

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

B600136666

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: 08/11/2016
STAFF: April Lazzaro	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro and Adam Shaffer arrived at the facility to conduct an unannounced, scheduled inspection. External facility observations did not identify the presence of odors or opacity. We met with Fred Gordon Senior Environmental Specialist and provided him with the DEQ Environmental Inspections: Rights and Responsibilities brochure and discussed its contents.

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 seven 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.

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 2016. The highest reported individual HAP is HCl at 0.00 tons (20 lbs) through June 2016. The records need to be updated to include each individual coating HAP, even though they are less than 20 pounds each.

FGGENERALPERMIT

Herman Miller has a General Permit to Install (PTI) for the coating lines at the facility. I pointed out to Mr. Gordon during the inspection that the applicability criteria document for the General PTI excludes any coating line subject to a NESHAP. Herman Miller is subject to 40 CFR Part 60 Subpart JJ as indicated above, however still apparently were issued the General PTI. The AQD cannot revoke this General PTI, and therefore compliance with the special conditions currently established will be evaluated. 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 July 2016 are 1.16 tons. The reported EUFINLINE1 12-month rolling emissions through July 2016 are 4.4 tons. The facility is maintaining records sufficient to demonstrate compliance with the VOC limitations and requirements of FGGENERALPERMIT. A visual observation of the coating lines was conducted. A minor adjustment to the booth filters was suggested based on the

filter placement at the time of the inspection. Staff confirmed that the facility utilizes 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), but does not average in the use of the powder coat at this time. Records are attached.

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. A small amount of particulate was identified to be airborne in the vicinity of the units, however the origin of what was likely a bad seal somewhere was not found. It was advised that the facility conduct a thorough inspection. This was a minute amount, and at the time is not considered a violation. The facility currently maintains a Preventative Maintenance Plan (PMP) and Malfunction Abatement Plan (MAP) for these units. This plan is insufficient at this time and should be updated for several reasons. The plan needs to identify the name of the EU, not just the facility asset ID number. The CFM size of the baghouses listed in the plan do not match the file/permitted CFM per AQD records. Additionally, the facility has identified that the normal operating range of the units are in the 2-3" H₂O pressure differential. This is a very small range, and does not allow for a larger, but normal pressure drop variations. Baghouse NW-4 was 2.36" H₂O, NE-6 was 3.29" H₂O, SW-3 was 2.26" H₂O, SE-2 was 1.80" H₂O, EG-8 was 2.10" H₂O. These baghouses are also subject to Compliance Assurance Monitoring (CAM) as demonstrated in a following FG. Due to the fact that the baghouses are equipped with broken bag detector systems that appeared to be working properly the out-of-range readings will not be cited as violations. However, it is recommended that the PMP be updated and resubmitted by November 1, 2016.

FGMISC331

This FG consists of two baghouses; one in Building F and one in Building G. A review of the language in the ROP has identified a critical typographical error. The ROP lists a limit of 0.01 pound per 1,000 pounds of exhaust gases for each individual process calculated on a dry gas basis. This lists an underlying applicable requirement of Rule 336.1331(1)(a), Table 31(j). However, the correct emission limit listed in Table 31(j) is actually 0.10 pound per 1,000 pounds of exhaust gases calculated on a dry gas basis. EUDUSTCOLLECTOR7 is listed as a 60,000 cfm dust collection system. Utilizing the 0.10 lb/1,000 lb gas, this is a potential to emit of 118 tons particulate matter. Due to the fact that this facility already has a Title V permit, it is not a compliance issue. However, this facility is considered a Category 1 major source of PM at this time. Should the facility wish to restrict PTE, an Opt-out PTI application should be submitted. It appears as though some time in the past AQD staff allowed the existing PTI No. 358-94 for this baghouse to be voided. The PM/MAP also addresses the differential pressure in these baghouses as well. Bldg F-7 was 1.94" H₂O and Bldg G-5 was 3.51" H₂O. As previously identified, the PM/MAP needs to be updated, as the current range of differential pressure in the plan is 2-3".

FGDUSTCOLLECTORS-CAM

This FG 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.

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.

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 2016. The highest reported individual HAP is HCl at 0.00 tons (20 lbs) through June 2016. The records need to be updated to include each individual coating HAP, even though they are less than 20 pounds each.

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 facility has been reporting the failure to test as a deviation which is appropriate. The boiler company they have been working with on the physical changes to the boiler is going to refer them to a different boiler engineering company to try and get the unit back up and running. Herman Miller relied on this boiler to provide steam and supplemental electricity to the plant. Additionally, the wood scrap produced is now sent to a landfill instead being used as a fuel, something the facility does not want.

Overall, the permit for the boiler is insufficient in several ways and the submittal of a permit modification is highly suggested. The permit contains emission limits for NO_x, 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.

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.

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.

Once 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 keep AQD staff updated on the status of the boiler, and when trial firings are being conducted. That way, there will be no confusion as to when the emissions testing should be conducted.

While AQD does not have delegated authority over this facility for the Boiler MACT, some of the requirements were discussed and the facility states the proper information is being kept.

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. Going forward in the next ROP issuance, the CAM requirements can be added to the boiler emission unit table. Further input can be obtained from Dennis Dunlap, AQD CAM specialist.

As part of the FCE, the Semi-Annual Report Certification and CAM Reports were reviewed. In this report, the facility identified that on two occasions, the broken bag detector had downtime. One of the times, the detector was out of calibration. The other time the detector went down, and the cause was identified as a "dirty probe". When the monitor alarm is activated and downtime occurs, the company is required to take non-certified visible emissions checks if the process is operating. It was not clear by the records provided if the visible emissions check occurred during the monitor downtime. Mr. Gordon indicated that his staff did not take visible emissions readings during downtime. I explained that when I see a probe have downtime, and the reason is that it is dirty, it is likely because excess emissions caused it to be dirty. Now, since there are no readings of that actual moment, it is unknown. The way the permit is currently written, it is somewhat unclear as to what defines an excursion, what defines an exceedance and what is required when they happen. This should be updated during the next permit renewal or modification. Mr. Gordon indicated he will re-train staff pursuant to this new information. I specified that the same principle applies to the woodworking baghouses subject to CAM as well.

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.

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.

FGCOLDCLEANERS2

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

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 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 should determine if fee-subject emissions are within 10% of significance levels for emissions reporting cycle 2016. If so, they should be added to the Michigan Air Emissions Reporting System (MAERS).

At various times during the inspection, our group met with and included several other staff from Herman Miller, Inc., including; Tom Egler, Tom Allen, Gabe Wing, Randy VanEck and Mark DesRochers.

COMPLIANCE SUMMARY

While AQD staff made several recommendations for changes, none affect the compliance status. Recordkeeping collected and reviewed as part of this Full Compliance Evaluation is attached via paper and CD.

The facility is in compliance at this time.

NAME Ann Lyppard

DATE 9-20-16

SUPERVISOR [Signature]