

M4768  
MANILA

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

M476835377

FACILITY: FLAT ROCK METAL INC		SRN / ID: M4768
LOCATION: 26601 W HURON RIVER DR, FLAT ROCK		DISTRICT: Detroit
CITY: FLAT ROCK		COUNTY: WAYNE
CONTACT: Gregory Zang , Operations Manager		ACTIVITY DATE: 06/16/2016
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: PM, VOC, HAP, and record keeping		
RESOLVED COMPLAINTS:		

Inspector: Terseer Hemben, DEQ-AQD  
 Personnel Present: Mr. Greg Zang, Vice President, Operations  
 Company: Flat Rock Metal  
 Address: 26601 W. Huron River Drive, Flat Rock, MI 48134-1090  
 SRN: M4768  
 Date of Inspection: June 16, 2016  
 Facility Phone Number: 734-782-4454; FAX: 734-782-5844

### INSPECTION REPORT

#### FACILITY BACKGROUND:

The Flat Rock Metal Inc. (FRM) is housed in a facility that was formerly built by Henry Ford in 1921. The plant is located on the south bank of Huron River. The FRM Company is currently supported by fewer employees than in previous years. The facility operates 2 shifts per day, 5 days a week. The main manufacturing product coming out of the plant include polished and pressed steel sheets for the Michigan's Big Three automotive makers (Ford, GM and Chrysler). The facility occupies 36.4 acres of land. The FRM plant occupies 238,000 square footage of land. A wet type of Scrubber located in the building controls emissions in the building by collecting air and fumes via large diameter-hood fans for cleaning. Two boilers are used at the site. One boiler was installed in 1954 and the other in 1966. The boilers use Natural gas for heating. The premises were paved for control of fugitive dust, except at the new entrance leading into the site from the west.

The Steel sheet production process is covered by permit number 71-98 and operates as a Synthetic Opt out. This permit covers both dry and wet grinding processes. Other processes include chemical coating and curing of steel sheeting used in automotive industry. These processes are covered under General Permit # 59-09. Associated equipment for these processes include the Wide Coil Blanking (Metal cutter) line, two Rough Lines, three Finish lines, three Curing ovens, four wet dust collectors, and two gas-fired Boilers. The facility added 5 new operating lines. The lines are: (a) Automated angle shear (60 degree angle capability) - exempt under Rule 285(l)(vi)(B), (b) Protective film sheet applicator - exempt under Rule 281(e), (c) Sheet polishing (ferrous and Non-Ferrous) - exempt under Rule 281 (e), (d) Sheet coating paint line - exempt under Rule 281(e), and (e) Waterborne blank coating line - exempt under Rule 281(e).

#### INSPECTION NARRATIVE

I arrived at the Flat Rock Metal (FRM) facility on June 16, 2016, at 1245 hours. The purpose of the visit was to conduct an annual scheduled compliance inspection. Temperature at the hour was 76 F, and wind speed 5.8 mph coming from NNW. Mr. Greg Zang admitted me onto the site. We held a pre-inspection conference in the conference room. Mr. Zang informed the facility reduced use of materials causing VOC emissions. The VOC line was discontinued and dismantled. Rudiments of VOC emissions exist at the facility, however the processes causing VOC emissions were exempt under rules 290. Details of the exempt 290 are listed under discussions.

#### COMPLAINT/COMPLIANCE HISTORY:

None

#### OUTSTANDING LOV'S:

None

#### PROCESS DESCRIPTION:

The metal process carried out at the Flat Rock facility consists of dry and wet grinding, chemical

and curing of steel sheeting used in the automotive industry. The process utilizes three types of equipment: the rough lines, finishing lines, and boilers. The sheet metal is brought into the facility as a roll from the steel mill or other sources. The cut-to-length (CTL) line unrolls and cuts the sheet metal to specified lengths. The CTL is sheer-cutting only with no grinding involved. The process generates minimum particulate matter.

Rough lines comprise two identical dry grinding lines. The finishing lines comprise three phosphate coating stations, and three curing ovens. Steam generation system is powered by two natural gas-fired boilers. There are two rough lines designated #1, & #2. The lines are used for grinding only. Metal sheet from CTL line are steam-cleaned with alkaline prior to grinding. Sheets are sent through a dry grinding operation consisting of ten belt grinders in series. Generally, only eight belts operate at any given time. Particulate matter (Swarf) is controlled via five dust collectors or scrubbers. During this inspection only 7 heads were operating. The finish lines are designated as #1, #2, & #3. Mill sheets from rough lines are sent through a wet polishing/grinding operation consisting of six belt grinders in series.

#### **EQUIPMENT AND PROCESS CONTROLS:**

There is no directly applied process control equipment for these boilers. However, there is a scrubber, which controls the emissions generated by the boilers within the facility building.

#### **OPERATING SCHEDULE/PRODUCTION RATE:**

The FRM processing facility currently operates 24 hours per day, and 5 days per week, except when facility operation shuts down for maintenance.

**APPLICABLE RULES/OPT OUT PERMIT # 71-98 & Gen permit #59-09 CONDITIONS:** The following conditions were used to evaluate compliance at the FRM facility-based on the rules- NSPS 40 CFR 60, 40 CFR 52.21(c) & (d)  
State Rule: R 201, R 205, R 224, R 225, R 226, R 301, R 331, R 901,

1. In compliance- FRM stated there was a downsize modification to the system or process at the facility in 2013. The VOC line operated under the General Permit# 59-09 had been dismantled and the track was converted into a finishing line. Staff confirmed the equipment was dismantled and a Finishing line became a replacement.
2. In compliance- FRM demonstrated the PM emissions from the FGRoughlines did not exceed the 172.8 lbs./day limit calculated at the end of each day. Records submitted by the FRM covering the last 12 months stated the Roughline#1 emitted 46.70 lbs. PM per day, and the Roughline#2 emitted 32.10 lbs. PM per day. [SC 1.1a)] [Attachment A, item# 2]
3. In compliance - FRM demonstrated the PM emissions from FGRoughlines did not exceed 0.025 lbs. of PM/1000lbs of exhaust gas [R336.1205; SC 1.1b]. Record submitted by FRM covering the last 12 months listed that PM emissions from the Roughline#1 was 0.023 lbs./1000 lbs. of exhaust gas; and the Roughline #2 emitted 0.023 lbs./1000 lbs. of exhaust gas.
4. In compliance - FRM demonstrated the amount of Manganese emissions from FGRoughlines did not exceed 0.691 lbs./day as determined at the end of each day [R336.1224; SC 1.1c]. Daily records submitted by FRM listed that for the last 12 months, the Roughline #1 emitted 0.229 lbs. Manganese per day, and Roughline# 2 emitted 0.157 lbs. Manganese per day [Attachment# A, item# 4; Roughline# 1 and Roughline# 2].
5. In compliance – Staff verified that visible emissions from FGRoughlines did not exceed a 6-minute average of 5% opacity (R336.1301)(c)); [SC 1.2]. There were 0% opacity emissions coming from the facility at the time of inspection.
6. In compliance – FRM demonstrated the maximum quantity of metal sheets processed in FGRoughlines per calendar day did not exceed 23,400 nor 8,541,000 metal sheets processed per 12-month rolling time period as determined at the end of each calendar month. A written record of the amount of metal processed was kept on file for a period of five years and made available to the Air Quality Division upon request [R336.1225; SC 1.3]. Records submitted by FRM listed the Roughline# 1 processed 9372 sheets per day, and Roughline# 2 processed 8319 sheets per day. Outputs from the two lines totaled 17891 sheets per day. Similarly, the Roughline# 1 processed

1,544,030 sheets per 12-month rolling time period, and Roughline# 2 processed 3,562,832 sheets per 12-month rolling time period. Total output per 12-month rolling time period was 5,106,862 sheets. The numbers of sheets processed were below the set limits [Attachment# A, item# 7, Roughline#1 and Roughline#2].

7. In compliance – FRM demonstrated the permittee did not operate FG Roughlines unless the Wet Dust collectors were installed, maintained, and operated in a satisfactory manner. (R 336.224); [SC 1.4]. Records of maintenance indicating the wet dust collector was installed and operated in satisfactory manner indicating compliance was submitted by FRM. A list of routine maintenance schedule for the dust collectors is attached. The equipment was operated in accordance with permit conditions [Attachment# 1].
8. In compliance – FRM demonstrated permittee did not operate FG Roughlines unless the gauge which measures pressure drop (dP) across the Wet Dust collectors and sounds an alarm when the water pressure exceeds 15 psig or drops below 10 psig, was installed, maintained and operated in a satisfactory manner. (R336.1225, SC 1.5). Records of gage set for dust collector operation, dP monitoring, and gage maintenance for the last 12 months indicating compliance is attached [Attachment#1].
9. In compliance –FRM demonstrated the operating grinding heads in each of the grinding machines of FG Roughlines, at any time during the process operation, did not exceed a maximum of eight (8) operational grinding heads per machine. (R336.1225 [SC 1.6]. Records submitted by FRM covering the last 12 months listed heads in belt codes relating number of heads. At the time of this inspection, 7 grinding heads were in use. The facility operated in compliance [Attachment# 2].
10. In compliance – FRM demonstrated permittee maintained a current listing from the manufacturer of chemical composition of metal sheets processed in FG Roughlines, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's data or both. All records were kept on file for a period of at least five years and made available to the Department upon request (R336.1225) [SC 1.7]. Records received from FRM as corresponding MSDS for the metal sheets processed for the last 12 months showed compliance. Review of SDS informed no HAPs were found as composition element of the materials processed (except for the test reagents under exempt Rule 283(b) [Attachment #3].
11. In compliance- FRM demonstrated the permittee kept the following information on daily and monthly basis for FG Roughlines:
  - A) In compliance -Number of sheets processed per hour, calendar day and calendar month were kept and maintained. Records covering the last 12 months indicated compliance [SC. 1.8a] [Attachment Roughline#1, Roughline# 2]
  - B) In compliance - PM mass emission calculations determining the daily and monthly emission rate in pounds, and tons per 24 hour calendar day and per calendar month, respectively, based on stack testing data or the manufacturer's emission factors were kept and maintained. Records of calculations covering the last 12 months were listed [SC. 1.8b] [Roughline# 1, Roughline# 2].
  - C) In compliance - PM mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month were kept and maintained. Records of calculations covering the last 12 months indicated compliance [SC. 1.8c].
  - D) In compliance - Hours of operation were kept and maintained [R 336.1224, R 336.1225; SC 1.8d]. Records of hours of operation covering the last 12 months indicating compliance are listed under Roughline#1 and Roughline#2.
12. In compliance- FRM demonstrated the permittee kept following information on a daily calendar day basis for FG Roughlines. [SC. 1.9a]. Records covering the last 12 months are listed under Roughline#1 and Roughline#2, and the records indicate compliance.

- A) In compliance – FMR listed number of sheets processed per 24 hour-calendar day and per calendar month in the FGRoughlines [SC. 1.9b]. Records covering the last 12 months are listed under Roughline# 1 and Roughline# 2.
- B) In compliance – FRM listed manganese content in pounds per pound of sheet metal processed [SC. 1.9b]. Records covering the last 12 months are listed under Roughline# 1 and Roughline# 2].
- C) In compliance –FRM listed Manganese mass emission calculations determining the 24-hour calendar day emission rate in pounds per calendar day [SC. 1.9c]. Records covering the last 12 months are listed under Roughline# 1 and Roughline# 2.
- D) In compliance – FRM listed Manganese mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. (R 336.1224, R 336.1225). [SC 1.9d]. Records of calculations covering the last 12 months are listed under Roughline# 1 and Roughline# 2.
13. In compliance – Staff verified all exhaust gases from FGRoughlines were discharged vertically through the stacks to the ambient air. We walked through the plant and looked at the P & ID information [40 CFR 52.21 (c ) & (d) – using stack ID that informed the design dimensions were intact:  
SV-S1: 11inches in diameter and 30 feet height above ground level.  
SV-S2: 36 inches in diameter and 35 feet height above ground level.  
SV-S3: 24 inches in diameter and 25 feet height above ground level.  
SV-S4: 11 inches in diameter and 25 feet height above ground level.
14. In compliance – FRM stated the emission of individual HAP from the FGFacility was less than 9.0 tpy based on 12-month rolling time period as determined at the end of each calendar month. (R 336.1205(3)). [SC 2.1a]. HAPS such as Ammonium Vanadate, Ammonium Molybdate reagent and HCL were found in the SDS data [Attachment# 3]. The HAPs containing compounds were used in the Laboratory quality test reagents, and were exempt under Rule 283(b). The line that used coatings with HAP was dismantled in 2013 [Attachment# A, item# 15].
15. In compliance - There were no materials containing HAPs processed at the FRM facility. The response was same as in item # 14.
16. In compliance - There were no materials containing HAPs processed at the FRM facility. Response was same as in # 14.
17. In compliance- FRM demonstrated permittee maintained a current listing of the chemical composition of each process material, including the weight percent of each component supplied by manufacturers. The data may compose of MSDS, Manufacturer's formulation data or both. All records were kept on file for a period of at least five years and made available to the Department upon request (R336.1205 (3)). [SC. 2.3]. The SDS submitted by FRM covering the last 12 months process indicated compliance with this requirement [Attachment# 3].
18. In compliance- FRM demonstrated permittee kept the following records on a monthly basis for the FGFacility: The SDS provided records of chemicals used on monthly basis. The records showed presence of HAPs .

#### Discussion:

Rule 201(1) – At the time of this inspection, the facility operated 2 Rough lines under Permit# 71-98. 3 Finishing lines involved grinding and phosphating processes. A wet scrubber and dust collectors removed and disposed particulate matter and wastes as byproducts to contractors. Heavier particulates were discharged inside the manufacturing area. The process is exempt under Rule 285(vi)(C).

The Gen Permit# 59-09 regulating coating line operations at the FRM facility were discontinued and dismantled. in 2013, therefore the permit is no longer required and is void.

