

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

N553567289

FACILITY: Andronaco Industries		SRN / ID: N5535
LOCATION: 4242 44TH ST SE, KENTWOOD		DISTRICT: Grand Rapids
CITY: KENTWOOD		COUNTY: KENT
CONTACT: Kevin DeGraves , Quality/Safety Manager		ACTIVITY DATE: 04/06/2023
STAFF: April Lazzaro	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff April Lazzaro arrived at the Andronaco Industries Plant 3 to conduct an unannounced scheduled inspection. Upon arrival, no odors or visible emissions were observed. I entered through the back entrance and met with Ron Johnson initially who provided me with information on the facility and operations. Andronaco Industries consists of various smaller companies operating therein. These are Pure Flex, (fiberglass) Ethylene, (steel lined pipe and fittings) and Nillcor (composite mixing, large valves and fiberglass) which are all owned by EagleTree Capital. The AQD contact, Kevin DeGraves, Quality/Safety Manager arrived and proceeded to escort me around the facility.

Facility Description

This Andronaco facility manufactures valves, fittings, joints, sleeves, and other piping products for the pharmaceutical, chemical, steel, wastewater and energy markets utilizing polyfluorinated plastics and fiberglass (polystyrene resins). These activities are done using composite (styrene resin) fiberglass mixing, which is used in a variety of applications within the facility including: manual open molding utilizing fiberglass and vinyl ester resins, resin transfer molding to form parts in closed molds, and pultrusion molding utilizing a series of dip tanks and filament to produce fiber-reinforced plastic pipes. There are also processes that are permitted that have been removed from operation, including a filament winding process, and six (6) bulk molding compound (BMC) closed molding machines and a burn-off oven. The stationary source, which currently includes Plant 3 and 4, operates pursuant to Opt-out Permit to Install No. 29-20 which limits the emissions of volatile organic compounds (VOCs), and hazardous air pollutants (HAPs). This permit also includes activities operating in Plant 4, however this equipment is not currently operational as the plant is closed (burn off oven and BMC) . General Permit to Install No. 176-19 covers one burn-off oven that is not currently operational located in Plant 4.

Compliance Evaluation

PTI No. 29-20

The permitted operations at Plant 3 consists of the following operations: hand layup fiberglass and styrene/vinyl ester resin activities (EUHANDLAYUP), resin transfer molding consisting of various dies used to form parts in a closed mold process using fiberglass and styrene resin (EURTM), pultrusion molding utilizing styrene resin dip tanks and filaments (EUPULTMOLDING) and composite mixing of styrene resin and fiberglass materials (EUCOMPMIXING).

FGPLANT3

This flexible group includes the emission units identified above and are explained in further detail below.

Composite Mixing (EUCOMP MIXING):

The processes begin at EUCOMP MIXING, where totes of solids (including chopped fiberglass and other binders) are stored and mixed. In this process, a mixture based on weight of various solid materials and liquid resin are created in batches. There are 3, 55-60 lb mixers and 1, 450 lb mixer. The area is vented using a fan to blow the styrene emissions and odors towards a booth with filters and stack. There is a side door that was also open during the inspection. I recommended that the door remain closed during mixing as it would affect the removal of emissions from the workspace. The booth and associated stack were not identified in the permit application, and as such Andronaco will be required to review the process to determine if the change requires a permit modification. The mixed composite fiberglass product made in batches is used in the compression molding operation located here as well as at Plant 1 (SRN: P0361 and included in a separate activity report). Due to the shared ownership, proximity and primary activity, AQD will request a stationary source determination.

There were a variety of buckets with residual material of unknown content in the materials area, as well as buckets under the tap of resin drums that did not have covers. Andronaco will make improvements in material storage and disposal practices.

Pultrusion Molding (EUPULTMOLDING):

In this process, reinforced fiberglass or polytetrafluoroethylene (PTFE, registered name Teflon®) resins are stretched at room temperature where it goes through a die at 180°F, which cures the plastics. There are two stacks which vent externally that are associated with this process. These two stacks were not identified in the permit application, and as such Andronaco will be required to review the process to determine if the change requires a permit modification. In this area is an acetone parts washer. The lid was closed at the time of the inspection.

Hand Lay-up (EUHANDLAYUP):

At the time of the inspection, a RF hand layup operation was installed and operating. This process uses fiberglass and vinyl ester resins to build a valve body to a certain thickness. This is an open-mold process.

Resin Transfer Molding (EURTM):

This line consists of various dies used to form parts in a closed mold process. Essentially fiberglass is placed into a mold and a resin injected into the closed mold cavity encapsulating the fiber. Also associated with the RTM process are curing ovens. There is one small oven and one medium oven. These ovens operate at or below 220°F for 1.5-2.0 hours and are used to cure the parts inside the mold. Once cured, they are cooled and removed from the mold.

Filament Winding (EUFILWINDING):

This emission unit has been removed from the facility.

FGPLANT3 is subject to a combined volatile organic compound (VOC) and acetone (CAS No. 67-64-1) emission limit of 24 tons per year (tpy) per a 12-month rolling time period. Records were requested and reviewed from January 2022 through March 2023. The records provided have errors, and do not include 12-month rolling totals of VOC and acetone combined. Compliance with the limit cannot be determined, and as such is a violation of PTI No. 29-20, Special Condition (SC) VI.3 a, d & e. It is noted that the previous inspection identified errors, which were discussed with the company at that time. Additionally, it is noted that there are months where the usage is identical for both resin and acetone. The AQD expectation for recordkeeping is that a company record actual usage and report emissions from that usage each month. This should be evaluated by Andronaco Industries going forward to ensure accurate reporting.

Additionally, material limits have been established limiting the styrene content of all resins used in FGPLANT3 to not exceed 53 percent by weight as applied. Safety Data Sheets (SDSs) were requested and reviewed. The information on the resins provided show they are below 53 percent styrene; however Special condition VI.3 requires that the facility identify the VOC content and acetone content of each resin and cleanup solvent as well as the appropriate emission factor for each material. The records do not contain a listing of materials used and emissions associated. Due to the lack of accurate information for the resins and acetone, this is a violation of PTI No. 29-20, SC VI.3 b & c. Andronaco is using a maximum VOC content number and applying it to the usage for each emission unit but is not using the actual value for the materials in use and it is noted that the materials reviewed contain a lower VOC content. It is noted that a prior AQD inspector indicated this was acceptable for the resin usage, however this approach is not what is required by the permit. It is noted below that FGFACILITY states that the appropriate emission factor for each material is required to be used in the calculations.

FGBMC

This flexible group includes six bulk molding compound (BMC) closed molding machines in Plant 4. This plant is closed, and the equipment has been removed, therefore no emissions are reported at this time.

FGFACILITY

This flexible group is for all process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

This flexible group is subject to individual and aggregate HAP emission limit of less than 9.0 tpy and less than 22.5 tpy per 12-month rolling time period. Records were requested and received for the time period of January 2022-March 2023. The highest reported individual HAP was for the 12-month rolling time period ending in January 2023 was styrene at 1.95 tons. Total reported aggregate HAP emissions through February 2023 is 0.390 tons. However, this value must be an error, since aggregate HAP emissions are either the same or higher than the single highest reported HAP. Since the recordkeeping is not accurate, this is a violation of PTI No. 29-20, Special Condition No. VI.3.f for failure to maintain accurate 12-month rolling total HAP emissions records.

Additionally, this flexible group is subject to a styrene (CAS No. 100-42-5) emission limit of 17,270.1 lbs/year based on a 12-month rolling time period. The value reported as styrene is linked to the VOC monthly emissions total. It is not identified as a styrene emission rate, and there appears to be additional VOC's in the resins that may or may not be accounted for. The value in the spreadsheet does not appear to be a 12-month rolling time period, and the cell formulas appear to be pulling from a spreadsheet with 2018 in the name. As such, this is a violation of PTI No. 29-20, Special Condition No. VI.4.

Finally, it is noted that the recordkeeping spreadsheet has a tab titled "Rolling Average", which is where the rolling data is housed. The permit requires a 12-month rolling total. This is not the same thing as an average. This should be evaluated, and the data in the spreadsheet corrected so it does not say it is an average if it is rolling total emissions.

General Permit to Install No. 176-19

This permit covers one IGG-340 burn-off oven, which is located in Plant 4. It is not currently operating; however the facility would like to keep the permit for the time being. It was being used as an oven for PTFE and other plastic items. I discussed with Andronaco that this is not allowed by the permit applicability criteria and should not be used for that purpose in the future if it is put back into service. Mr. DeGraves indicated he understood, and they would not do so.

Additional unpermitted equipment:

There is one large oven used for a couple different purposes, and several small ovens used in the same fashion. One purpose is to warm up the PTFE piping so that it becomes malleable, and a liner can be stretched over it in a manually guided process. When the oven is used for this purpose, it is heated to 220°F for a short period of time. The oven is also used to sinter the PTFE piping in 6-12 hour batches, in order for the PTFE to bond and hold its shape. When used for this purpose, the oven is heated to 700°F. This process was not included in the permit application for evaluation. Research indicates that PTFE sintering has the potential to release tetrafluoroethylene and small amounts of polyfluorinated alkyl substances, known widely as PFAS compounds. Both of these are known air toxics. A request to quantify these emissions and to clarify the permitting status of all sintering ovens at the facility will be made.

Exempt Equipment

The facility operates various welding and steel fabrication activities that are exempt pursuant to Rule 285(2)(i), Rule 285(2)(l)(i) and/or Rule 285(2)(l)(vi)(B).

Conclusion

Andronaco Industries was in non-compliance at the time of the inspection. A Violation Notice (VN) will be issued. The VN will also include a request information on the facility-wide Potential to Emit (PTE) demonstration for all pollutants at the source, as well as a request for a facility-wide inventory of equipment and identify the permitted or exempt status of each pursuant to Rule 278.

NAME April Lazzaro

DATE 05/09/2023

SUPERVISOR 