

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

N174951463

FACILITY: PLASTATECH ENGINEERING LTD		SRN / ID: N1749
LOCATION: 725 MORLEY DR, SAGINAW		DISTRICT: Saginaw Bay
CITY: SAGINAW		COUNTY: SAGINAW
CONTACT: Michael Matthews , Environmental		ACTIVITY DATE: 11/21/2019
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Inspection of Opt-Out permit #336-97C		
RESOLVED COMPLAINTS:		

I (glm) conducted a scheduled inspection to determine compliance with PTI 336-97C and air regulations. I met with Mr. Chris Thompson, Safety Personnel. Mr. Michael Matthews is the Corporate Safety Director and they are currently looking for an Environmental Manager. I also met with Mr. Scott Rosebrock, Maintenance Supervisor. The inspection included a tour of the production facility, air pollution control equipment, and a review of electronic records for processes and emission control devices.

Plastatech Engineering manufactures vinyl and PVC film material. These films are produced in a calendaring process and undergo additional steps to produce the finished products, primarily commercial roofing membranes. On December 16, 2014, the facility was issued PTI 336-97C which is a facility wide opt-out permit for hazardous air pollutants (HAPs). This permit covers a calendar line (EUCALENDERLN), two laminator lines (FGLAMINATORLNS) and an extruder line (EUEXTRUDERLN). FGLAMINATORLNS is controlled by Smog-Hog ESPs for volatile organic compounds (VOC)/condensable PM emissions and EUEXTRUDERLN is controlled by a cyclone and cartridge-type dust collector system.

#### EU-CALENDERLN: Compliant

The calendar process extrudes a measured amount of thermoplastic PVC material between successive pairs of co-rotating, parallel rolls, to form a PVC film 3 to 40 mills in thickness. The process consists of three 90,000 pound storage tanks (two for plasticizer and one for ESO), three 1500 pound totes, three 170,000 pound PVC resin silos, four 2,200 pound super sacks a five story mixing tower, a planetary extruder, a strainer extruder, a 14 foot conveyor, calendar rolls, and cooling rolls. The calendar line is an extrusion process that produces the initial product used for all finished goods at the facility. Raw materials consisting of PVC resin, plasticizers, heat stabilizers, biocides and colors are combined by gravity loading into a weigh hopper and loaded into the planetary extruder followed by a screw extruder. The extruders are heated by a hot oil bath jacket on the extruders. This process generates a semi-viscous thermoplastic that is pressed into a thin film using a series of high temperature, high pressure rollers. This film is then cooled by an additional series of rollers, trimmed to width and wound into rolls. These rolls then go to other operations or are shipped off-site.

Emissions generated in the calendar process are captured by hoods and vented outside through one stack.

VOC emissions are limited to 16.3 ton per year (TPY) for this line. I reviewed records from January 2017 through October 2019. VOC emissions ranged from 6.86 ton per year (tpy) in April 2017 to 8.79 tpy in October 2019.

#### EU-EXTRUDER: Compliant

This emission unit is a vinyl film extruder process to produce reinforced vinyl film up to 12 feet in width. The extruders will mix the raw materials to make a vinyl fluid, calender the filmsheets in one process. The dry raw material handling will be controlled by a cyclone and cartridge-type dust collector system. This unit was installed in 2014 and triggered the PTI revision for 336-97C.

The facility is required to maintain a malfunction abatement plan (MAP) for the pollution control equipment. A copy was received via email on December 16, 2016. The proper pressure drop operating range shall be included in the MAP. The current MAP does not include this, and the facility is working on updating. According to Mr. Rosebrock there is a top layer and a bottom layer to each cyclone. The differential pressure of the top component was at 3.5 "W.C. and the bottom was at 3.65" W.C. at the time of the inspection.

The facility is required to comply with VOC emission limits of 66.2 tpy. I reviewed records from January 2017 through current. VOC emissions range from 8.5 tpy in April 2018 to 22.3 tpy in January 2017. PTI 336 -97C limits the use of plasticizer, epoxidized soybean oil (ESO) and heat stabilizer to 16,000,000 pounds (lbs)/yr, 1,000,000 lbs/yr, and 1,125,000 lbs/yr, respectively, based on a 12-month rolling time period as determined at the end of each calendar month. The facility maintains material usage records and reported material usage for all three were below the allowable limits.

#### FG-LAMINATORLNS (EULAMINATORLN1, EULAMINATORLN2): Compliant

Plastatech operates two laminator lines for producing a roofing membrane. The lamination process thermally bonds two vinyl films to a reinforcing mesh (scrim) to produce the roofing membrane. A plasticizer is used as the laminating adhesive that bonds the two vinyl films to the scrim substrate. Each line is controlled by a Smog-Hog electrostatic precipitator (ESP) at the facility. The lamination process involves bonding two layers of the vinyl film over a reinforcing mesh (scrim) using a plasticizer as an adhesive and heat to activate. Each laminator line utilizes a separate Smog Hog ESP to control emissions from the process, (No. 2 for line 1 and No. 3 for line 2). The emissions are generated from the curing of the adhesive and captured by hoods over the heated portion of the process.

The Smog-Hogs utilize a closed loop chilled water system for temperature control in the units. The PTI requires continuous monitoring of the temperature of the SmogHog exhaust and limits the temperature to less than 130°F. Each process has an individual data logger for the continuous monitoring of the exhaust temperatures. The ESPs are interlocked with the processes such that production cannot begin, or continue, without the ESPs operating at the correct chiller temperature and exhaust gas temperature. Processes will automatically shut down if the ESPs begin operating out of range. Due to equipment malfunctions at the extruder in January 2019, changes made in data storage resulted in only one month's data storage. The manufacturer was contacted to extend the data collection going forward to 90 days. At the end of the month the facility will begin taking snapshots at the end of each month so that data is not lost. At the time of the inspection, Smog Hog #1 was operating at 98.62°F and unit #2 was at 117.4°F. I reviewed records for November 2019 and the first week of December 2019. The operating temperatures were below 130°F.

During the inspection, there was a haze in the plant surrounding the laminators. Mr. Matthews told me the plates in the Smog Hogs were getting plugged, because the material used to clean the laminators was coating them. The plates were replaced after my visit. They were ordered before I arrived. When I visited the plant on December 17<sup>th</sup>, 2019 there was still a haze in the plant. The facility said they were looking into procuring the replacement cost annually.

FGLAMINATORS is limited to no more than 7,000 hours and 3.8 tpy VOCs per 12 month rolling time period. VOC emissions are based on the yardage of each item. I reviewed usage records from January 2017 through October 2019. VOC emissions ranged from 0.88 tpy in January 2017 to 1.89 tpy in May 2019. For the 12-month rolling period ending August 2017 through the 12-month rolling time period ending February 2019 the plant appeared to exceed the restricted 7,000 hours for one of the two lines. Upon further discussions with Mr. Matthews the plant determined the production data collection had changed and it eliminated daily run hours and they had been substituted with back calculated run hours from pounds produced data. The data collection change has been made to record run data going forward. The plant provided maximum hours they could have operated, based off of payroll. According to this, the facility was under the 7,000 hours per line. The plant still needs to correct the 12-month rolling time period calculation to separate the lines from each other. It is a 7,000 hour limit per line, not a combined 14,000 hours.

#### FG-FACILITY: In Compliance

FG-Facility establishes minor HAP limits for the facility. This group consists of all equipment at the stationary source including equipment covered by other permits, grandfathered equipment and exempt equipment. This group establishes the opt-out limits for HAPs to keep this facility out of Title V at 9.0 tpy for each individual HAP and 22.5 tpy for the aggregate of HAPs. Two HAPs are listed at this facility, 2-(2-butoxyethoxy) ethanol and Phenol. I reviewed records from January 2017 through current. The individual emissions ranged from 1.7 tpy in December 2017 for Phenol to 6.4 tpy for 2-(2-butoxyethoxy) in October 2019.

NAME Gina R. McAnam

DATE 1/17/20

SUPERVISOR C. Hale