

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

B600145865

FACILITY: Herman Miller, Inc		SRN / ID: B6001
LOCATION: 855 E. Main Ave., ZEELAND		DISTRICT: Grand Rapids
CITY: ZEELAND		COUNTY: OTTAWA
CONTACT: Fred Gordon , Environmental Manager		ACTIVITY DATE: 08/14/2018
STAFF: April Lazzaro	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro arrived at the facility to conduct an unannounced, scheduled inspection. External facility observations did not identify the presence of odors or opacity. I met with Fred Gordon Senior Environmental Specialist and discussed the intent to conduct a routine Full Compliance Evaluation of the facility as part of the Environmental Protection Agency's Compliance Monitoring Strategy.

FACILITY DESCRIPTION

Herman Miller, Inc. is a wood furniture manufacturing operation. The facility operates under ROP No: MI-ROP B6001-2014a, which is divided into two separate sections. Section 1 is for Wood Furniture Manufacturing and Section 2 covers the Energy Center. The manufacturing operation is composed of wood finishing lines, adhesive application stations, woodworking equipment and maintenance parts washers. The wood finishing lines are made up of various coating booths and ovens and are subject to National Emission Standard for Hazardous Air Pollutants (NESHAP) for Wood Furniture Manufacturing promulgated in 40 CFR, Part 63, Subparts A and JJ. The coating operations includes an ultraviolet finish line and the Rhodes Line3, which are used to apply stains, topcoats and sealers. The woodworking equipment consists of carving, cutting, routing, turning, drilling, sawing, sanding, planing, and buffing wood components. Exhaust from the woodworking machinery is directed to one of eight dust collection systems. Depending upon weather conditions, the exhaust from the dust collectors can either be internally or externally vented. Section 2 of the ROP contains Boiler No. 3162, facility-wide emergency/back-up generators and a maintenance parts washer. A 2013 Permit to Install (PTI) application allowed for new combustion controls, a new auger feed system and replacement of the Heat Recovery Steam Generator (HRSG). The PTI also included Opt-out conditions for Hazardous Air Pollutants (HAP). These changes were incorporated into the ROP on April 10, 2015. Boiler No. 3162 is not operable and the company is working to identify future plans for the unit.

Currently the AQD Permit Section is working with the company in an attempt to come to an agreement on permit conditions that will provide legally enforceable conditions on the Potential to Emit for several pollutants. The discussions are ongoing.

COMPLIANCE EVALUATION

Section 1- Wood Furniture Manufacturing

SOURCE-WIDE CONDITIONS

The source-wide conditions provide Opt-out limitations for Hazardous Air Pollutants (HAPs). Aggregate HAPs are limited to 22.5 tons per 12-month rolling time period for and individual HAPs are limited to 9.0 tons per 12-month rolling time period. Reported aggregate HAPs are 0.10 tons through June 2018. The company is not properly reporting individual HAP. During the previous Full Compliance Evaluation in 2016, AQD staff noted in the report that "The records need to be updated to include each individual coating HAP, even though they are less than 20 pounds each." To date, Herman Miller, Inc. has not done this. A request for Certified Product Data Sheets (CPDS) for coatings was requested. These coatings contain amounts of HAP including (but not limited to) ethylbenzene, triethylamine, xylene, methanol, ethyl acrylate and C.I. acid yellow 220. These HAP are not in the recordkeeping provided to AQD, and the recordkeeping states, "VHAP is a surrogate for largest individual HAP as well as a total collective HAPs from Wood finishing." The only individual HAPs being reported in the spreadsheet are hydrochloric acid and lead.

As a result of not updating the HAPs records to include individual HAP from the wood finishing as required, this is considered a violation of MI-ROP-B6001-2014a Section 1 Source-wide Condition VI.1. A Violation Notice will be sent.

Further review of the 12-month rolling average calculations in the excel spreadsheet indicates that they are being done incorrectly. It appears that Herman Miller, Inc. is reporting the "average" emissions for each 12-month rolling time period. This is not how a 12-month rolling average is computed. Instead of reporting the average emissions, it need to be the sum of the previous 12-months; calculated each month. So, for example Herman Miller, Inc. has reported that the tons of vHAP has been 0.01 tons each for the past two years. Specifically, reported average emissions for the time period of July 2017 through July 2018 are 0.121 tons. Calculated correctly, the actual 12-month rolling emissions for that same period is 0.146 tons. Due to the fact that reported emissions are currently low, this doesn't make a large difference in reported emissions. However, it is not the correct way to calculate the emissions and the records must be amended.

FGGENERALPERMIT

Herman Miller, Inc. has a General Permit to Install (PTI) for the coating lines at the facility. The coating lines covered by the General PTI have been grouped into this Flexible Group (FG). Each line is allowed 10 tons VOC per year based on a 12-month rolling time period. The facility is currently only operating the Rhodes 3 and the UV line and records were provided. The reported EURHODESLINE3 12-month rolling emissions through June 2018 are 1.16 tons. The reported EUFINLINE1 12-month rolling emissions through June 2018 are 2.6 tons. The permit also limits VOC emissions from all coating lines combined to less than 30 tons per year based on a 12-month rolling time period. The reported combined 12-month rolling emissions through June 2018 are 3.77 tons. The facility is maintaining records sufficient to demonstrate compliance with the VOC limitations and requirements of FGGENERALPERMIT. However, the recordkeeping for these booths is not being done correctly. The spreadsheet is reporting average emissions for a 12-month period. It should be reporting the sum emissions for a 12-month period. Herman Miller, Inc. should correct this deficiency. A visual observation of the coating lines was conducted. Staff confirmed that the facility continues to utilize water to flush the paint lines for cleaning.

FGNESHAPJJ1

This FG consists of all equipment at the source that are subject to 40 CFR Part 60 Subpart JJ. This includes each coating line present at the facility. Staff requested recordkeeping to demonstrate compliance with the NESHAP, and it should be identified that the VHAP as applied for the facility is 0.00 lb per lb/solids as applied. Staff requested various coating formulation data sheets to verify this (see attached). The data presented in the data sheets confirms the reported emissions. The facility is maintaining the work practice implementation plan which was discussed. It should be noted that the facility uses the averaging approach for finishing operations as allowed in 40 CFR 63.806(c). Records are attached. The US EPA "Once in Always in" Policy has been rescinded. While the ultimate fate of this policy is unknown, Herman Miller, Inc. plans to request additional criteria pollutant opt-out conditions so it can eliminate the current Renewable Operating Permit and proceed as a synthetic minor source with the goal of not being subject to NESHAP Subpart JJ.

FGDUSTCOLLECTORS

This FG consists of 6 of the facility baghouses that control the woodworking operations. The individual emission limits as they apply are identified in the table and compliance is determined via monitoring and maintenance. During the inspection, this collection of baghouses was observed. The facility currently maintains a Preventative Maintenance Plan (PMP) and Malfunction Abatement Plan (MAP) for these units. Pressure drop for the baghouses were obtained during the inspection and were as follows: baghouse NW-4 was 2.92" H₂O, NE-6 was 4.2" H₂O, SW-3 was 2.85" H₂O, SE-2 was 1.10" H₂O, EG-8 was 2.6" H₂O and Bldg F- 7 was 1.55" H₂O. These baghouses are also subject to Compliance Assurance Monitoring (CAM) as demonstrated in a following FG.

FGMISC331

This FG consists of two baghouses in Building G. Following the inspection per my request the PM/MAP has been updated to include the new baghouse. Bldg G-1 was 1.75" H₂O and Bldg G-2 was 0.76" H₂O.

We discussed the low pressure drop of the newest baghouse and how it is typical of a new unit to be low. We also talked about considering adding a provision into the MAP to account for that.

Recordkeeping requirements for FGMISC331 are included in VI.1 which states, "The permittee shall maintain a record of the hours of operation for each emission unit control device while exhausting to the outdoor air". The company currently does not keep track of this information, and instead assumes that the air is vented externally 100% of the time. This is not correct or accurate, and Herman Miller, Inc. should begin to monitor actual hours exhausted to the outdoor air as required.

FGDUSTCOLLECTORS-CAM

This FG currently covers seven dust collector emission units that are subject to Compliance Assurance Monitoring (CAM). The CAM plan prescribes that each dust collector utilize a broken bag detector system to monitor stack emissions. The broken bag detector systems were operational at each EU observed at the time of the inspection. Based on observations on-site and discussions with Mr. Gordon the CAM plan appears to be implemented properly. I requested any non-certified visible emission checks conducted when a collector is discharging to the outside air and a broken bag alarm is activated. The new baghouse should be added to the CAM plan if subject.

FGRULE287(C)

This FG covers any EU currently exempt pursuant to Rule 287(c) which currently covers one manual application spray booth, which is not in use. It appears to be identified in the MAERS database as required, EUOLS, then appropriately marked as a zero use booth. This booth is not considered part of the powder coat line.

FGCOLDCLEANERS1

This FG covers any cold cleaner present and exempt pursuant to Rule 285(r)(iv). One was observed in the maintenance area, with the lid down and instructions posted as required.

Section 2- Energy Center

SOURCE-WIDE CONDITIONS

The source-wide conditions provide Opt-out limitations for Hazardous Air Pollutants (HAPs). Aggregate HAPs are limited to 22.5 tons per 12-month rolling time period for and individual HAPs are limited to 9.0 tons per 12-month rolling time period. Reported aggregate HAPs are 0.10 tons through June 2018. The company is not properly reporting individual HAP as identified in Section 1.

EUBOILER3162

The Permit to Install (PTI) for this biomass boiler was modified in 2015, to include changes to the unit including a new fuel feeding system, lower hearth combustion controls, a and a new Heat Recovery Steam Generator (HRSG). A new chipper was installed at the time of the project, to prepare the wood fuel to the needed size. Since that time, the unit has not operated well, and due to very high burn temperatures the grates have been replaced several times. Due to the problems with the high burn temperatures, the unit has not operated for any length of time needed to schedule the required testing. The boiler has not operated since June 2016 and the facility has been reporting the failure to test as a deviation which is appropriate.

Overall, the permit for the boiler is insufficient in several ways and the submittal of a permit modification is suggested if the unit is operated in the future. The permit contains emission limits for NOx, PM 2.5 and HCl. The permit requires testing for each to determine compliance on a pound per hour and ton per year basis. However, the permit has no emissions recordkeeping requirements. Without a recordkeeping requirement, the permit ton per year emission limits are not legally enforceable. This may be addressed during the facility Opt-out permitting process with limits on these pollutants on a source-wide basis.

The permit has a material limit that limits any fuel other than wood waste shall comprise less than 25% of the total fuel heat input. Utilizing the word "waste" in the description of the fuel should be changed. The word biofuel is the term to be used, as the word waste has implications that the unit could be

subject to the Commercial and Industrial Solid Waste Incineration (CISWI) New Source Performance Standard. It appears as though the unit is subject to the Boiler Maximum Achievable Control Technology (MACT) for area sources that burn biofuel. Any changes to this language or terminology must be done through New Source Review permitting.

Finally, the Underlying Applicable Requirements (UAR) detailed in the permit are either incorrect or lacking. For example, the UAR used for the material limit is Rule 331 Table 31(A)(6). Rule 331 is for particulate limit, and specifically the table applies an emission limit for PM of 0.50 lbs. particulate/1,000 lbs gas. Therefore, this UAR is incorrectly applied. The UAR for the process/operational restriction which specifies that the permittee shall not substitute any fuels is Rule 910. Rule 910 applies to proper operation of an air-cleaning device- not the use of fuels. Additionally, some special conditions list a UAR of both Rule 201(3) and Rule 213(3). If the UAR comes from a PTI, Rule 213(3) is not needed.

If the unit becomes operational, the Preventative Maintenance Plan and Malfunction Abatement Procedures for the new boiler configuration should be updated.

Per this report, the AQD requests that Herman Miller, Inc. keep AQD staff updated on the status of the boiler, and when a final operating scenario has been determined. That way, there will be no confusion as to when the emissions testing should be conducted.

FGBOILER3-CAM

This FG covers one EU, EUBOILER3162, that is subject to CAM. Generally a flexible group is used when the same requirements apply to more than one emission unit. Additionally, the FG name should be updated to reflect the EU name. If the facility renews the ROP, the CAM requirements can be added to the boiler emission unit table. Further input can be obtained from Dennis Dunlap, AQD CAM specialist if needed.

FGDIESELFIRE

This FG covers the four diesel fuel fired emergency/back-up equipment at the facility. These units are housed at various locations around the stationary source, and not at the building that houses the boilers. The diesel fuel is limited to less than 0.28 pounds sulfur dioxide per million Btu of heat input. Low sulfur diesel fuel is used at the facility. Records of maintenance are attached.

FGEMERGENCYRICE

This FG covers all emergency generators at the facility, both diesel fuel fired and natural gas fired. The facility is conducting the proper maintenance on the equipment, and all are equipped with non-resettable hour meters. Records of maintenance are attached.

FGCOLDCLEANERS2

This FG covers any cold cleaner present and exempt pursuant to Rule 285(r)(iv) located at the boiler house.

MISCELLANEOUS

The permittee also operates two 25.1 mmBtu/hr natural gas fired boilers installed in 1977 and 1979, and re-permitted with a physical move and stack height increase in 1981. Originally, they were permitted to burn both fuel oil and natural gas, but Herman Miller, Inc. staff has stated that the boilers do not have the capability to burn fuel oil and the piping required to bring oil to the boilers has been removed. Due to this they do not appear to have any process specific emission limitation or standard. Due to the increased use recently of the boilers since the wood fired unit has been down, Herman Miller, Inc. has added them to the Michigan Air Emissions Reporting System (MAERS) submittal.

Mr. Gordon stated that the powder coat line will be removed from the facility this year.

COMPLIANCE SUMMARY

Recordkeeping collected and reviewed as part of this Full Compliance Evaluation is attached via paper and CD.

Herman Miller, Inc. is in non-compliance at this time.

NAME Paul Lippard

DATE 9-4-18

SUPERVISOR [Signature]