

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

N126368229

FACILITY: DOUGLAS MARINE		SRN / ID: N1263
LOCATION: 6780 ENTERPRISE, DOUGLAS		DISTRICT: Kalamazoo
CITY: DOUGLAS		COUNTY: ALLEGAN
CONTACT: Jodie McGee , Office Manager		ACTIVITY DATE: 07/18/2023
STAFF: Cody Yazzie	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Onsite Inspection		
RESOLVED COMPLAINTS:		

On July 18, 2023 Air Quality Division (AQD) staff (Cody Yazzie) arrived at 6780 Enterprise Drive, Douglas Michigan at 10:30 AM to conduct an unannounced air quality inspection of Douglas Marine Corporation (hereafter Douglas Marine) SRN (N1263). Staff made initial contact with the office receptionist and stated the purpose of the visit. Mike Veldhoff, Douglas Marine, Manager, is the environmental contact and arrived shortly thereafter and took staff to his office for further discussions. Jodie of Douglas Marine works in the front office for the company and maintains records associated with the permit for the facility.

Douglas Marine manufactures fiberglass skater powerboats. The facility lays fiberglass on molds for the hull and deck portions of the boats then fits them together. Other fiberglass, wood, metal portions of the boat are made and fabricated on site. The operation has one large paint booth for coating operations. Staff was told they produce between 4-6 boats per year at the time of the inspection.

Douglas Marine was last inspected by the AQD on June 26, 2013 and appeared to be in Non-compliance at that time with PTI No. 69-86B Staff asked, and Mr. Veldhoff stated that the facility does not have emergency generators or boilers.

Mr. Veldhoff gave staff a tour of the facility. Required personal protective equipment are safety glasses and steel toe boots. Staff observations and review of records provided during and following the inspection are summarized below:

EUCLEANUP:

The facility uses acetone as a cleanup solution for miscellaneous cleanup activities throughout the site. The facility is required to maintain acetone monthly and 12-month rolling usage records. In these records the facility is maintaining records of drums used, reclaimed, and net used. These are then used to record the monthly and 12-month rolling usages.

The facility is doing a mass balance using the density of the acetone and gallons used to calculate total usage. The density used appears to be the 0.792 g/cm³ provided in the SDS. Staff reviewed the 12-month rolling data for the time period of January 2021 through June 2023. These records showed that the largest amount of acetone used in a 12-month rolling time period was 4.6 TPY used in the months of December 2021 through March 2022. This maximum amount used in the reviewed time period is well below the permitted limit of 37.0 TPY.

FGFIBERGLASS:

The facility does have multiple material usage limits for VOC content, styrene content, and methyl methacrylate (MMA) content for the different classifications of production resins, tooling resins, and gelcoat materials. In these conditions it also specifies what emission factors should be applied to materials that adhere to the material limits specified.

Records produced by Douglas Marine clearly identify which category the resin, gelcoat, or tooling materials should be categorized in. Staff requested SDS's for each resin, gelcoat, or tooling material that is used in production at the facility. The facility uses 8 different resin, gelcoat, or tooling materials in their production process.

The Shell Epon 862 Epoxy Resin is what is used for the majority of the production resin. When checking the SDS it was noted that it was composed of 100% phenol-Formaldehyde Polymer Glycidyl Ether CAS # 28064-14-4. This material appears to be the same gelcoat that was evaluated during the permit application. The facility appears to be using the emission factors established during the permit application process.

Douglas Marine uses Ancamine 1784 as a curing agent that mixed in with the Shell Epon 862 Epoxy Resin. The SDS showed that it is composed of Nonylphenol (CAS# 25154-52-3). This material appears to be the same curing agent that was evaluated during the permit application. The facility appears to be using the emission factors established during the permit application process.

The facility also uses a production resin that is for smaller parts which was identified as RCI Dion 33434. When looking at the SDS sheet for the RCI Dion 33434 resin Staff noted that it has a styrene content of 48.5% by weight. Special condition 2.3 limits the VOC content of production resins used in FGFIBERGLASS to not more than 4.0 percent by weight. This exceeds the permitted limit. The facility was also not tracking records for monthly usages for this resin. This is a violation of Special condition 2.12. Staff mentioned that they planned to send a violation notice identifying these issues to the facility.

The facility utilizes a DBF filler material that does contain styrene of 25% by weight. This material appears to have been evaluated during the permit application. Special Condition 2.2c outlines the application method and emission factor that should be utilized for this material. The facility appears to be using the appropriate emission factor and application method.

The Filler 240 DBF-80903 SDS showed that the styrene content was identified as 25% by weight. This differs from the Douglas Marine records showing 29.00% by weight. Staff thinks the records should be updated to reflect the accurate styrene weight percentage.

There are two different production gelcoats that are used in the process. These are the White Gel Coat 120WK744, and the Clear Gel Coat #941-XJ-121. These materials must comply with the specified material limits in Special condition 2.5. The facility records indicate the White Gel coat that they use is White Gel Coat #944W005. During the records review Staff was told that the facility has not used the White Gel Coat #944W005 since before 2015. The facility has been using White Gel Coat 120WK744 but has not updated record sheet to reflect this change. Staff thinks that this would be a violation of Special Condition 2.12a which requires the facility to maintain the identity and amount in pounds of each material used. The Records being incorrect on the

identity of the gelcoat used would be a violation. Staff mentioned that a violation notice would be sent for this issue identified.

White Gelcoat 120WK744 SDS showed that the styrene content to be 26.82% by weight. The MMA content showed a range of 1.0-5.0% by weight. Using the high end value the range the White Gelcoat 120WK744 appears to meet the material limits for both styrene and MMA limits of 31% and 5% by weight respectively. The facility will need to utilize the emission factors of 0.138 for styrene and 0.038 for MMA.

Clear Gel Coat #941-XJ-121 SDS showed that the styrene content was identified as 42.3710% by weight. This differs from the Douglas Marine Records showing 42.39% styrene content by weight. Staff noted that the facility identified this clear gel coat MMA content to be 6.5% by weight, which what was identified in the SDS. The facility should update the styrene content to the 42.3710% by weight. With the correct styrene and MMA content values the material still complies with the material limits in Special Condition 2.5b for clear gelcoat that are applied with an atomized application method. These limits are 43% styrene content and 7% MMA content. The records showed that the appropriate emission factors were applied in the records for the materials.

The facility uses four different tooling resins in the manufacturing process. These are the Derakane 224768 resin, Derakane 104042 resin, Derakane 692811 resin, and Polylite RCI Tooling #33540-00 materials. These materials must comply with the VOC content limit specified in Special Condition 2.4 and utilize the application method and emission factor outlined in 2.2b. During the records review Staff was told that the Derakane resins have been substituted for the Tooling Resin 701. The records do not reflect an accurate identification of which Derakane resin is used however Staff was told that is applied and used in the same manner as the Tolling Resin 701. As previously stated, not having accurate records to identify the identity and amount of the materials used is a violation of Special Condition 2.12.

The Derakane 224768 SDS showed that is has a styrene content of 33.005% by weight and a MMA content of 1.7867% by weight. These appear to be below the required 48% VOC by weight for tooling resins outlined in Special Condition 2.5. The emission factor that should be assigned to this material is 0.059 per Special Condition 2.2b.

The Derakane 104042 SDS showed that is has a styrene content of 33.0417% by weight and a MMA content of 1.18% by weight. These appear to be below the required 48% VOC by weight for tooling resins outlined in Special Condition 2.5. The emission factor that should be assigned to this material is 0.059 per Special Condition 2.2b.

The Derakane 692811 SDS showed that is has a styrene content of 31.8293% by weight and a MMA content of 1.00% by weight. These appear to be below the required 48% VOC by weight for tooling resins outlined in Special Condition 2.5. The emission factor that should be assigned to this material is 0.059 per Special Condition 2.2b.

The Polylite RCI Tooling #33540-00 Resin SDS showed that it has a styrene content of 40-50% by weight and a MMA content of 2% by weight. Using the high value of the SDS sheet the VOC content would be greater than the 48% VOC content by weight allowed from Special Condition 2.4. This is a violation of special condition 2.4.

The facility uses one tooling gelcoat in the manufacturing process. This is the Green Tooling Gel Coat #945-GA-104. This tooling gelcoat must comply with the material limits, application method, and utilize the emission factors outlined in Special condition 2.5c. The SDS showed that the material had a Styrene Content of 42.27% by weight and MMA content of 0.1-1.0% by weight. Using the high range value this gel coat appears to meet the material limits specified in 2.5c which are 48% Styrene by weight and 5% MMA by weight.

The facility uses the monthly usage records for each material and emission factors to produce monthly and 12-month rolling emission calculations. Staff reviewed the 12-month rolling emission calculations for the time period of June 2019 through June 2023. During his time period the largest amount of 12-month rolling VOC emissions appeared to occur in October 2021 in which it was calculated that 2.84 TPY of VOC emissions were emitted. With missing or inaccurate emission factors used based on the permit it is unclear how much emissions would change, however it is likely that the facility would still be under their 7.2 TPY VOC emission limit once the records have been properly updated based on how low emissions are currently calculated.

Paint Booth Rule 287(2)(c):

The facility does have one large paint booth that is used to paint the boats. During the inspection the facility appeared to be utilizing Rule 287(2)(c). Staff requested monthly records for the paint used for coating operations in the paint booth. Staff was provided with monthly purchase records for the time period of January 2022 through June 2023.

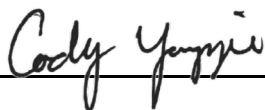
Records include an item number, Description of the coating, and quantity purchased during the month. During the reviewed time period the largest monthly amount of coating used occurred in August 2022. The facility recorded 104.00 gallons used/purchased during that month. This is below the allowed 200 gallons per Rule 287(2)(c). The facility appears to be able to meet the requirements in Rule 287(2)(c).

Metal Working Equipment & Wood Working Equipment:

The facility does have multiple units that are used for cutting, grinding, drilling, machining and fabricating both wood and metal parts. All these units that are used for metal fabrication are exhausted to the general in-plant environment. The wood working units are either exhausted to the general in-plant environment or vacuumed into storage bin that collects the dust from the operation. Either way the emissions are only emitted to the general in-plant environment. Both the metal working and wood working equipment appear to meet the requirements of 285(2)(I) (vi)(B).

At the time of the inspection and based on a review of records obtained during or following the inspection, the facility appears to be in non-compliance with material limits and recordkeeping requirements in PTI No. 69-86B. Staff stated to Jodie that a report of the inspection would be sent to the facility for their records. Staff concluded the inspection at 11:30 AM.-CJY

NAME

DATE 9/26/2023SUPERVISOR Monica Brothers