

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection**

A593766000

FACILITY: Howard Miller Company		SRN / ID: A5937
LOCATION: 860 E Main St, ZEELAND		DISTRICT: Grand Rapids
CITY: ZEELAND		COUNTY: OTTAWA
CONTACT: Jerry Winters , Engineering Manager		ACTIVITY DATE: 01/06/2023
STAFF: Chris Robinson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY'23 inspection to determine the facility's compliance status with applicable air quality rules and regulations including Renewable Operating Permit ROP-MI-A5937-2020.		
RESOLVED COMPLAINTS:		

A) INTRODUCTION

Howard Miller Company (SRN A5937), located at 860 East Main Street in Zeeland, Michigan was inspected on January 6, 2023, by Michigan's Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) staff Chris Robinson (CR). The purpose of this inspection was to determine Howard Millers compliance status with respect to applicable air quality rules and regulations including Renewable Operating Permit (ROP) MI-ROP-A5937-2020.

CR met with Jerry Winters, Howard Miller's Engineering Manager. The ROP and current status/issues were discussed during the walkthrough of the facility. Records were reviewed onsite, and examples were provided during the inspection. Mr. Winters indicated that there have been no equipment modifications or additions since the last inspection, conducted in November of 2020 nor has there been any issues or major changes.

During this inspection weather conditions were cloudy, approximately 36°F with north-northwest winds at 6mph (www.weatherunderground.com). No visible emissions or significant odors were observed at any time.

B) FACILITY DESCRIPTION

Howard Miller is a wood furniture manufacturer in Zeeland, Ottawa County, Michigan located near both residential and industrial areas. The processes located at this facility consist of several wood finishing lines, several adhesive stations, woodworking equipment, a wood fired boiler, maintenance parts washer and a urethane foam molding packaging line. The wood finishing lines are made up of coating booths 1 through 15. Coatings applied in the operations are stains, wash coats and sealers, fillers, glazes, and lacquers. Exhaust from coating booths is vented through dry fabric filters. The emissions are then vented externally to the ambient air through a stack. The coating lines include six natural gas ovens that are not externally vented and were installed in 1966.

C) REGULATORY REQUIREMENTS

Howard Miller is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit (PTE) of volatile organic compounds (VOCs) exceeds 100 tons per year (tpy).

The facility is a "synthetic minor" or "area" source for HAP emissions because legally enforceable permit conditions were made enforceable through the permit limiting the Potential to Emit (PTE) for any single HAP to less than 10 tpy and combined HAPs to less than 25 tpy. Since this is an area source for HAPs the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Wood Furniture Manufacturing Operations promulgated in 40 CFR Part 63, Subpart JJ does not apply.

EUWOODBOILER1 is subject to the NESHAP for Industrial, Commercial and Institutional Boilers promulgated in 40 CFR Part 63, Subparts A and JJJJJ (Area Source MACT).

Emission units EUSILO, EUWOODEQUIP1, EUWOODEQUIP2, and EUWOODEQUIP3 are subject to Compliance Assurance Monitoring (CAM) promulgated in 40 CFR Part 64.

Emergency generator (EUGENERATOR) is subject to the NESHAP for Area Sources: Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ.

D) COMPLIANCE EVALUATION

Semi-annual reports and annual certifications have been received by the AQD on time as required by the ROP. Per Mr. Winters, records are being maintained for 5 years, which has been verified onsite. All records were reviewed onsite. Examples were requested, which have been provided and are attached to this report.

Since visible emissions were not observed and emissions remain well under the permitted limits the AQD is not requesting any additional testing or verifications as allowed by the Special Conditions (SC) of the SOURCE-WIDE table SC V.1 (HAP Content), EUWOODBOILER1 SC V.1 (Particulate Matter), EUSPRAYBOOTH2 SC V.1 (Visible Emissions), and FGWOODEQUIP SC V.1 (Particulate Matter) at this time.

Stack dimensions were not measured however they appeared to match permit requirements. Mr. Winters also stated that there have been no changes to any of the stacks.

1) MI-ROP-A5937-2020

SOURCE-WIDE CONDITIONS:

Herman Miller is a synthetic minor source of HAPs with Federally enforceable restrictions limiting those emissions to 9.0 tpy individual and 22.5 tpy aggregate (combined). These apply source-wide including equipment covered by other permits, grandfathered equipment, and exempt equipment.

In order to properly calculate these emissions, the HAP content of all coating material and/or materials received, applied, and/or used must be known. Special Condition V.1 requires this to be done through the use of manufacturer's formulation data, which Howard miller utilizes and incorporates into spreadsheets for calculating and tracking emissions.

Safety Data sheets are being maintained as allowed by SC VI.1 in order to comply with the requirements to keep a listing of chemical compositions. Monthly and 12-month rolling records are also being maintained. Records covering the time period of January 2022 through December 2022 are attached. The information required by SC VI.3.a-f has been incorporated into the facility's spreadsheet and is being properly maintained and updated monthly, or as needed. Based on provided records the maximum 12-month rolling total for combined HAPS was 2.762 tons during February 2022, which is well under both the individual and combined HAP limits. Total monthly emissions, which includes both aggregate and individual HAPs, has also been provided and is attached.

EUSILO

The silo operates in conjunction with EUWOODBOILER1 and is equipped with a small 6,000 CFM baghouse at the top of the unit. This silo is subject to an emission limit of 0.10 pounds of particulate matter per 1,000 pounds exhaust gases. Compliance with this requirement is evaluated per visible emissions readings and the preventative maintenance plan (PMP). The visible emissions logs were observed in the maintenance shop. All readings appeared accounted for. As explained in the past to the AQD this silo has to be monitored carefully for pressure drop during operations. In the past, staff kept it slightly negative so that there was no blow back of sawdust in the system when feeding the boiler which could have caused issues with the combustion chamber since the silo contains sawdust. Prior to the recent ROP renewal, the facility's CAM plan had listed the minimum pressure drop as -1.0" W.C. Since a negative pressure drop is not representative of a properly functioning baghouse the minimum pressure drop was changed to zero.

EUSPRAYBOOTH2

The four spray booths covered under EUSPRAYBOOTH2 were initially permitted under PTI No. 657-77 (voided 8/2/1999). These PTIs have all been incorporated into the ROP. The booths are used for surface coating of wood clocks and wood accent furniture. These booths also include internally vented ovens. The spray booths use mat exhaust filters to capture overspray which appear to be installed properly and effective. Filters are replaced as needed. Used filters are placed into a dumpster to prevent the introduction of any contaminants to the outer air (SC III.1). The systems are designed such that the booth's blower is automatically engaged once the spray guns are removed from their hangers, thereby helping to eliminate the possibility of operating spray booths without proper control as prohibited by SC IV.1. Mr. Winters maintains a map of the facility with each spray booth located on it.

No visible emissions were noted, therefore meeting the 20% limit specified in SC I.1. Maintenance records were reviewed onsite (SC VI.2) and the facility appears to be conducting proper maintenance which includes filter replacements.

FGWOODEQUIP

This flexible group consists of wood working equipment controlled by baghouses and cyclones that operate in series. The woodworking equipment consists of carving, cutting, routing, turning, drilling, sawing, sanding, planing and buffing wood components. The dust collection system consists of a silo, cyclonic dust collectors, and four baghouses all in series.

Emission units EUWOODEQUIP1-3 are subject to visible emissions of 20% and a particulate matter (PM) emission limit of 0.01 pounds per 1,000 pounds of exhaust gases, calculated on a dry gas basis. Compliance with the PM emission limit is demonstrated through proper operation and maintenance of the collection and control system which is verified by not exceeding the 20% visible emission limit. Maintenance records were readily available and were reviewed onsite. The facility appears to be conducting necessary maintenance and no visible emissions were observed during the inspection. Proper operation also includes operating the baghouses and cyclones in accordance with the manufacturer's instructions and with the Preventative Maintenance Plan (PMP)/ Malfunction Abatement Plan (MAP). The PMP was updated during the last ROP Renewal and there have been no changes since. The PMP requires visual inspections, baghouse shakedown, and

differential pressure monitoring. Differential pressure (DP) is monitored by the Building Monitoring System (BMS), which CR observed. Baghouse pressures were as follows:

EUWOODEQUIP1 East Wheelabrator = 1.20" w.c.
EUWOODEQUIP1 West Wheelabrator = 2.42" w.c.
EUWOODEQUIP2 Dostar = 02.35" w.c.
EUWOODEQUIP3 Southwest Alanco = 5.10" w.c

Shakedown are conducted at least 2-4 times per day as required by the PMP. Shakedown logs, maintenance records and inspection logs were reviewed onsite. Examples were provided and are attached. Records appeared complete and appropriate. Per observations and discussions with Mr. Winters none of the equipment is operated without proper control (baghouse & cyclones).

FGPMCAMPLAN:

The PM emissions from EUSILO, EUWOODEQUIP1 (FGWOODEQUIP), EUWOODEQUIP2 (FGWOODEQUIP), and EUWOODEQUIP3 (FGWOODEQUIP) are subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR Part 64. These emission units have control devices and potential pre-control emissions of particulate greater than the major source threshold level. FGCAMPLAN requires Howard Miller to install and properly operate the BMS alarm and to maintain baghouse DP. DP is required to be continuously measured, which is being done through the BMS. Staff record the DP for each baghouse manually at least once per day. Per Mr. Winters, pressure gauges are calibrated annually with the last one being conducted in September 2020. Pressure readings were all between the 0-10" w.c. limit as specified in VI.1. Monitoring data and maintenance records were readily available and reviewed onsite (SC VI.4). The facility appears to be conducting maintenance as needed to ensure proper operation and spare parts are kept onsite as required (SC VI.3). The AQD is not requesting any changes to the current CAM Plan at this time (SC IX.1).

Reports have been received on time and properly certified. There have been no excursions or exceedances to report (VI.1 & VII.4) but there was a monitor downtime that occurred from 1/10/22 through 3/3/22 which was a result of a frozen airline giving a faulty reading. Visible emissions were evaluated daily during this time period and no emission were observed. Monitor downtimes were report in the semiannual and annual reports as required (VI.2 & VII.5).

At this time, a QIP is not required since visible emissions have not been observed and pressure drop readings have not been outside of the 0-10" w.c. range twelve times in a 6-month reporting period.

FGRULE287(2)(c)

Emission Unit EUGLUE was installed on January 25, 2017, under Rule 201 permitting exemption Rule 287(2)(c) for coating operations with usages under 200 gallons per month. Usage records are posted on the booth. From July 2022 – December 20222 approximately 21 gallons (~ 4 gal/month average) of adhesive had been used, which is well under the limit of 200 gallons per month. This unit is equipped with a mat exhaust filter to capture overspray. The filter was in great shape at the time of this inspection. Maintenance records were also present and reviewed onsite. The facility appears to be conducting appropriate maintenance.

FGRULE290

At this time, the facility no longer operates any Rule 290 exempt equipment or processes. This Flexible Group was left in the ROP as a place holder just in case such equipment or processes were added. Per AQD policy these placeholders can no longer be left in during an ROP Renewal, therefore if 290 exempt emission units is not installed prior to the next ROP Renewal cycle this section will be removed.

FGCOLDCLEANERS

Howard Miller has one cold Cleaner that appears to be exempt from Rule 201 permitting requirements per Rule 282(2)(h) since it has an air/vapor interface of less than 10 square feet. This unit was closed and does not heat or agitate. AQD instructions were posted.

FGAREASOURCEBOILER

EUWOODBOILER1 is a 9,929,332 BTU/hr. Steelcraft Vyncke stoking boiler. The facility uses both wood-based sawdust and solid wood scraps for fuel to help heat the facility. Wood-based sawdust, containing both solid and manufactured wood, is collected and stored in EUSILO which is transferred, when needed, from EUSILO to the bottom of EUWOODBOILER1 by use of an automatic under-feed auger system. Solid wood scraps are collected and transferred to EUBOILER by use of a conveyor system while any manufactured wood scraps are disposed of in a dumpster.

EUWOODBOILER1 is an existing small (<10 MMBTU/hour heat input) biomass-fired industrial boiler that is located at, or is part of, an area source of HAPs therefore subject to the NESHAP for Industrial, Commercial and Institutional Boilers promulgated in 40 CFR Part 63, Subparts A and JJJJJ (Area Source MACT). The AQD is not delegated the regulatory authority for this area source MACT.

2) OTHER

Emission unit EUSPRAYBOOTH1 contains eleven spray booths and accompanying ovens that were installed in 1966. Since it was installed prior to August 15, 1967, it is considered "grandfathered", therefore not subject to New Source Review (NSR) permitting requirements at the time of installation.

Howard Miller uses 12-13 oz handheld aerosol spray cans for repairing damages. Since the cans are larger than 10 oz, they do not meet the requirements to be exempt from permitting under Rule 287 (2)(b). Mr. Winters uses purchase records to track the number of cans used. From January 1, 2022, through December 31, 2022, the following number of spray cans were purchased:

July = 60, Aug = 240, Sept = 60, Oct = 132, Nov = 84, Dec =294

Considering the 200 gallon/month limit allowed by Rule 287(2)(c), the facility would need to use more than 1,969 13oz cans in order to exceed 200 gallons. Based on the number of cans purchased monthly it appears that the facility is well under the 200 gallon/month limit.

128 oz = 1 gallons

200 gallons * 128 oz = 25,600 oz

25,600 oz / 13 oz = 1,969 cans

The emergency generator (EUGENERATOR) consists of an 18KW (0.16MMBTU/hr.) generator and a Briggs and Stratton 25HP natural gas fired engine. Based on the Code stamped on the engine (07041812) the engine was manufactured on April 18, 2007. This engine is subject to the NESHAP for Area Sources: Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ. Due to the size and the age of this Emission Unit, the only requirement of 40 CFR Part 63, Subpart ZZZZ (40 CFR 63.6590(c)(1)), is to comply with the New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and JJJJ. However, based upon the manufacture date, Subpart JJJJ does not impose any requirements because Subpart JJJJ does not apply to engines of this size and type that are manufactured prior to July 1, 2008.

3) MAERS

Howard Miller’s 2021 emissions data was not selected for auditing during the 2022 Fiscal Year and emissions data for 2022 has not been submitted yet since it is due by March 15, 2023. In order to meet the requirements of an FCE for the FY ’23 inspection CR conducted a cursory review of the 2021 data on 1/20/2023. The facility is using MAERS emission factors for everything except for the coating operations and the cold cleaner, which are based on mass balance equations. Supporting documentation was provided. The reported emissions seem appropriate, however emission unit EUGLUE was not reported. Since it is specifically listed in the facility’s ROP it must be included in MAERS. CR will notify Mr. Winters and changes to the 2022 data can be addressed during the auditing period after March 15th. The supplemental will also need to be revised.

The 2021 emissions data is summarized in the table below.

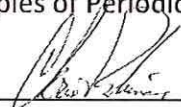
Pollutant	Amount (tons)
CO	1.51
Lead	0.002
NOx	1.23
PM10	1.49
PM2.5	0.78
SO2	0.06
VOC	27.24

E) COMPLIANCE DETERMINATION

Based on observations made during this inspection and a records review, Howard Miller appears to be operating in compliance with ROP MI-ROP-A5937-2020.

Attachments

- Examples of Daily Dust Log (West & East Wheelabrators)
- Example of Daily Non-Certified Opacity Log
- Example of Visible Emission Observation Form
- Examples of Periodic Maintenance Service Forms

NAME 

DATE 1/20/2023

SUPERVISOR 