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

B502233793

FACILITY: GMI Composites, Inc		**SRN / ID:** B5022
LOCATION: 1355 W SHERMAN BLVD, MUSKEGON		**DISTRICT:** Grand Rapids
CITY: MUSKEGON		**COUNTY:** MUSKEGON
CONTACT: Tim Johnson , Engineering Manager		**ACTIVITY DATE:** 03/17/2016
STAFF: Kaitlyn DeVries	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: The purpose of this inspection was to determine compliance with Permit to Install No. 183-07C and all other applicable Air Quality Rules and Regulations.		
RESOLVED COMPLAINTS:		

On Thursday March 17, 2016 AQD Staff Kaitlyn DeVries (KD) conducted an unannounced, scheduled inspection of GMI Composites, Inc. Located at 1355 West Sherman Blvd, Muskegon, Michigan. The purpose of this inspection was to determine compliance with Permit to Install No. 183-07C and all other applicable Air Quality Rules and Regulations.

KD arrived in the area of the facility at approximately 9:30 am to survey the area for any excess opacity or odors. None were observed. KD met with Mr. Tim Johnson, Engineering Manager, to explain the purpose of the visit. KD supplied Mr. Johnson with the Environmental Rights and Responsibilities pamphlet, which was briefly discussed. Records were requested, after a tour of the facility, and were electronically supplied to KD on a later date. KD left the facility at approximately 11:30 am.

When the records were received, KD spoke with Mr. Tony Pitts, Environmental Services Manager, for EJ Co. Mr. Pitts explained that EJ Co had recently purchased GMI Composites, Inc. Additionally, Mr. Pitts stated that for the time being, GMI Composites, Inc. will keep its name. KD explained the requirements that may be needed if the facility changes names, and or responsible officials.

Facility Description:

GMI Composites Inc. (GMI) is a manufacturer of fiberglass reinforced plastics. The facility has several different production areas including molding (resin transfer molding, injection molding, and compression molding), pultrusion, and filament winding. Additional details and descriptions of the processes will follow in the compliance evaluation portion of this report.

GMI employs approximately 50 employees, and operates three (3) shifts, five (5) to seven (7) days per week.

Regulatory Analysis:

GMI is a synthetic minor for HAP's, and currently has one (1) Opt-out permit, permit to install number PTI 183-07C. GMI has taken HAP's Opt-Out limits in order to not be subject to 40 CFR Part 63 Subpart WWWW, thus they are not subject to any federal regulations at this time. GMI also utilizes several Rule 201 permitting exemptions for various pieces of equipment in the facility.

Compliance Evaluation:

Exempt Emission Units

GMI has one (1) 12 MMBTU natural gas fire boiler. This unit is exempt from Rule 201 permitting under Rule 282 (b)(i). Additionally, this unit is not subject to the Boiler MACT.

GMI also has routing, buffing, grinding, and deflashing areas, where the molded products are finished. These areas are exempt from Rule 201 permitting under Rule 285 (l)(vi)(B) and Rule 285 (l)(vi)(C), respectively. These areas are either vented into one of several dust collection units, located throughout the facility, or are exhausted back into the general in-plant environment.

The facility does not have any emergency generators, but there are a few small cold cleaners that are exempt from Rule 201 permitting under Rule 281 (h).

GMI uses Rule 290 for its Thermoclean process. GMI previously had the Thermoclean process permitted, but

during one of the previous changes to the permit, GMI decided to utilize Rule 290 instead of the permitting requirements. GMI is maintaining the required monthly Rule 290 emission records for this process (see attached). Assuming carcinogenic emissions with an ITSL > 0.04 µg/m^3, the highest emitted chemical is emitted at 10.89 pounds/month, which is below the allowed 20 pounds for uncontrolled processes.

GMI is also using Rule 290 for the Baule machine. The Baule machine is used for casting of polyurethane parts. GMI is adequately maintaining records of the materials used and MDI content of each material used, and properly using industry guidance for the K_{MDI} factor, vapor pressure, and process temperature for which each part is made (please see attached), in addition to the emissions. While GMI is maintaining records for Rule 290, improvements to the recordkeeping could be made here, providing more detailed records of the emissions.

EU-SMC/BMC

The Sheet Molding Compound (SMC) and Bulk Molding Compound (BMC) emission unit is a closed molding processes composed of seven (7) compression molding machines and three (3) injection molding machines. However, per Mr. Johnson, GMI now only has two (2) injection molding machines. Per Mr. Johnson, the thermoplastic injection molding equipment was removed in the past six (6) months. The molding processes use several various resins. MSDS's for many of the resins are attached to this report, which contain VOC and Styrene contents. Various fugitive VOC and Styrene emissions are emitted from these processes. VOC's from this emission unit is limited to 26.5 tons per year (tpy) 12-month rolling. As of February 2016, the 12-month rolling average is 2.03 tons. Styrene and other material usage are properly being tracked as well. GMI used 5,032.5 pounds of styrene in February 2016.

EU-FILAMANET

This area includes a filament winding area, one (1) resin bath, and two (2) winding mandrels. The winding mandrels are externally vented. The stack dimensions were not explicitly measured, but there didn't appear to be any changes. The filament area takes the fiberglass strands and pulls them through a resin bath before they are rolled onto one of the two mandrels. After the fibers are cured, and subsequently cooled, they are used elsewhere in the facility.

VOC emissions from this process are limited to 2.0 tpy. As of February 2015, the 12-month rolling emissions were 1.46 tons. GMI is appropriately tracking the material usage, MDI, and Styrene content of each material used in this process. The Styrene content of any resin is limited to 34.0% by weight, and per the attached MSDS, the Styrene content of one of the resins used is 35.0%, which exceeds the allowable content. Additionally, a styrene monomer is sometimes used in this process. The styrene monomer is 100% styrene. Per a telephone conversation with AQD Permit Engineer Daniel Schwanik, the use of the sytrene monomer was not initially evaluated in the PTI application, nor any of the subsequent revisions. However, the intent of the material limit in the permit (Special Condition II.1) was for the resin as received, thus not including the monomer. GMI is calculating the monomer into the emission calculations, thus the styrene emission calculations are acceptable.

Nevertheless, the use of a resin with a stryene content of 35% is a violation of EU-FILAMANET Special Condition II.1. A Violation Notice (VN) will be sent.

EU-PULTRUSION

This pultrusion area is where the glass strands are pulled through a resin bath and strung through the pultrusion machine. The coated glass strands are then pulled through a heated die and are cut to proper length. The electric curing oven is set between 225°F and 240°F, and externally vented. The oven is exempt from Rule 201 permitting under Rule 282 (a).

VOC emissions are limited to 4.0 tpy, and as of February 2016, the 12-month rolling VOC emissions were 0.12 tons. Styrene and VOC content is tracked for each of the materials used, and many of these can be found on the attached SDS's. Styrene content is limited to 44.0% by weight, and per the attached SDS, and material usage list, the maximum styrene content used in this process is 41.96%, which is acceptable.

EU-RTM

This emission unit includes seven (7) resin transfer molding (RTM) machines. The resin(s) are held in storage

tanks for use in the machines. There were no apparent odors coming from any of the storage tanks. The molds that are made here are transferred to other locations in the facility for finishing after they are made.

VOC's from this process are limited to 5.5 tpy, and as of February 2016 the emissions were 2.42 tons. GMI is properly tracking material usage VOC emissions. Additionally, the attached MSDS's contain the VOC content and styrene content for each material used. Styrene content from any resin used here is limited to 44.0% by weight. Per the attached SDS, and material usage list, the maximum styrene content is 44.05% for one for the resins used in this process. After conversations with AQD's permit section, this is not considered a violation.

EU-MOLDRELEASE

Mold release materials are used in various locations throughout the facility. GMI is limited to a maximum usage 285 gallons of mold release, 12- month rolling. Based on the monthly usage records (attached), as of February 2016 GMI is at approximately 150 gallons of mold release used. All materials and the subsequent VOC content is being properly tracked. Additionally, VOC emissions from this process are limited to 1.0 tpy. As of February 2016 the 12-month rolling VOC emissions were 0.19 tons.

EU-PORTBLURETHANE

Per an e-mail conversation with Mr. Pitts, this process equipment has not been used since February 2014, thus the emissions are zero.

EU-RIM

This process consists of one (1) resin injection molding (RIM) machine with two (2) mix heads for molding of polyurethane, which exhausts back into the general in-plant environment. VOC's from this process are limited to 2 lbs./yr. As of February 2016 the VOC emissions were 0.0224 pounds. GMI is adequately maintaining records of the materials used and MDI content of each material used, and properly using industry guidance for the K_{MDI} factor, vapor pressure, and process temperature for which each part is made (please see attached).

FG-FACILITY

GMI maintain facility wide opt-out limits for Hazardous Air Pollutants (HAP's). GMI is properly maintaining records for individual and aggregate HAP's. Individual HAP's are limited to 9.0 tpy 12-month rolling, while aggregate HAP's are limited to 22.5 tpy 12-month rolling. As of February 2016, aggregate HAP emissions were 4.69 tons. Styrene, with 12-month rolling emissions of 4.68 tpy, was the highest quantity HAP emitted. The emission of 4.68 tons is also below the facility wide Styrene limit of 5.9 tpy 12-month rolling.

GMI does not re-claim any of its waste products, but rather disposes of it via landfill. GMI is properly tracking all material usage, VOC, HAP, and Styrene usage and content for all materials used at the facility.

2015 MAERS records were also reviewed in conjunction with this report. All emissions reported in the 2015 MAERS are consistent with the records that were received with this report.

Compliance Determination:

Based on the observations made at the time of the inspection, and a subsequent review of the records, GMI Composites is not in compliance with all conditions located in PTI No. 183-07C. A Violation Notice will be sent for the Styrene content exceedance for EU-RTM Special Condition II.1.

NAME Kaitlyn Dubois DATE 4/18/2016 SUPERVISOR PHS