5 and visible emission are restricted in the permit. Compliance with the emission limits is demonstrated through proper operation of the bin vent filters and daily VE observations.

Review of the facility records showed no issues regarding VE.

**Observations:** During the inspection, no emissions were observed from any silos.

**FGCORESILOS**

Flex group includes a 35 ton core sand silo and a 25 ton reclaim core sand silo.

Emissions of PM, PM10, PM2.5 and visible emission are restricted in the permit. Compliance with the emission limits is demonstrated through proper operation of the bin vent filters and daily VE observations.

Review of the facility records showed no issues regarding VE.

**Observations:** During the inspection, no emissions were observed from any silos.

**FGNATGASUNITS**

Flex group includes various natural gas combustion processes.

Emissions of PM, PM10, PM2.5, NOx, CO, VOC and Aggregate HAPs are restricted in the permit based on a lb./MMscf basis. Compliance with the emission limits is demonstrated through a material limit that restricts usage to natural gas and usage to 39.2MMBtu/hr. The facility is required to maintain maximum heat input capacity for all equipment in FGNATGASUNITS and calculate and maintain monthly and 12-month emission records.

The facility provided records of daily, monthly and 12-month natural gas usage, as well as monthly and 12-month emission records.

**FGPAINTING**

Flex group consist of metal parts painting in two spray booths.

Emission of VOCs are limited to 16.9 pph, 4.35 tons per month and 14.4 tpy. Compliance is demonstrated through material usage restrictions of 3.0 lbs. of VOC/gallon of coating, 9,600 gallons of coating usage per year and 5.63 gallons of coating usage per hour.

The facility provided records of coating usage and emissions. The facility records show a monthly high usage of less than 500 gallons over the past 12-months. Daily coating usage showed a high of under 20 gallons per day. A total of 4,119 gallons of coating was used for the previous 12-months. Facility records show VOC emissions of 0.503 lb/hr., 0.145 ton/month and 2.16 tpy. The facility stated that no isopropyl alcohol is used.

**FGMACTZZZZ**

The facility is an affected source under the area source iron and steel foundry NESHAP. The facility is considered a new, large source. Under the NESHAP, the melt furnace and fugitive emissions from the foundry building are affected.

The NESHAP limits emissions of PM or Total Metal HAPs from the melt furnace, as well as fugitive emissions from the foundry building.

Compliance with the emission limits is demonstrated through compliance testing, proper operation of the capture and control system and scrap charge restrictions.

During the most recent compliance testing conducted in February 2018, the facility demonstrated compliance

with the PM emissions limit. Test results showed 0.034 lb PM/ton charge (limit=0.1 lb PM/ton of charge).

The facility monitors the pressure drop and has equipped the baghouse with a bag leak detection system to demonstrate proper operation.

Compliance with the fugitive emission limit of 20% opacity is demonstrated by the requirement that the facility conducted Method 9 observations no less than every 6-months. Review of the facility's Method 9 readings have shown compliance with the 20% limit.

The facility has a metallic scrap management plan that was previously reviewed. The facility certifies compliance with the metallic scrap plan on a semi-annual basis. Observation of the scrap on-site showed that it appeared to comply with the scrap plan and the NESHSAP.

The facility has previously submitted the required plans and notices under the NEHAP, as well as on-going certification reports.

### FGFACILITY

FGFACILITY contains opt-out limits and restrictions to maintain the facility as an opt-out source. Compliance with the emission and material limits is demonstrated through material usage and emission records, which the facility provided.

Pollutant	Limit	Reported Actual
1. PM	Less than 89.9 tpy	5.85 tpy
2. PM10	Less than 89.9 tpy	6.85 tpy
3. PM2.5	Less than 89.9 tpy	3.38 tpy
4. NO <sub>x</sub>	Less than 89.9 tpy	3.17 tpy
5. CO	Less than 89.9 tpy	41.40 tpy
6. VOCs	Less than 89.9 tpy	31.55 tpy
7. Each Individual HAP	Less than 8.9 tpy	Highest = Phenol 4.67 tpy
8. Aggregate HAPs	Less than 22.4 tpy	8.38 tpy

### II. MATERIAL LIMIT(S)

Material	Limit	Reported Actual
1. Metal Melted	15,000 tons per year	10,651 tpy
2. Metal Poured	14,700 tons per year	7,885 tpy
3. Sand Processed	54,616 tons per year	29,296 tpy
4. Resin Binder/Catalyst Processed	546.2 tons per year	292 tpy

### Miscellaneous

The facility entered into Consent Order No. 58-2014 on January 6, 2015 to resolve violations documented at the facility. The facility is currently in compliance and has met the requirements of the consent order. The facility has requested termination of the consent order. AQD-Grand Rapids District recommends approval of the termination request.

**CONCLUSION**

Based on the information and observations made during this inspection, the facility appears to be in compliance with all applicable air quality rules and regulations.

NAME



DATE

9/23/19

SUPERVISOR

