

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

B157746254

FACILITY: GREDE LLC - IRON MOUNTAIN		SRN / ID: B1577
LOCATION: 801 S CARPENTER AVE, KINGSFORD		DISTRICT: Upper Peninsula
CITY: KINGSFORD		COUNTY: DICKINSON
CONTACT: Jack Bomberg , EHS Supervisor		ACTIVITY DATE: 09/18/2018
STAFF: Eric Grinstern	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced Compliance Inspection		
RESOLVED COMPLAINTS:		

### FACILITY DESCRIPTION

Grede LLC. – Iron Mountain, (parent company Grede LLC, which is a holding of American Axle & Manufacturing (AAM)). The facility was previously an MPG Company. MPG merged with AAM in 2016. The facility is located in the city of Kingsford and produces gray iron castings used in industrial machinery, hydraulic valves, and agricultural equipment. The major production operations are raw material handling and preparation, mold and core production, metal melting, pouring, cooling and shakeout, and cast finishing.

The facility operates a cupola that is controlled with an afterburner for carbon monoxide control and a baghouse for particulate control. Other processes at the facility are controlled with air pollution control equipment including wet scrubbers, baghouses, cartridge filters, and acid scrubbers.

### REGULATORY ANALYSIS

The facility is a Title V subject source (ROP No. MI-ROP-B1577-2014a) because the potential to emit criteria pollutants exceeds the major source threshold and because the facility's PTE for HAPs exceeds the major source threshold.

The ROP was modified in June 2016 to account for a change in emission control for EU-P018 MAIN PLANT SHAKEOUT. The Small Wet Collector was replaced with two fabric filter baghouses (Torit, aka "Iron Mountain" and Linsmeyer). The replacement of control was exempt from permitting under Rule 285(2)(d). The ROP was also modified to address an error associated with inverted stack heights in several emission units.

The facility was issued PTI No. 186-16 on December 2, 2016. The PTI addressed the replacement of the East and West Module Wet Collectors with a Torit baghouse. The Torit baghouse is in place and controlling emission from EU-P032 Module Sand System, EU-P034 Module Finishing and EU-P038 Module Shakeout. The replacement of a control device with a more efficient control device is often considered exempt from permitting under Rule 285(2)(d). Since the replacement of the wet collectors with a single baghouse would change the stack location and dimensions, the facility obtained a PTI. The modification has not been incorporated into the ROP. The facility submitted a request for a minor modification prior to proceeding with submitting a PTI application. The minor modification was not processed since a PTI was needed. The facility was under the impression that resubmitting a minor modification was not required. The facility was directed to submit a minor modification request to roll the PTI into the ROP.

The facility was issued PTI No. 65-17 on May 16, 2017. The PTI addressed the replacement of the Large Wet Collector controlling emissions from the Main Plant Sand System (EU-P012) and the Module Isocure (EU-P043). The Large Wet Collector was to be replaced with a Torit Baghouse. The control device replacement was permitted instead of being considered exempt because the location of the stack was changing and to address the ROP listing the control device as a wet collector. As of the date of this inspection, none of the modifications addressed in the PTI have occurred.

The facility is subject to the Iron and Steel Foundry NESHAP, Subpart EEEEE. NESHAP subject emission units are EU-009 Cupola, EU-1.6 Main Plant Pouring and Cooling, EU-P036 Module Pouring and Cooling, and EU-P044 Ductile Iron Production Unit. The following emission units are subject to CAM requirements in the ROP: EU-P012 (PM), EU-P014 (PM), EU-P018 (PM) and EU-PO40 (PM). Emission Unit EU-P044 Ductile Iron Production Unit is no longer in operation at the facility and the equipment has been disconnected.

The facility was issued a Violation Notice (VN) on September 23, 2015, addressing violations documented as part of an inspection conducted on July 20, 2015. To resolve those violations, Consent Order No. 23-2016 was signed June 22, 2016. In addition to placing enforceable requirements on the existing ROP conditions, the Consent Order required the facility to submit an updated PMP. The facility submitted the PMP on August 19, 2016.

The facility was issued a VN on August 6, 2018. The VN addressed the following issues: failure to provide notification of a change in responsible official, failure to adequately collect and dispose of air contaminants, failure to adequately maintain and operate an air cleaning device, emissions resulting in a violation of Rule 901, failure to provide notification of change in ownership, failure to conduct performance testing required by Subpart EEEEE, failure to provide notification of ownership change under the consent order.

The facility provided a response to the VN in a letter dated August 31, 2018.

#### COMPLIANCE EVALUATION

At the facility AQD staff consisting of Eric Grinstern and Joe Scanlan met with Jack Bomberg, EHS Supervisor, Tyler Hill, General Manager, and Joshua Carlson, Maintenance.

#### SOURCE-WIDE CONDITIONS

##### Emission/Material Limits

SOURCE-WIDE has limits that restricts the emission of PM10 (69.9 tpy) and VOC (132.67 tpy) on a facility-wide basis. Compliance with the PM10 and VOC emission limits is demonstrated through compliance with the metal throughput limits, which correlate to compliance with the emission limits.

Review of facility records showed metal throughput to be below the permitted 12-month average (164,250 tpy). Records were provided documenting that the melt total was below the 12-month average (June 2016 - August 2018). The highest observed melt throughput was observed for the 12-month time period ending in June 2018 (67,344 tons).

**EU-P009 CUPOLA**

Emission unit includes a WRIB Company Inc. 72 inch refractory lined, water wall, high efficiency cupola. The pollution control equipment includes afterburners, a quench tank, and a positive pressure baghouse. The cupola is subject to Subpart EEEEE.

**Emission/Material Limits**

EU-P009 has limits that restrict the emission of CO, PM, PM10 and SO2 from the cupola. Compliance with the emission limits is demonstrated through control equipment monitoring to demonstrate proper operation and compliance testing.

The most recent testing to demonstrate compliance with the emission limits was conducted in December 2013 at which time compliance with the emission limits was demonstrated. The facility is currently in the process of arranging performance testing.

The facility has a charge limit of 450 tons per day and 164,250 tons per 12-month period. Compliance is demonstrated via charge records. Facility records (June 2016 - August 2018) showed compliance with the 12-month rolling time period limit, with the most recent 12-month charge amount being 66,518 tons. Review of melt logs for the August 2018 until September 20, 2018 showed the highest daily charge rate to be 350 tons, which is in compliance with the 450 ton per day limit.

**Monitoring/Recordkeeping**

The facility is required to maintain records of the following:

1. Number and weight of charges on a production day basis.
  2. Records of the tons of metal charged on a 12-month rolling time period.
  3. Hours of operations.
  4. Record of CO, PM10 and SO2 emissions on a 12-month rolling time period.
  5. Temperature of cupola off-gas.
  6. Baghouse pressure drop.
  7. Amperage of the emission control system fan on a continuous basis.
  8. Daily non-certified VE readings
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1. The facility provided requested records (August 2018 – September 20, 2018) of the number and weigh of charges on a production day basis demonstrating compliance with the daily charge limit.
  2. Records of the tons of metal charged where provided (June 2016-August 2018) demonstrating compliance with the 12-month rolling time period limit.
  3. Hours of operation is tracked through documenting the minutes that the cupola is shutdown each shift. This is documented on the Melt Period Log.

4. Records of CO, PM10 and SO2 emissions on a monthly/12-month rolling time period (June 2016 – August 2018) were supplied. The records showed the highest monthly/12-month rolling time period emission rate occurred in June 2018. Reported emissions for the three pollutants were below the permitted limits.
5. The facility is required to continuously monitor and record the cupola off-gas temperature. Staff reviewed the continuous records on-site. Proper operation of the afterburner is demonstrated through monitoring the temperature. The afterburner temperature must be maintained above a 15 minute average of 1300 degrees F, outside of the off-blast allowance time. The afterburner temperature at the time of the inspection was 1783 degrees F. For the records reviewed, all temperature readings were above the permit minimum of 1300 degrees.
6. The facility is required to continuously monitor and record the baghouse pressure drop. It was determined that the facility inadvertently forgot to continuous record the baghouse pressure drop when they switched data system sometime in 2016. The facility does have records of the pressure drop recorded once daily. Subsequent to the inspection the facility was able to locate records of the continuous recording of the pressure drop across the baghouse.

**As part of demonstrating proper operation of the baghouse, the permit requires that the pressure drop be within the range listed in the PMP, which is a differential of a minimum of 1.0 inch. The pressure drop of the baghouse controlling EU-P009 was 9.09 inches at the time of the inspection. For the daily records reviewed, all pressure drop readings showed operation above the 1.0 inch minimum.**

7. Continuous monitoring and recording of the emission control system fan amperage is required. Proper operation is also based upon the emission control fan amperage being within the range between 115 and 200 amperes. During the inspection the fan amperage was 184, which is within the established range for proper operation. For the records reviewed on-site, all fan amperage readings were within the established range.
8. Non-certified visible emission observations are required to be recorded once daily. Proper operation of the baghouse is no visible emissions. Review of the daily records for the past 60 days showed no emissions from the baghouse.

**During the inspection no VE was noted from the baghouse. Additionally, the baghouse was observed prior to the inspection from 08:30 CST to 09:00 CST, during which time no VE was noted. The baghouse was also observed on the day after the inspection. The baghouse was observed at 11:09 CST, at which time no VE was noted. On this day the cupola cap was up, indicating the cupola was not operating. Review of the records provided by the facility show no data entries for September 19<sup>th</sup>, indicating the cupola was down.**

#### Testing/Sampling

The facility is required to test between 6 and 18 months prior to the expiration of the ROP.

The facility tested and demonstrated compliance with the ROP limits emission limits in December 2013. The ROP expires on September 22, 2019. The facility is in the process of arranging for compliance testing.

#### Stack/Vent Restrictions

Visual evaluation of the stack (SV009-324644) showed that it appeared to meet the height requirement.

#### Inspection Observations:

Staff observed the cupola baghouse the morning of the inspection, prior to entering the facility. During this period of time, no opacity was observed from the baghouse, however, opacity was observed coming from the area of the cupola tower. Staff also observed the baghouse throughout the inspection and did not observe any visible emissions. During the inspection staff did observe fugitive emissions from the cupola tower. The fugitive opacity was the most noticeable when the cupola was off-blast during lunch break. It appears that during off-blast the variable speed emission control fan speed is reduced to avoid charge within the cupola from continuing to melt and over load the cupola. Reducing the fan speed reduces capture at the cupola charge door which results in fugitive emissions. Observed emissions appeared to be less than 20 percent on a 6-minute average. This issue will be further evaluated as part of a state-wide assessment of capture system monitoring and efficiency for emission units subject to Subpart EEEEE.

#### EU-P011 SHELL CORE

Emission unit represents the production of phenolic resin-baked (shell) cores. The cores are produced on 21 natural gas heated core machines. Emissions from the core machines are vented indoors, and subsequently the core area is vented by fans located on the roof. Exhaust from the heater/cooler is controlled by a baghouse that vents internally.

Observation of the roof area associated with the shell core machines showed no visible emissions during the inspection.

#### Emission/Material Limits

EU-P011 has limits that restrict the emission of PM to 0.10 pounds per 1,000 pounds of exhaust gases. Compliance with the emission limit is based on proper operation of the core machines. Compliance can also be verified through emissions testing, which has not been required.

#### EU-P012 MAIN PLANT SAND SYSTEM

Process includes activities associated with collection and distribution of mold sand used in the Main Plant with the exception of the Sand Conditioning System. The Main Plant Sand System is controlled with a wet dust collector (Large Wet Collector). Additionally, the Module sand heater/cooler is ducted to and controlled by the Main Plant Sand System wet dust collector. This is a CAM subject emission unit for PM.

The facility was issued PTI No. 65-17 on May 16, 2017. The PTI addressed the replacement of the Large Wet Collector controlling emissions from the Main Plant Sand System with a Torit collector. The

modifications addressed in PTI No. 65-17 have not taken place, therefore the ROP conditions are still applicable.

#### Emission/Material Limits/Records

EU-P012 has limits that restrict the emission of PM and PM10. Compliance with the emission limits is demonstrated through control equipment (wet collector) monitoring to demonstrate proper operation.

#### Design Parameters/Testing/Monitoring/Records

To demonstrate proper operation of the large wet collector, the permit requires daily monitoring and recording of the fan amperage and pressure drop. Additionally, proper operation is determined through daily visible emissions observations.

Readings at the time of the inspection:

	Pressure Drop	(proper range)	Amp	(proper range)
Large Wet coll.	3.5"	(2.0-4.0)	125	(122-137)

Review of the pressure drop, amperage and VE records for the previous 60 days showed all values to be within the established ranges and no VE, except for August 31, 2018. On August 31, 2018 the pressure drop was recorded at 1.9, which is slightly below the established range. All other parameters were normal on that day.

Staff made observations of the large wet collector showed no VE during the inspection.

#### EU-P014 MAIN PLANT FINISHING

Process is defined as the collection of dust from all activities associated with metal finishing conducted in the Main Plant. These activities include grinding, chipping, and tumbling (Wheelabrators). The process exhaust is controlled by three pulse-jet baghouses (Steelcraft, East Fuller, and West Fuller). This emission unit is subject to CAM for PM.

#### Emission/Material Limits

EU-P014 has limits that restrict the emission of PM and PM10. Compliance with the emission limits is demonstrated through control equipment (baghouses) monitoring to demonstrate proper operation.

#### Design Parameters/Testing/Monitoring/Records

To demonstrate proper operation of the baghouses the permit requires daily monitoring and recording of the pressure drops and fan amps.

During the inspection the following values were observed:

	Pressure Drop	(proper range)	Amp	(proper range)
Steelcraft	5.3"	(3.5-5.5)	150	(145-160)
E. Fuller	6.5"	(5.0-7.0)	110	(100-120)
W. Fuller	6.0"	(5.0-7.0)	130	(120-140)

Review of the pressure drop, amperage and VE records for the previous 60 days showed all values to be within the established ranges and no VE, except for July 24 & 25, 2018 and August 22, 2018. On these days the fan amp readings of the West Fuller Collector were under the established range (July 24<sup>th</sup> = 117, July 25 = 119, August 22 = 117). All other operating parameters were within the normal ranges on those days. The facility will be requested to document actions taken to in response to operating parameters outside of the established range.

Staff made observations of the stacks of the three baghouses, which showed no VE during the inspection.

#### EU-P016 – MAIN PLAN POURING & COOLING

Process includes all activities associated with the pouring and cooling of molten iron on six mold lines in the Main Plant. There is no control equipment associated with this emission unit

#### Emission/Material Limits

EU-P016 has limits that restrict the emission of PM10.

The emission unit is subject to Subpart EEEEE, PM limit. Compliance with the PM emission limit is demonstrated through emissions testing conducted in accordance with Subpart EEEEE in May 2012, at which time the facility demonstrated compliance without control. The facility is late in conducting re-testing to demonstrate compliance. Failure to test was addressed in a VN dated August 6, 2018. The facility stated that they are in the process of arranging compliance testing.

#### EU-P018 MAIN PLANT SHAKEOUT

Castings, gates, risers, and sand are mechanically separated by shaking in the Main Plant. The shakeout receives the materials from the end of the dump conveyor. The Main Plant Shakeout process is controlled by two fabric filter units (Torit and Linsmeyer). This emission unit is subject CAM for PM.

#### Emission/Material Limits

EU-P018 has limits that restrict the emission of PM and PM10. Compliance with the emission limits is demonstrated through control equipment monitoring to demonstrate proper operation.

#### Design Parameters/Testing/Monitoring/Records

To demonstrate proper operation of the small wet collector the facility records the daily motor amperage and pressure drop.

During the inspection the following values were observed:

	Pressure Drop	(proper range)	Amp	(proper range)
IM Torit	4.6"	(1-6)	182	(175-210)
Lindsmeyer	4.5"	(4-7)	72	(55-75)

Review of the pressure drop, amperage and VE records for the previous 60 days showed all values to be within the established ranges and no VE, except for August 9, 2018. On this day the fan amp for the IM Torit unit was 174. All other operating parameters were within the normal ranges on those days. The facility will be requested to document actions taken to in response to operating parameters outside of the established range.

Staff made observations of the stacks of the three baghouses, which showed no VE during the inspection.

**EU-P021 ISOCURE**

Production of phenolic urethane coldbox (Isocure) cores in the Main Plant using dimethylethylamine (DMEA). The facility does not use triethylamine (TEA) in the Isocure processes. Sand and resin are mixed in three mullers prior to addition to the core machines. The cores are produced on ten Isocure core machines. The Main Plant Isocure mullers, silo, and Kloster heater/cooler emissions are controlled by a baghouse. Emissions from the Main Plant Isocure core machines are controlled by a cartridge filter followed by an acid scrubber.

**Emission/Material Limits/Records**

EU-P021 has limits that restrict the emission of DMEA, PM, PM10 and VOC. Compliance with the emission limits is demonstrated through control equipment (baghouse, acid scrubber) monitoring to demonstrate proper operation and a material usage limit.

**Design Parameters/Testing/Monitoring/Records**

To demonstrate proper operation of the acid scrubber, the permit requires monitoring and recording of the flow rate and pH once per shift. The facility maintains records of the pH and flow.

Readings at the time of the inspection:

	pH	(proper range)	Flow	(proper range)
Isocure Scrubber	1.03	(0.0-4.5)	95	(85-130)

Review of the pH and flow records for the previous 60 days showed all values to be within the established ranges.

**EU-P032 MODULE SAND SYSTEM**

Process includes activities associated with the collection and distribution of mold sand used in the Module Plant. These activities include the Module Sand Muller: collection of spill sand, screening of

used sand, and conveying sand. The Module Sand System is controlled by the Module Torit Collector (PTI No. 186-16). The emission unit was previously controlled by the East and West wet dust collectors. The Module Torit Collector also serves Module Finishing, and Module Shakeout.

**Emission/Material Limits**

EU-P032 has limits that restrict the emission of PM and PM10. Compliance with the emission limits is demonstrated through control equipment monitoring to demonstrate proper operation.

**Design Parameters/Testing/Monitoring/Records**

To demonstrate proper operation of the baghouse the permit (PTI No. 186-16) requires continuous monitoring and daily recording of the pressure drop.

Readings at the time of the inspection:

	Pressure Drop	(proper range)
Module Torit	1.5"	(1.0-6.0)

Review of the pressure drop and VE records for the previous 60 days showed all values to be within the established ranges and no VE, except for August 2, 2018. On this day the pressure drop was 12 inches. The facility documented that the air blower was not operating. Upon rebuilding the blower, the pressure drop was noted to have returned to normal.

Staff made observations of the stack showed no VE during the inspection. While under the baghouse particulate was falling on staff. Additionally, a large amount of particulate was observed around the baghouse. The cause of the fallout was a hole in the bottom portion of the baghouse. The particulate fallout was collected material falling through the hole. The facility stated that the hole had been there for approximately two weeks and they needed to wait for a shutdown to conduct the repair due to the location on the baghouse. Prior to completing the inspection, the facility shutdown, the Module Foundry and repaired the baghouse.

Failure to properly maintain the baghouse is a violation (PTI No. 186-16, Special Condition No. EU-PO32, III.2, Rule 910, Rule 370)

**EU-P034 MODULE FINISHING**

Process is defined as the collection of dust from all activities associated with metal finishing conducted in the Module Plant. These activities include grinding, chipping, and hang blast (Wheelabrators). The Module Sand System is controlled by the Module Torit Collector (PTI No. 186-16). The emission unit was previously controlled by the East and West wet dust collectors. The Module Torit Collector also serves Module Sand. and Module Shakeout.

**Emission/Material Limits**

EU-P032 has limits that restrict the emission of PM and PM10. Compliance with the emission limits is demonstrated through control equipment monitoring to demonstrate proper operation.

**Design Parameters/Testing/Monitoring/Records**

To demonstrate proper operation of the baghouse the permit (PTI No. 186-16) requires continuous monitoring and daily recording of the pressure drop.

Readings at the time of the inspection:

	Pressure Drop	(proper range)
Module Torit	1.5"	(1.0-6.0)

Review of the pressure drop and VE records for the previous 60 days showed all values to be within the established ranges and no VE, except for August 2, 2018. On this day the pressure drop was 12 inches. The facility documented that the air blower was not operating. Upon rebuilding the blower, the pressure drop was noted to have returned to normal.

Staff made observations of the stack showed no VE during the inspection. While under the baghouse particulate was falling on staff. Additionally, a large amount of particulate was observed around the baghouse. The cause of the fallout was a hole in the bottom portion of the baghouse. The particulate fallout was collected material falling through the hole. The facility stated that the hole had been there for approximately two weeks and they need to wait for a shutdown to conduct the repair due to the location on the baghouse. Prior to completing the inspection, the facility shutdown, the Module Foundry and repaired the baghouse.

Failure to properly maintain the baghouse is a violation (PTI No. 186-16, Special Condition No. EU-PO34, III.2, Rule 910, Rule 370)

**EU-P036 – MODULE POURING AND COOLING**

Process includes all activities associated with the pouring and cooling of molten iron on one Hunter mold line in the Module Plant. There is no dust collection equipment associated with this emission unit

Molten metal is supplied by the cupola.

**Emission/Material Limits**

EU-P036 has limits that restrict the emission PM10.

The emission unit is subject to Subpart EEEEE, PM limit. Compliance with the PM emission limit is demonstrated through emissions testing conducted in accordance with Subpart EEEEE in May 2012, at which time the facility demonstrated compliance without control. The facility is late in conducting re-testing to demonstrate compliance. Failure to test was addressed in a VN dated August 6, 2018. The facility stated that they are in the process of arranging compliance testing.

**EU-P038 MODULE SHAKEOUT**

Castings, gates, risers, and sand are mechanically separated by shaking in the Module Plant. The Module Sand System is controlled by the Module Torit Collector (PTI No. 186-16). The emission unit was

previously controlled by the East and West wet dust collectors. The Module Torit Collector also serves Module Sand and Module Finishing.

**Emission/Material Limits**

EU-P032 has limits that restrict the emission of PM and PM10. Compliance with the emission limits is demonstrated through control equipment monitoring to demonstrate proper operation.

**Design Parameters/Testing/Monitoring/Records**

To demonstrate proper operation of the baghouse the permit (PTI No. 186-16) requires continuous monitoring and daily recording of the pressure drop.

Readings at the time of the inspection:

	Pressure Drop	(proper range)
Module Torit	1.5"	(1.0-6.0)

Review of the pressure drop and VE records for the previous 60 days showed all values to be within the established ranges and no VE, except for August 2, 2018. On this day the pressure drop was 12 inches. The facility documented that the air blower was not operating. Upon rebuilding the blower, the pressure drop was noted to have returned to normal.

Staff made observations of the stack showed no VE during the inspection. While under the baghouse particulate was falling on staff. Additionally, a large amount of particulate was observed around the baghouse. The cause of the fallout was a hole in the bottom portion of the baghouse. The particulate fallout was collected material falling through the hole. The facility stated that the hole had been there for approximately two weeks and they need to wait for a shutdown to conduct the repair due to the location on the baghouse. Prior to completing the inspection, the facility shutdown, the Module Foundry and repaired the baghouse.

Failure to properly maintain the baghouse is a violation (PTI No. 186-16, Special Condition No. EU-PO38, III.2, Rule 910, Rule 370)

**EU-P040 SAND CONDITIONING SYSTEM**

Process represents the activities associated with the conditioning of mold sand used in the Main Plant. The process cools hot sand to approximately 120 degrees Fahrenheit or less while maintaining grain distribution and bond addition. A Steelcraft baghouse collects the emissions from all of the sand handling activities which include screening operations, storage silos, cooling and mixing, and the cyclone separator. This emission unit is subject CAM for PM.

**Emission/Material Limits**

EU-P040 has limits that restrict the emission of PM and PM10. Compliance with the emission limits is demonstrated through control equipment (baghouse) monitoring to demonstrate proper operation

**Design Parameters/Testing/Monitoring/Records**

To demonstrate proper operation of the baghouse, the permit requires daily monitoring and recording of the pressure drop and fan amperage.

Readings at the time of the inspection:

	Pressure Drop	(proper range)	Amp	(proper range)
Steelcraft	5.5"	(3.5-5.5)	151	(110-160)

Review of the pressure drop, amperage and VE records for the previous 60 days showed all values to be within the established ranges and no VE.

During the inspection no VE was noted from the exhaust of the collector.

EU-P041 MAIN PLANT BOND SILO

Process represents the loading of bond into the Main Plant Bond Silo, which is located external to the plant. The bond is used in the Main Plant. A Rumelin bin vent filter controls emissions generated during loading.

Emission/Material Limits

EU-P041 has limits that restrict the emission of PM (0.10 pounds per 1,000 pounds of exhaust gases). Compliance with the emission limits is demonstrated through proper operation of the control equipment (bin vent).

During the inspection the silo was being filled, no VE was noted from the bin vents associated with the silo.

EU-P042 MODULE PLANT BOND SILO

Process represents the loading of bond into the Module Bond Silo. The bond is used in the Module Plant. A Flex Kleen bin vent filter controls emissions generated during loading.

Emission/Material Limits

EU-P042 has limits that restrict the emission of PM (0.10 pounds per 1,000 pounds of exhaust gases). Compliance with the emission limits is demonstrated through proper operation of the control equipment (bin vent).

The bin was not being filled at the time of the inspection, no VE was noted.

EU-PO43 MODULE Isocure

Production of phenolic urethane cold box (Isocure) cores in the Module Plant using dimethylethylamine (DMEA). The facility does not use triethylamine (TEA) in the Isocure processes. Emissions from the Module Isocure process are controlled by a cartridge filter-acid scrubber system. The cores are produced on three core machines. Sand and resin are mixed in a muller prior to addition to core

machines. Exhaust from the Module Isocure silos and Module sand heater/cooler is ducted to and controlled by the Main Plant Sand System wet dust collector

**Emission/Material Limits/Records**

EU-P043 has limits that restrict the emission of DMEA, PM, PM10 and VOC. Compliance with the emission limits is demonstrated through control equipment (baghouse, acid scrubber) monitoring to demonstrate proper operation and a material usage limit. Based on this inspection, parametric monitoring and proper control equipment operation and material usage demonstrate compliance with the emissions limits.

**Design Parameters/Testing/Monitoring/Records**

To demonstrate proper operation of the acid scrubber, the permit requires monitoring and recording of the flow rate and pH once per shift. The facility maintains records of the pH and flow.

Readings at the time of the inspection:

	pH	(proper range)	Flow	(proper range)
Isocure Scrubber	1.9	(1.0-2.5)	31	(25-45)

Review of the pH and flow records for the previous 60 days showed all values to be within the established ranges.

**EU-PO44 DUCTILE IRON PRODUCTION UNIT**

Process has been disconnected/shutdown.

**FGMACT-EEEEEE**

The facility is subject to the Iron and Steel Foundry NESHAP, Subpart EEEEE. NESHAP subject emission units are EU-009 Cupola, EU-16 Main Plant Pouring and Cooling, EU-P036 Module Pouring and Cooling, and EU-P044 Ductile Iron Production Unit.

Summary of emission limits/restrictions applicable to each emission unit:

**Each building or structure housing an iron foundry**

20% fugitive opacity limit, facility is required to conduct testing semi-annually to demonstrate compliance. The facility has provided copies of the opacity tests conducted Badger Laboratories. The test reports show that compliance with the 20% limit.

**EU-009 CUPOLA**

PM or Total Metal HAP Limit, VOHAP limit

Status: Facility tested and demonstrated compliance in May 2012. The deadline to conduct retesting was May 2017. The facility missed the deadline and was issued a VN on August 6, 2018. The facility stated that they are in the process of scheduling testing.

Scrap requirements: The facility has a scrap plan in place in accordance with Subpart EEEEE. The facility charges a considerable amount of auto frag. The facility continues to receive the auto frag from Schneider’s Iron and Metal, located in Kingsford.

EU-P044 DUCTILE IRON

Process shutdown/disconnected

EU-P016 MAIN PLANT POURING AND COOLING

PM or Total Metal HAP Limit

Status: Facility tested and demonstrated compliance in May 2012  
The deadline to conduct retesting was May 2017. The facility missed the deadline and was issued a VN on August 6, 2018. The facility stated that they are in the process of scheduling testing.

EU-P036 MODULE POURING AND COOLING

PM or Total Metal HAP Limit

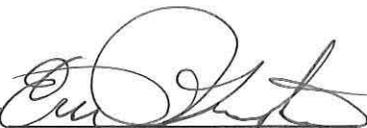
Status: Facility tested and demonstrated compliance in May 2012  
The deadline to conduct retesting was May 2017. The facility missed the deadline and was issued a VN on August 6, 2018. The facility stated that they are in the process of scheduling testing.

COMPLIANCE STATUS

Based on this inspection, the facility appears to be in compliance with applicable air quality rules and regulations, with the exception of the failure to properly operate the baghouse associated with EU-P032 Module Sand System, EU-P034 Module Finishing and EU-P038 Module Shakeout. A VN will be issued to address failing to properly operate the baghouse and failure to properly handle collected air contaminants.

The Upper Peninsula District Office has requested to issue the VN associated with Module System baghouse.

All compliance activities from this date forward will be the responsibility of the UP District Office.

NAME 

DATE 9/25/2018

SUPERVISOR 