

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

N586642042

FACILITY: METAL TECHNOLOGIES, INC., RAVENNA DUCTILE IRON		SRN / ID: N5866
LOCATION: 3800 Adams Road, RAVENNA		DISTRICT: Grand Rapids
CITY: RAVENNA		COUNTY: MUSKEGON
CONTACT: Ken Carrier , Maintenance Planner		ACTIVITY DATE: 10/05/2017
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced inspection		
RESOLVED COMPLAINTS:		

METAL TECHNOLOGIES, INC. - RAVENNA DUCTILE IRON (N5866)

FACILITY DESCRIPTION

The facility is a ductile iron foundry that primarily casts automotive and small engine parts. Melting is performed in three electric induction furnaces with charge material that has been preheated. The molten metal is poured into green sand molds. The facility uses shell sand cores that are purchased.

Emissions from the melting, pouring, cooling, finishing and sand handling operations are controlled by baghouses.

REGULATORY ANALYSIS

The facility is a Title V subject source (ROP No. MI-ROP-N5866-2014b) because it is a major source of CO emissions and because of it's PTE for HAPs. The facility is subject to the Iron and Steel Foundry NESHAP, Subpart EEEEE. NESHAP subject emission units are EU-PREHEATERS, EU-MELTING, and EU-POURING. The facility is also subject to PSD based on CO emissions. The emission units EU-CLEAN, EU-MELTING, EU-POURING, EU-COOLING, EU-SHAKEOUT and EU-SANDSYSTEM are subject to CAM requirements.

COMPLIANCE EVALUATION

This inspection coincided with a USEPA Region 5 led inspection. The USEPA led inspection was conducted by Scott Connolly and Mohammed Shuaibi.

Prior to entering the facility, a survey of the parameter was performed. No visible emissions or odors were noted prior to entering the facility.

At the facility, staff met with Ken Carrier, Maintenance Engineer, and Dean Lynn, Plant Manager.

The facility representatives provided a summary of the facility's history and operations during a meeting prior to touring the facility.

Summary of facility history/operations discussed:

The facility was purchased by Metal Technologies in 1997

Employees: 234

Operations are currently 24 hours a day, five days a week

The facility currently melts approximately 380 tons a day and nets 180 tons a day.

The facility has not undertaken any major projects in the last 5 years and do not have any planned.

The facility has (3) 20-ton coreless electric induction furnaces.

Raw material is trucked into the facility.

Scrap consists of shredded steel, pig iron and busheling.

Scrap is inspected upon receipt.

The facility utilizes a charge preheater.

Furnace emissions are captured with rim vents that duct to a baghouse, as well as a hood for tapping/inoculation and roof hoods.

Below is a summary of compliance based upon ROP emission units.

EU-CLEAN

Emission unit includes cast finishing operations, including (4) shotblasters, (1) tumblaster, (16) grinders and miscellaneous inspection/cleaning stations. All processes are captured and ducted to the West Blast Baghouse (SV-CLEAN-03).

This unit is subject to CAM for particulate matter.

Emission/Material Limits

Restricts the emissions of PM and opacity. Compliance with the emission limits for particulate and opacity are demonstrated through baghouse monitoring and compliance testing. Compliance is also demonstrated via monthly emission records that are calculated utilizing emission factors from testing and material usage/production rates. Based on this inspection, baghouse monitoring, compliance testing and emission records demonstrate compliance with the emissions limits. (Emission Records Attached)

The last compliance test was conducted in February 2015, at which time compliance with the particulate limits was demonstrated.

Baghouse monitoring is accomplished via the following permit requirements: daily VE observations, semi-annual Method 9 readings, operation of the baghouse within PM plan specified pressure drop range, operating in accordance with a PM plan for the baghouse.

Review of facility records showed compliance with the above requirements. (Records Attached)

Process/Operational Restrictions/Design Parameters/Records

The permit requires instrumentation to continuously measure the pressure drop across the baghouse and to record the reading once per day. The facility is in compliance with this condition, based on records reviewed.

The baghouse (West Blast) has a pressure drop operating range of 2 to 10 inches specified in the PM plan. Review of the daily records (August 1, 2017 through October 24, 2017) of pressure drop showed them to be within the 2 to 10 inch range with no VE noted. (Dust Collector Readings and Observations Attached)

Testing/Sampling

Testing required within 180 days of ROP issuance (June 5, 2014). The facility requested an extension to conduct testing required by the ROP (not Subpart EEEEE). An extension was granted to allow the facility to submit a complete test report within 90 days of the issuance of the PTI issued on April 29, 2015. Testing was approved to be conducted prior to the issuance of the permit in February 2015, for particulate matter. Test results showed compliance with the ROP emission limits.

	lb/1000lb dry	lb/hr
PM Limit:	0.01	2.2
PM Result:	0.00	0.2

Monitoring/Recordkeeping

Records of the hours of operation and calculated particulate emission rates were supplied by the facility (attached) Review of the previous 12-months of records show compliance with the pound per hour and ton per year emission limits. Facility records show the TPY PM emission rate, based on a 12-month rolling total, to be 0.576 tons. This is in compliance with the permitted limit of 9.6 tons. The pound per hour emission rate used by the facility is based upon the most recent stack test (0.23 lb/hr). This emission rate is in compliance with the permitted limit of 2.2 lb/hr.

Reporting

Review of the most recent annual and semiannual ROP certification reports as well as CAM certification, showed that they were submitted by the deadline and that no deviations were reported.

Stack/Vent Restrictions

The stack associated with the West Blast is required to be a maximum of 60 inches in diameter and have a minimum height of 65 feet. Visual evaluation of the stack showed that it appeared to meet the required dimensions.

Notes: Observation of the baghouse stack showed no VE during the on-site inspection.

FG-MELTING

Flexible group that consists of metal processing operations that have combined emission limits. Includes: EU-PREHEATERS, EU-MELTING and EU-INOCULATION.

Emission/Material Limits

Restricts the emission of PM, CO, VOC, NOx, Lead, Total Chromium and Opacity. Compliance with the emission limits is demonstrated through baghouse monitoring and compliance testing. Compliance is also demonstrated via monthly emission records that are calculated utilizing emission factors from testing and material usage/production rates.

Based on this inspection, baghouse monitoring, compliance testing and emission records demonstrate compliance with the emissions limits.

The last compliance test was conducted in February 2015, at which time compliance was demonstrated for all pollutants (see below)

Review of the previous 12-months of records showed compliance with the lb. /hr. and ton per year limit for all pollutants with emission limits in the flexible group. (Records attached)

Baghouse monitoring is accomplished via the following permit requirements: daily VE observations, semi-annual Method 9 readings, operation of the baghouse within PM plan specified pressure drop range, operation of a bag leak detection system, operating in accordance with a PM plan for the baghouse. Review of facility records showed compliance with the above requirements.

Records of the hours of operation, material charge rates to the furnace were supplied by the facility (attached). Review of the facility records shows compliance with the charge limits. The previous 12-months of data showed compliance with the 27 ton per hour and 132,000 ton per year furnace charge limit.

Process/Operational Restrictions/Design Parameters/Records

As part of demonstrating proper operation of the baghouse, the O&M plan requires monitoring and recording of the pressure drop.

The baghouses (W. Melt East and West, and East Melt) have the following pressure drop operating ranges in the facility PM Plan.

W. Melt East: 1 to 10
 W. Melt West: 1 to 10
 East Melt: 1 to 8

Review of the daily records (August 1, 2017 through October 24, 2017) of pressure drop showed them to be within the specified ranges. Additionally, no VE was noted. (Dust Collector Readings and Observations Attached)

Monitoring/Recordkeeping

Records of the hours of operation and calculated particulate emission rates were supplied by the facility. (attached) Review of the previous 12-months of records show compliance with the pound per hour and ton per year emission limits. The permit appears to contain a typo in requiring records for the emission of pollutants listed in SC I.1 through SC I.23.

There are only SC I.1 through SC I.13 in the current version of the permit.

	Limit lb/hr	Limit ton/yr	Test data lb/hr	Calc. Ton/yr
PM	2.5	10.95	0.31	0.719
CO	15.1	42.8	6.3	12.37
VOC	4.4	10.8	2.33	4.9
NOx	3.1	13.2	1.4	2.8
Pb	0.07	0.16	0.0016	0.003
Total Cr	0.00078	NA	0.00073	NA

Facility records demonstrated compliance with the ton per hour charge limit as well as the ton per year limit. The facility charged a high of 17.43 tons per hour on a monthly basis, which is below the 27-ton limit. The facility charged a 12-month high of 117,753, which is below the 132,000 ton per year limit.

Testing/Sampling

Testing required within 180 days of ROP issuance (June 5, 2014). The facility requested an extension to conduct testing required by the ROP (not Subpart EEEEE). An extension was granted to allow the facility to submit a complete test report within 90 days of the issuance of the PTI issued on April 29, 2015. Testing was approved to be conducted prior to the issuance of the permit in February 2015. Testing demonstrated compliance with current applicable limits.

Reporting

Review of the most recent annual and semiannual ROP certification reports as well as CAM certification, showed that they were submitted by the deadline and that no deviations were reported.

Stack/Vent Restrictions

Visual evaluation of the stacks (SV-MELT-01 and SV-INOCULATION-05) showed that they appeared to meet the required dimensions.

Notes: Observation of the baghouse stack showed no VE during the on-site inspection.

FG-SAND

Flexible group that consists of sand related processes, including EU-COOLING, EU-SHAKEOUT, EU-POURING and EU-SANDSYSTEM.

Emission/Material Limits/Records

Compliance with the emission limits are demonstrated through baghouse monitoring and compliance testing. Compliance is also demonstrated via monthly emission records that are calculated utilizing emission factors from testing and material usage/production rates. Based on this inspection, baghouse monitoring, compliance testing and emission records demonstrate compliance with the emissions limits.

The last compliance test was conducted on November 19-21, 2014, at which time compliance with the emission limits was demonstrated for all pollutants, currently limited by the current PTI.

Review of the previous 12-months of records showed compliance with the lb. /hr. and ton per year limit for the pollutants with emission limits in the flexible group.

	<u>Limit lb/hr</u>	<u>Limit ton/yr</u>	<u>Test data lb/hr</u>	<u>Calc. Ton/yr</u>
PM	6.0	26.3	3.96	9.89
CO	98.5	270	32.67	74.92
VOC	4.0	12	2.56	5.9
Total Cr	0.00168	---	.0014	---

Baghouse monitoring is accomplished via the following permit requirements: daily VE observations, semi-annual Method 9 readings, operation of the baghouse within PM plan specified pressure drop range, operating in accordance with a PM plan for the baghouse
Review of facility records showed compliance with the above requirements.

Review of the previous 12-months of data showed compliance with the 600,000 ton per year sand limit. The facility records showed a 12-month usage of 420,351 tons.

Process/Operational Restrictions/Design Parameters/Records

As part of demonstrating proper operation of the baghouse, the O&M plan requires monitoring and recording of the pressure drop.

The baghouses (East Sand Baghouse, West Sand Baghouse) have the following pressure drop operating ranges in the facility PM Plan.

East Sand Baghouse: 2 to 10

West Sand Baghouse: 2 to 10

Review of the daily records (August 1, 2017 through October 24, 2017) of pressure drop showed them to be within the specified ranges. Additionally, no VE was noted. (Dust Collector Readings and Observations Attached)

Testing/Sampling

The last compliance test was conducted on November 19-21, 2014 and retesting on February 10-13, 2015. At which time compliance was demonstrated.

Reporting

Review of the most recent annual and semiannual ROP certification reports as well as CAM certification, showed that they were submitted by the deadline and that no deviations were reported.

Stack/Vent Restrictions

Visual evaluation of the stack (SV-SAND-02) showed that they appeared to meet the required dimensions.

FG-CAMUNITS

Flexible group consisting of the emission units subject to CAM requirements. Emission units include: EU-CLEAN, EU-MELTING, EU-POURING, EU-COOLING, EU-SHAKEOUT and EU-SANDSYSTEM are subject to CAM requirements.

Process/Operational Restrictions/Design Parameters/Records

For EU-CLEAN, requires instrumentation to continuously measure the pressure drop across the baghouse and to record the reading once per day. The facility is in compliance with this condition based on records reviewed.

For EU-MELTING, EU-POURING, EU-COOLING, EU-SHAKEOUT and EU-SANDSYSTEM, requires the operation and maintenance of bag leak detection systems.

The facility has installed and is operating bag leak detection systems.

Testing/Sampling

For all CAM subject emission units, requires semi-annual Method 9 readings to demonstrate compliance with the opacity limit. Review of the Method 9 readings for the past year showed no exceedances of the opacity limit. (Records attached)

Monitoring/Recordkeeping

For all CAM subject emission units, requires daily non-certified visual inspections for opacity. Review of the daily records for visual opacity inspection showed that no opacity issues were noted. (Records attached)

NESHAP REQUIREMENTS – SUBPART EEEEE

FG-MACT EEEEE

Flex group covers the Iron and Steel Foundry NESHAP requirements.

EU-PREHEATER - Scrap Preheater
EU-MELTING – Melting Furnaces
EU-POURING – Metal Pouring

Emission/Material Limits

Compliance with the particulate matter limit is primarily demonstrated through compliance testing every 5 years and proper operation of the capture and control systems. Testing was performed in November 19-21, 2014, at which time compliance with the emission limits was demonstrated.

Design/Equipment Parameters

The NESHAP requires the capture and control system to be installed, operated and maintained in accordance with an approved O&M plan. The facility has an approved O&M plan that addresses capture and control O&M.

Testing/Sampling

Testing was performed in 2014. In 2013, testing was conducted for under Subpart EEEEE for the new scrap preheater. Test results showed compliance for the applicable limits.

Monitoring/Recordkeeping

The facility is using a bag leak detection system to monitor the relative change in PM loading.

Reporting

Review of the most recent NESHAP certification report showed that it was submitted by the deadline and that no deviations were reported.

FG-IC RICE MACT EXEMPT

This flex group was added as part of the last renewal of the ROP, however it was determined during a previous inspection that they do not have an emergency generator at the facility.

Conclusion

Based on this inspection, the facility is in compliance with applicable air quality rules and regulations at this time.

NAME 

DATE 10/31/2017

SUPERVISOR 