

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

A864045222

FACILITY: AK STEEL - DEARBORN WORKS		SRN / ID: A8640
LOCATION: 4001 MILLER ROAD, DEARBORN		DISTRICT: Detroit
CITY: DEARBORN		COUNTY: WAYNE
CONTACT: James E. Earl , Environmental Manager		ACTIVITY DATE: 07/17/2018
STAFF: Katherine Koster	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: FY2018 - Targeted Inspection - Pickle Line Scalebreaker Baghouse, Tandem Cold Mill, and HSM		
RESOLVED COMPLAINTS:		

Reason for Inspection: Targeted Inspection

Level of Inspection: PCE

Inspected by: Katie Koster, AQD

Personnel Present: Jim Earl, Environmental Manager; Dave Pate, Environmental Engineer

Facility phone number: 313-323-1261

Facility fax number: 313-337-9395

FACILITY BACKGROUND

AK Steel Dearborn Works (formerly Severstal Dearborn, LLC) is an integrated iron and steel mill which primarily produces flat rolled coils. The facility is operating at 4001 Miller Road, Dearborn. The previous address, 3001 Miller Road, has been assigned to the Ford Motor Company Rouge Plant which is adjacent to the mill. The company was previously operating under the name Severstal Dearborn, LLC until it became AK Steel Dearborn Works in October 2014. Before being purchased by Severstal in 2004, the company was operating as Rouge Steel.

REGULATORY ANALYSIS

AK Steel is currently operating under MI-ROP-A8640-2016a and PTI's 120-16, 8-08A, 84-11, and 182-05C. Of note, although PTI 18-2-05C was incorporated into the ROP, the PTI is the subject of a lawsuit in the Wayne County Circuit Court. As such, this permit was not voided when it was rolled into the ROP. The facility is also operating under Consent Decree Civil Action No. 15-cv-11804 issued on August 13, 2015 and AQD Consent Order 6-2006.

The pickle line is subject to MACT CCC but the scalebreaker baghouse is not an affected source.

PROCESS DESCRIPTION

The processes discussed and/or observed during the inspection are described below. This does not include the entire facility.

At the hot strip mill, slabs from the caster are reheated and rolled into coils. There are three reheat furnaces. No pollution control equipment is installed on this process. HSM slabs are reduced to final thickness by heating and rolling at elevated temps.

The "new" 2.6 million ton capacity Pickle Line/Tandem Cold Mill and 0.5 million ton capacity Hot Dip Galvanizing line commenced operation in August 2011. "Black band" coils arrive from the Hot Strip Mill. Pickling removes metal oxides to provide a smooth clean surface for shipment or subsequent cold milling operations. The process begins with a series of rollers used to straighten the coil and remove the scale. Next, the coils are welded together and enter the scalebreaker, which also removes scale and is controlled by a baghouse. The strip continues to the looper/accumulator that enables the line to continuously operate (i.e. if the line stops for a weld, the excess capacity in the looper will allow the process to continue downstream). The strip then enters the pickle line tanks (there are four steam heated acid tanks, each tank varies in acid concentration, and one rinse tank). The HCl concentration

increases through the line; the last tank receives the freshest acid to ensure the strip is as clean as possible exiting the line. All tanks are covered with fiberglass/reinforced plastic covers and fumes are controlled by a water scrubber which is inside the building. From the pickle line tanks, the strip enters the five rolling stands that comprise the tandem cold mill (each stand sprays a heated mist of oil and water at a different concentrations) and these stands are controlled by an oil mist eliminator. At this time, only one type of oil is used in the rolling mill. The strip is also squeegeed, trimmed, and dried.

INSPECTION NARRATIVE

On July 17, 2018, Regina Hines (TPU) and I arrived on site. Dave Pate accompanied us to the pickle line/tandem cold mill. There were issues with the pickle line welder so the stack test had not started. The welder is used to weld the coils together to create a continuous steel strip for pickling. Mr. Pate explained that they were processing soft stock at the moment but were concerned that the welder would totally break once they transitioned to hard stock (heavier gauge steel) later in the day. We walked the production line as it was still running due to excess steel in the accumulators.

Scale needs to be removed from the strip before pickling. There are two collection points for the scalebreaker baghouse. One prior to the welder and one after the welder. The scale breaking areas are enclosed in a cabinet like structure which exhausts through ductwork to the baghouse as opposed to an open collection hood over the processing area. It is a single compartment pulse jet baghouse. I heard the pulse of compressed air periodically. The pressure drop was 2.2 in w.c. The line pauses for every weld but this is normal operation. It takes about 4 minutes for the coil to make it through the line. The baghouse empties into a supersack inside of the building. I viewed the baghouse. It appeared to be in good condition. I did not observe any visible emissions from the exhaust stack outside of the building.

We spoke with Mr. Jeff LaFave, maintenance manager who confirmed the welder issue. He estimated that it would be fixed by noon. We discussed the process. He stated that all of the steel that is pickled is processed through the tandem cold mill.

We also viewed the tandem cold mill, the oil mist eliminator, and the maintenance shop for the rolls.

RULES/PERMIT CONDITIONS EVALUATED

PTI 120-16: The following conditions apply to: EUSCALEBREAKER

DESCRIPTION: Coil straightener and scale breaker

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Scale breaker baghouse

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Compliance Status
1. PM10 (filterable)	0.005 gr/dscf	Test Protocol*	EUSCALEBREAKER	SC V.1	IN COMPLIANCE. Stack test was performed on July 18, 2018. Based on the reported results, PM10 was 0.005 gr/dscf. Note, the report is undergoing TPU review which may change the compliance status.

*Test Protocol shall specify averaging time.

II. MATERIAL LIMITS: NA**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate the scale breaker process unless the baghouse is installed, maintained, and operated in a satisfactory manner. IN COMPLIANCE. See attached inspection records and daily pressure drop records.
2. The permittee shall not operate EUSCALEBREAKER unless a malfunction abatement plan (MAP) as described in Rule 911(2), for operation of the scalebreaker baghouse is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. IN COMPLIANCE. MAP was received and has been implemented. Daily pressure drop records are maintained and reviewed. See facility file.

IV. DESIGN/EQUIPMENT PARAMETERS: NA**V. TESTING/SAMPLING**

1. At least once every ROP permit term the permittee shall verify PM10 emission rates from EUSCALEBREAKER by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. IN COMPLIANCE. Test was conducted on July 18, 2018. Test results were received on September 4, 2018 which was within 60 days. Prior test was performed in 2012. This is beyond a five year window. Facility believed they did not have to retest until the next ROP term, or once the ROP was renewed, based on the phrase "once every ROP permit term." The ROP was renewed in 2016. AQD disagrees and believes the language was intended to mean once during every 5 year period. Regardless, the language is unclear. AQD will modify this language in the next ROP modification to read "once every 5 years."

VI. MONITORING/RECORDKEEPING

1. Permittee shall periodically inspect the baghouse to determine the operational and physical condition of the baghouse at least once per quarter. The baghouse shall be inspected as necessary immediately after a malfunction or failure of the baghouse or the process equipment to determine the reason for the malfunction or failure. Written records of each inspection and corrective action taken, if any, shall be maintained. IN COMPLIANCE. The baghouse has been inspected at the required frequency. See attached records.
2. The permittee shall perform a non-certified visible emission observation of the baghouse stack at least once a month during processing activity and keep a written record the results of the observation. The permittee shall initiate corrective action upon observation of visible emissions and shall keep a written record of each required observation and corrective action taken. IN COMPLIANCE. See attached records. No visible emissions have been observed.

VII. REPORTING: NA**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter (inches)	Minimum Height Above Ground (feet)	Compliance Status
1. SVCS_SBBH	48	110	IN COMPLIANCE. Stack height not verified at this time. According to the latest stack test report (received September 4, 2018), the port height elevation is 110 feet and the stack diameters is 48 inches.

IX. OTHER REQUIREMENTS: NA

PTI 120-16: The following conditions apply to: EUNTANDMILL

DESCRIPTION: Tandem cold rolling mill

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Oil mist eliminator

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Compliance Status
1. PM10 (filterable)	0.004 gr/dscf	Test Protocol*	EUNTANDMILL	SC V.1	IN COMPLIANCE. Stack test was performed on July 18, 2018. Results indicated PM10 was 0.001 gr/dscf.
2. VOC	0.9 pph	Test Protocol*	EUNTANDMILL	SC VI.3	IN COMPLIANCE. See attached spreadsheet. Based on AQD calculated lb/hr based on monthly usage, the highest lb/hr from January 2017 – July 2018 was 0.59 lb/hr in January 2018. However, AQD is awaiting further information on the use of modified M24 test results and calculation methodology. This may change the compliance status.

*Test Protocol shall specify averaging time.

II. MATERIAL LIMITS: NA

III. PROCESS/OPERATIONAL RESTRICTIONS: NA

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUNTANDMILL unless the mist eliminator is installed, maintained, and operated properly in order to reduce oil mist from the process. IN COMPLIANCE. See attached records. The unit appears to be maintained and operated properly based on a review of the records and the stack test results.

V. TESTING/SAMPLING

1. At least once every ROP permit term verification of the PM10 emission rate from the EUNTANDMILL mist eliminator stack, by testing at owner's expense, in accordance with Department requirements, will be required. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. IN COMPLIANCE. Test was conducted on July 18, 2018. Test results were received on September 4, 2018 which was with 60 days. Prior test was performed in 2012. This is beyond a five year window. Facility believed they did not have to retest until the next ROP term, or once the ROP was renewed, based on the phrase "once every ROP permit term." The ROP was renewed in 2016. AQD disagrees and believes the language was intended to mean once during every 5 year period. Regardless, the language is unclear. AQD will modify this language in the next ROP modification to read "once every 5 years."

VI. MONITORING/RECORDKEEPING

1. The permittee shall keep monthly records of the amount of rolling oil used in the EUNTANDMILL process. IN COMPLIANCE. See attached.
2. The permittee shall keep records of the VOC content for each rolling oil used in the EUNTANDMILL tandem mill rolling process. IN COMPLIANCE. See attached.
3. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month records of VOC emission calculations for EUNTANDMILL based on the amounts of each rolling oil used and VOC content of each oil. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request. IN COMPLIANCE. See attached.

VII. REPORTING: NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter (inches)	Minimum Height Above Ground (feet)	Compliance Status
1. SVNEWTM_ME	114	95	UNKNOWN. Stack height not verified at this time.

IX. OTHER REQUIREMENTS: NA

ROP No. MI-ROP-A8640-2016a. The following conditions apply to FGHSMFURNACES123

DESCRIPTION Three Slab reheat furnaces Nos. 1, 2 and 3 located in the Hot Strip Mill Building.
Emission Units: EUREHEATFURN1, EUREHEATFURN2, EUREHEATFURN3
POLLUTION CONTROL EQUIPMENT NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Compliance Status
1. Visible Emissions	20% Opacity ²	6-minute average	FGHSMFURNACES123	SC VI.3	IN COMPLIANCE. No VE's were observed while on site. Also, no visible emissions have been observed during the required observations in VI.3.
2. PM	10 lb/MMscf ²	Test Protocol*	FGHSMFURNACES123	GC 13 SC VI.3	PENDING. Stack test conducted July 25, 2018. The AQD is awaiting the results. The 60 day window for submitting the report has not yet been exceeded.
3. PM10	10 lb/MMscf ²	Test Protocol*	FGHSMFURNACES123	GC 13 SC VI.3	
4. PM2.5	10 lb/MMscf ²	Test Protocol*	FGHSMFURNACES123	GC 13 SC VI.3	
5. NOx	0.11 lb/MMBtu ²	Test Protocol*	FGHSMFURNACES123	SC V.1	

II. MATERIAL LIMITS: NA

III. PROCESS/OPERATIONAL RESTRICTIONS

- Oil shall not be used as fuel in the FGHSMFURNACES123. IN COMPLIANCE. Natural gas is the only fuel used.
- The permittee shall use and implement the procedures outlined in the Furnace Light Up (ignition) and Furnace Warm Up procedures for the reheat furnaces to ensure proper air and fuel mixing. IN COMPLIANCE. Procedures are attached.

IV. DESIGN/EQUIPMENT PARAMETERS: NA

V. TESTING/SAMPLING

- The permittee shall verify NOx emission rates from a representative reheat furnace from FGHSMFURNACES123 by testing at owner's expense, in accordance with department requirements once every ROP renewal period. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.
 IN COMPLIANCE. Test was conducted on July 18, 2018. Test results were received on September 4, 2018 which was with 60 days. Prior test was performed in 2012. This is beyond a five year window. Facility believed they did not have to retest until the next ROP term, or once the ROP was renewed, based on the phrase "once every ROP permit term." The ROP was renewed in 2016. AQD disagrees and believes the language was intended to mean once during every 5 year period. Regardless, the language is unclear. AQD will modify this language in the next ROP modification to read "once every 5 years."

VI. MONITORING/RECORDKEEPING

1. The permittee shall complete all required calculations/records in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **IN COMPLIANCE.** Calculations are acceptable.
2. The permittee shall monitor and record, in a satisfactory manner, the total natural gas usage for the FGHSMFURNACES123 on a monthly, and 12-month rolling time period basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **IN COMPLIANCE.** See attached.
3. The permittee shall perform a Method 9 certified visible emission observation of the slab reheat furnaces 1, 2 & 3 respective stacks at least once a month during processing activity. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken. **IN COMPLIANCE.** Method 9 observations have met the required frequency.

VII. REPORTING

1,2 and 3. **IN COMPLIANCE.** Reporting has been submitted as required.

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30.
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year.
4. Within 60 days after the end of each ozone control period, the permittee shall submit a summary report to the AQD. The summary report shall contain the following information:
 - a. The date, time, magnitude of emissions, and emission rates where applicable, of the specified emission unit or utility system.
 - b. If emissions or emission rates exceed the emissions or rates allowed for in the ozone control period by the applicable emission limit, the cause, if known, and any corrective action taken.
 - c. The total operating time of the emission unit during the ozone control period.
 - d. For continuous emission monitoring systems, system performance information shall include the date and time of each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments. When the continuous monitoring system has not been inoperative, repaired, or adjusted, the information shall be stated in the report.

IN COMPLIANCE. Report has been submitted on a timely basis.

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Compliance Status
1. SVHSMREHEAT1-S	168 ²	208 ²	IN COMPLIANCE. Based on most recent stack test, diameter is
2. SVHSMREHEAT1-N	168 ²	208 ²	

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Compliance Status
3. SVHSMREHEAT2-S	168 ²	208 ²	listed as 168 inches. Stack height is listed as 265 ft.
4. SVHSMREHEAT2-N,	168 ²	208 ²	
5. SVHSMREHEAT3-S	168 ²	208 ²	
6. SVHSMREHEAT3-N	168 ²	208 ²	

IX. OTHER REQUIREMENTS: NA

Exempt Equipment – Classic Cold Mill Temper Mill

IN COMPLIANCE

During the prior inspection in 2017, the batch annealing furnaces were inspection. There is a temper mill associated with this process whereby a rust preventative oil is applied by spray along three points in the process. The compliance status for the temper mill was listed as PENDING awaiting further investigation.

Facility submitted documentation (attached) that the temper mill and oiling process is exempt per Rule 285(2)(r)(i)

COMPLIANCE DETERMINATION

At this time, based on conditions evaluated in this report, the facility appears to be in compliance.

FOLLOW UP

- Stack heights
- 12 month rolling totals
- Modified M24 VOC results and calculations of an hourly average

NAME *Kate Kopic*

DATE *9/26/18*

SUPERVISOR *w.m.*