

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

B620245620

<b>FACILITY:</b> E-T-M Enterprises, Inc.	<b>SRN / ID:</b> B6202
<b>LOCATION:</b> 920 N. Clinton St., GRAND LEDGE	<b>DISTRICT:</b> Lansing
<b>CITY:</b> GRAND LEDGE	<b>COUNTY:</b> EATON
<b>CONTACT:</b> Ron Clewley , Quality Manager	<b>ACTIVITY DATE:</b> 08/15/2018
<b>STAFF:</b> Daniel McGeen	<b>COMPLIANCE STATUS:</b> Compliance
<b>SUBJECT:</b> Partial Compliance Evaluation (PCE) activities, conducted as part of a Full Compliance Evaluation (FCE): 1.) scheduled inspection, and 2.) review of facility recordkeeping.	
<b>RESOLVED COMPLAINTS:</b>	

**Emission Units:**

Order in report	Emission Unit* ID, and Flexible Group ID	Emission Unit description	ROP, Permit to Install (PTI) or exemption rule	Federal regulations, if applicable	Compliance Status
1.	EUFLINERBOOTH; FGMACTPPPP	Coating paint system consisting of solvent wipe/tack off, spray booth, flash off booth, and oven. Coating line used to coat plastic exterior automotive parts.	MI-ROP-B6202-2015	40 CFR Part 63, Subpart PPPP	Pending, regarding Method 24 condition
2.	EUBARRELMIXERS; FGPRESSANDMIXING	Two 300 lb capacity barrel mixers.	MI-ROP-B6202-2015	40 CFR Part 63, Subpart WWWWW	Compliance
3.	EUBATCHMIXER; FGPRESSANDMIXING	2,500 lb capacity batch mix tank.	MI-ROP-B6202-2015	40 CFR Part 63, Subpart WWWWW	Compliance
4.	EUHYDPRESSES; FGPRESSANDMIXING	A fiberglass parts manufacturing process with currently 18 hydraulic presses. Presses range in size from 50-1,000 tons. Presses utilize gel coat, fiberglass mat, and a catalyzed resin system to manufacture reinforced plastic composite parts.	MI-ROP-B6202-2015	40 CFR Part 63, Subpart WWWWW	Compliance
5.	EUBONDING; FGMACTPPPP	Bonding and gluing operations.	MI-ROP-B6202-2015	40 CFR Part 63, Subpart PPPP	Compliance
6.	EUSANDBOOTH; FGSANDGRINDROUT	Sanding booth for sanding plastic parts. Controlled by a dust collector.	MI-ROP-B6202-2015	NA	Compliance
7.	EUROUTING; FGSANDGRINDROUT	Routing operation for plastic parts 352-83. Controlled by 3 dust collectors.	MI-ROP-B6202-2015	NA	Compliance
8.	EUGRINDING; FGSANDGRINDROUT	Grinding operation for plastic parts 354-83. Controlled by a dust collector.	MI-ROP-B6202-2015	NA	Compliance
9.	EUSEALER; FGRULE290	Operation(s) where sealers are applied to plastic parts.	MI-ROP-B6202-2015	NA	Compliance
10.	EURTM; FGFIBERGLASS	Resin transfer molding (RTM) operation to manufacture reinforced plastic parts. The resin is applied and cured under vacuum in a closed mold.	PTI No. 50-15B	40 CFR Part 63, Subpart WWWWW	Compliance
11.	EUGELCOAT; FGFIBERGLASS	The application of gelcoats will be done in the open. However, the gel coat application for large parts may be done in a booth.	PTI No. 50-15B	40 CFR Part 63, Subpart WWWWW	Compliance
12.	EUGELCOAT2; FGFIBERGLASS	The application of gelcoats done in the positive pressure gelcoat booth.	PTI No. 50-15B	40 CFR Part 63, Subpart WWWWW	Not yet fully installed
13.	EUADHESIVE ; FGFIBERGLASS	Adhesive products used in the manufacturing of parts.	PTI No. 50-15B	40 CFR Part 63, Subpart WWWWW	Compliance
14.	EUCLEANUP; FGFIBERGLASS	Miscellaneous cleanup activities.	PTI No. 50-15B	40 CFR Part 63, Subpart WWWWW	Compliance
15.	EUMIXER; FGFIBERGLASS	Mixer associated with the reinforced plastic parts manufacturing process.	PTI No. 50-15B	40 CFR Part 63, Subpart WWWWW	Compliance

9/26/2018

\* An *emission unit* is any part of a stationary source that emits or has the potential to emit an air contaminant.

#### Flexible Group summary table:

Flexible Group ID	Flexible Group description	Associated Emission Unit IDs	ROP or PTI
FGPRESSANDMIXING	A reinforced plastic composite parts manufacturing process with 20 hydraulic presses. Presses range in size from 50-1,000 tons. Presses utilize gel-coat, fiberglass mat, and a catalyzed resin system. Two 300 lb barrel mixers and a 2,500 lb capacity batch mix tank are used to prepare the materials.	EUBARRELMIXERS, EUBATCHMIXER, EUHYDPRESSES	MI-ROP-B6202-2015
FGMACTPPPP	Each new, reconstructed, and existing affected source engaged in the surface coating of plastic parts and products, identified within each of the four subcategories listed in 40 CFR Part 63, Subpart PPPP, 63.4481(a)(2) to (5).	EUFLINERBOOTH, EUBONDING	MI-ROP-B6202-2015
FGSANDGRINDROUT	Sanding, routing, and grinding of plastic automotive parts.	EUSANDBOOTH, EROUTING, EUGRINDING	MI-ROP-B6202-2015
FGRULE290	Operation(s) where sealers are applied to plastic parts.	EUSEALER	MI-ROP-B6202-2015
FGFIBERGLASS	Resin transfer molding (RTM) and the associated gelcoat application process to manufacture reinforced plastic parts.	EURTM, EUGELCOAT, EUGELCOAT2, EUADHESIVE, EUCLEANUP, EUMIXER	PTI No. 50-15B
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.		PTI No. 50-15B

#### **Processes in ROP application which do not appear in ROP:**

Exempt Emission Unit ID	Description of exempt Emission Unit	Rule 212(4) exemption	Rule 201 exemption
EU001TANKS	Two 6,000 gallon tanks filled with resin containing styrene	Rule 212(4)(b)	Rule 284(i)
EU001BAKEOVEN	Bake oven used to cure molds	Rule 212(4)(c)	Rule 282(a)(i)

#### Introduction:

On 8/15/2018, the Michigan Department of Environmental Quality (DEQ), Air Quality Division (AQD) conducted a scheduled inspection of E-T-M Enterprises, Inc. (ETM). This facility was last inspected by AQD on 12/15/2015.

#### Environmental contacts:

Ron Clewley- Quality Manager, 517-627-8461 ext 1257, [ron.clewley@etmenterprises.com](mailto:ron.clewley@etmenterprises.com)  
 Jack Brockhaus- Technical Services Director, 517-925-1103, [jack.brockhaus@etmenterprises.com](mailto:jack.brockhaus@etmenterprises.com)

#### Facility description:

ETM manufactures reinforced plastic composite parts for trucks and agricultural machinery.

#### Regulatory overview:

ETM is not a major source for criteria pollutants, but it is a major source for hazardous air pollutants (HAPs). A major source for criteria pollutants has the potential to emit (PTE) of 100 tons per year (TPY) or more of any one of the criteria pollutants; that is, those pollutants for which a National Ambient Air Quality Standard (NAAQS) exist. These include carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds (VOCs) lead, particulate matter smaller than 10 microns (PM-10), and

particulate matter smaller than 2.5 microns (PM<sub>2.5</sub>). ETM has an opt-out permit, PTI No. 52-15B, which limits the PTE for VOCs to 99 TPY, to keep it from becoming a major source.

A major source for HAPs has the potential to emit 10 TPY or more of a single HAP, or 25 TPY of aggregate HAPs combined. ETM has the PTE to emit over 10 TPY of styrene, per the 3/3/2015 permit application for the original PTI No. 50-15. Because it is a major HAPs source, ETM is subject to the Renewable Operating Permit (ROP) program, and is regulated under ROP No. MI-ROP-B6202=2015. This will expire in five years, in 2020, and will need to be renewed.

On 7/9/2018, PTI No. 52-15B was issued for ETM. Upon renewal of the ROP, PTI No. 52-15B will be rolled into the ROP.

The Flexible group FG PRESSAND MIXING is subject to 40 CFR Part 63, Subparts A, *General Provisions*, and WWW, *National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production*.

The Flexible group FG MACT PPPP is subject to 40 CFR Part 63, Subparts A, *General Provisions*, and PPPP, *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products*.

There is a hot water heater onsite of less than 120 gallons in capacity. Per the 12/15/2015 inspection by AQD's Nathan Hude, it was initially thought to be a boiler subject to 40 CFR Part 63, Subpart DDDDD, *National Emissions Standards for Hazardous Air Pollutants For Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*. It was pointed out by a State of Michigan Licensing and Regulatory Affairs (LARA) inspector that the boiler met the exemption definition of a "Hot Water Heater" per the exemptions list in Section 63.7491(d) and the definition in Section 63.7575. It is therefore exempt from DDDDD.

#### Fee status:

ETM is not considered category I fee-subject, because it is not a major source for criteria air pollutants. However, it is considered category II fee-subject, because it is a major source for HAPs. Like other facilities in Michigan with opt-out permits, it reports air emissions annually, through the Michigan Air Emissions Reporting System (MAERS).

#### Location:

ETM is located on the north end of Grand Ledge, in Eaton County. Residential areas are located to the south and west of the facility, with some homes to the north. To the north and north east of the plant is a mostly industrial area, followed by fields and a few residences. The closest residences to ETM are about 175 feet to the south of the plant, 125 feet to the west, 630 feet to the north, and about 800 feet to the east or southeast, as measured in Google Maps.

#### Recent history:

On 7/9/2018, PTI No. 50-15B was issued, allowing ETM to install a new gelcoat booth, EUGELCOAT2. This replaced the previous PTI, No. 50-15A. The new PTI limits ETM Enterprises' potential to emit of VOCs, to keep it from becoming a major source for this criteria pollutant. This facility continues to remain a major source for HAPs, because it has a PTE of over 10 TPY for styrene.

Changes authorized by PTI No. 50-15B include:

- Addition of emission unit EUGELCOAT2 and associated stack SVBOOTH-2.
- Increased VOC emission limit from 6.2 TPY to 14.3 TPY.
- Added acetone emission limit of 9.5 TPY.
- Increased material limit of EURTM neat resin from 230,000 lbs/year to 723,624 lbs/year.
- Added material limits for clear gelcoat.

- Added source-wide material limit for styrene to the flexible group FGFACILITY.

**Note:** The existing ROP, MI-ROP-B6202-2015, contains a styrene emission limit of 26.3 TPY in FGPRESSANDMIXING. PTI No. 50-15B contains a VOC emission limit of 14.3 TPY in FGFIBERGLASS. Assuming all VOC emissions from fiberglass are styrene, source wide PTE for styrene is 26.3 TPY + 14.3 TPY = 40.6 TPY.

**Safety apparel required:**

Safety glasses and ear plugs, and, for going near the VARTM equipment, hard hats.

**Odor evaluation:**

I conducted an odor evaluation in the area around the plant, before arrival. Distinct and definite styrene odors were detected immediately north of the plant on Frances Road, for a few hundred feet as I drove eastward. I turned around and detected the same odors as I drove westward along the same stretch of road. Weather conditions were 75 degrees F, humid, and hazy, with wind 5-10 miles per hour out of the south southwest. At this time, these odors were not determined to be causing a violation of Rule 901(b), which prohibits unreasonable interference with the comfortable enjoyment of life and property. I could not see any visible emissions from the plant.

**Arrival:**

In order to allow DEQ Student Interns to come along on an actual inspection of a regulated facility, for educational purposes, this inspection was arranged with the company in advance, for 9:00 AM on 8/15/2018. The interns were not able to attend, however. Following the odor evaluation discussed above, I arrived at the plant at 9:03 AM. I could not detect any odors in the plant parking lot next to the office, nor could I see any visible emissions.

I met with Mr. Ron Clewley, Quality manager, Mr. Jack Brockhaus, Technical Services Director, and with Mr. Steve Mohnke, President. Mr. Clewley and Mr. Brockhaus accompanied me on the inspection. I was told that sales are picking up on existing products, and they are working on installing EUGELCOAT2, which will allow them to work on new projects. The new projects include two hoods, a grill, and side panels for John Deere.

Mr. Clewley provided me with hardcopies of spreadsheets for ETM's recordkeeping under the ROP and PTI No. 50-15 A for the 2017 calendar year, and into February 2018; please see attached. These spreadsheets predate the 6/28/2018 PTI No. 50-15B.

**Inspection:**

ETM manufactures and coats reinforced plastic composite parts used in the motor transport industry. Manufacturing processes include resin storage and preparation, compression molding of resins into plastic parts, parts trimming and sanding, and surface coating and drying. VOCs are emitted from the coating of the plastic exterior automotive parts and also from manufacture of the plastic parts.

It is my understanding that there are 4 kinds of processes for manufacturing parts here:

1. Cold molding (liquid compression molding)
2. Sheet Molding Compound (SMC)
3. Bulk Molding Compound (BMC)
4. Vacuum Assisted Resin Transfer Molding (VARTM)

We walked through the plant, and observed the emission units below. The order below reflects the ROP and the PTI, rather than the chronological order in which we examined these processes as we walked through the plant itself.

**1. EUFLINERBOOTH; FGMACTPPPP; MI-ROP-B6202-2015:**

The F Liner or Freight Liner booth is a coating paint system consisting of solvent wipe/tack off, spray booth, flash off booth, and oven. Coating line used to coat plastic exterior automotive parts. I was informed that it is mostly used to apply primer, either black or gray.

The F Liner booth was not running when we examined it just after 10:30 AM, as workers had left on their lunch breaks. I was told that all parts are hand-sprayed in the booth. It is a downdraft booth, with air intake filters in the ceiling, and exhaust filters in the floor. I was told that the filters are changed about once per month, and the date of changing is recorded. Pressure drop for the booth was 0.1 inches water column (w.c.), at this time. To purge the spray guns, I was shown lidded containers which they spray lacquer thinner "C-1" into.

The booth is designed like a tunnel, and has a floor-mounted chain on edge conveyor system to move parts through the booth. It also has a flash off area, an oven, and a cool down area attached. I observed a temperature chart recorder for the oven, with a set point of 170 degrees F and an actual reading of 169 degrees F. The booth is served by exhaust stacks Nos. 5-8. There were no visible emissions, although as mentioned earlier, no parts were being coated while workers were on their lunch break. Stacks Nos. 1-4 were removed years ago, when an associated coating booth was removed and sold to Demmer Corporation.

In the MAERS report for the 2017 operating year, and the attached spreadsheets provided by ETM, EU016 (FGPLANT1PAINTING) VOC emissions were 2.05 tons; below the EUFLINERBOOTH limit in the ROP of 85.0 TPY VOC.

The ROP Special Condition (SC) EUFLINERBOOTH I. EMISSION LIMIT(S) 1. limits VOC emissions to 63.3 lbs/hr. As of December 2017, their hourly emissions were 1.62 lbs/hr, well below the limit.

The ROP Special Condition (SC) EUFLINERBOOTH I. EMISSION LIMIT(S) 2. limits VOC emissions to 8.0 tons per month. For the 2017 operating year, the annual emissions of VOCs were 2.05 tons, so any given month would be no greater than 2.05 tons, below the 8 tons per month limit.

The ROP Special Condition (SC) EUFLINERBOOTH I. EMISSION LIMIT(S) 3. limits VOC emissions to 85.0 TPY. For the 2017 operating year, annual VOC emissions were 2.05 tons, far below the 85.0 TPY limit.

B. Under SC FLINERBOOTH MATERIAL LIMIT(S) 2., there are 10 different materials which are limited to VOC content, on pages 15-16 of the ROP. They are listed below, though I have not tried to copy the several foot notes for the Material Limit(s) table:

1. Prime-Flexible Coating: 4.5 lbs VOC/gal of coating (minus water) as applied (GAC)
2. Prime-Non Flexible category: 3.5 lbs VOC/GAC
3. Topcoat-Basecoat Category: 4.3 lbs VOC/GAC
4. Topcoat-Clearcoat Coating: 4.0 lbs VOC/GAC
5. Topcoat-Non-Basecoat/Clearcoat Coating: 4.3 lbs VOC/GAC
6. Prime coating: 4.8 lbs VOC/GAC
7. Topcoat-Basecoat Coating: 5.0 lbs VOC/GAC
8. Topcoat-Clearcoat Coating: 4.5 lbs VOC/GAC
9. Topcoat-Non-Basecoat/Clearcoat Coating: 5.0 lbs VOC/GAC
10. Touch-up and repair coatings: 5.2 lbs VOC/GAC

On 9/25/2018, I asked Mr. Clewley if their coatings are complying with the limits above, taking into account the special variations on the limits for red and black coatings. He sent an attached spreadsheet for 8/24/2018, which showed that on 4/5/2018, they used Safety Data Sheets (SDS) to verify that VOC content was in compliance for their coatings.

**EUFLINER and Method 24 discussion:**

Mr. Clewley asked about the version of the Method 24 Special Condition in their ROP, for EUFLINER. The language in this condition did not appear consistent with other ROPs, as it required the testing for VOC content of the 5 most frequently used coatings plus 5 random coatings, using Method 24, on an annual basis.

Subsequent follow up involved review of three different PTIs which were issued to ETM for coating operations during the 1990s, to try to determine if the language came from a PTI. The PTIs contained the more common version of the Method 24 condition, however. (One PTI was for the Freight Liner booth, as it was evidently called at that time, PTI No. 178-80A. It existed at the same time as PTI No. 178-80, which had not been voided, despite an A version being issued. The third coating PTI was No. 617-94. Ultimately, the original 178-80, and 617-94 were merged into 178-80A.)

Subsequent to this, discussion with AQD ROP modification expert Caryn Owens of the AQD Cadillac District Office revealed that about 14 years ago, AQD staff were instructed to put this more stringent condition into ROPs. It is not clear at this time if the condition can be removed from the ROP and replaced with the previous version of the Method 24 condition. Further internal discussion is necessary. At this moment, ETM's compliance status with this SC is considered pending.

SC FLINERBOOTH VI. MONITORING/RECORDKEEPING 1. through 5. requires several different records to be kept on the coatings they utilize. It is my understanding that they are keeping these records, and will do so for the required period of 5 years.

## 2. EUBARRELMIXERS; FG PRESSANDMIXING; MI-ROP-B6202-2015:

Two 300 lb capacity barrel mixers. This is subject to 40 CFR Part 63 Subpart WWWW. I was shown the mixers, where polyester resin is mixed. I was advised that they add a filler, calcium carbonate, to the resin most of the time, making up about 50% of the total volume. I was told that this reduces cost, shrinkage, and heat generated as the resin cures. I was also informed that for fan shrouds, carbon black pigment is added to the mix.

Flexible Group FG PRESSANDMIXING reporting requirements are discussed below. In AQD inspector Nathan Hude's 12/15/2015 inspection report, he observed that from what he could tell, all of the monitoring and recordkeeping requirements of the ROP mimicked Subpart WWWW.

Page 13 of the attached spreadsheet is titled FG PRESSMIXING, and is for the month of February, 2018. It was used to check compliance with the ROP special conditions for FG PRESSANDMIXING, below.

SC FG PRESSANDMIXING I. EMISSION LIMIT(S) 1. limits VOC emissions from this flexible group to 16.5 lbs/hr from clean-up solvents. For February 2018, over a 12-month rolling time period, VOC emissions from clean-up solvents were 0.69 lbs/hr, well below the limit.

SC FG PRESSANDMIXING I. EMISSION LIMIT(S) 2. limits VOC emissions from this flexible group to 17.4 TPY from clean-up solvents. For February 2018, over a 12-month rolling time period, VOC emissions from clean-up solvents were 0.10 tons, well below the limit.

SC FG PRESSANDMIXING I. EMISSION LIMIT(S) 3. limits styrene emissions from this flexible group to 10.5 lbs/hr. For February 2018, styrene emissions averaged 2.21 lbs/hr, well below the limit.

SC FG PRESSANDMIXING I. EMISSION LIMIT(S) 4. limits styrene emissions from this flexible group to 26.3 TPY. For February 2018, the 12-month rolling value for styrene emissions was 1.92 tons styrene, well below the limit. From the 2017 MAERS report and the spreadsheet titled *2017 Data for The MAERS Report*, EU0014 (FG PRESSANDMIXING) had styrene emissions of 2.54 tons, also below the 26.3 TPY limit.

SC FG PRESSANDMIXING II. MATERIAL LIMIT(S) 1. limits use of polyester resin in this flexible group to 1,500 lbs/hr. For February, 2018, average polyester resin used was 1,315.00 lbs/hr, below the permitted maximum.

**SC FG PRESSANDMIXING II. MATERIAL LIMIT(S) 2.** limits use of polyester resin in this flexible group to 28,000 lbs/day. For February, 2018, the daily mixed polyester resin used was 10,520 lbs/day, below the permitted maximum.

**SC FG PRESSANDMIXING II. MATERIAL LIMIT(S) 3.** limits use of polyester resin in this flexible group to 7,500,000 lbs/year. From the spreadsheet titled *2017 Data For The MAERS Report*, the polyester resin used was 2,169,600 lbs, below the permitted maximum.

**SC FG PRESSANDMIXING III. PROCESS/OPERATIONAL RESTRICTION(S) 1.** requires that only styrene resins be used in the process with a maximum styrene content of 40.0 percent by weight. I could not find this in the spreadsheets for molding, just gelcoats for EURT/VARTM, which are subject to a different styrene content limit (up to 42%). I asked the company, on 9/25/2018, and Mr. Clewly sent the attached spreadsheet, dated 8/24/2018. He indicated that molding resin falls under the 40% maximum styrene limit. He also advised that resin for the VARTM process is subject to and complies with a different styrene limit (50% styrene), and that some of the gelcoats for VARTM are subject to a limit higher than 40% (42.0% for pigmented gelcoat) but are below it.

**SC FG PRESSANDMIXING III. PROCESS/OPERATIONAL RESTRICTION(S) 2.** requires the permittee to comply with applicable emission limits and work practice standards specified in Table 1 through 5 of 40 CFR Part 63, Subpart WWWW. As stated by AQD inspector Nathan Hude's in his 12/15/2015 inspection activity report:

*Table 1 is regarding requirements for "open molding and centrifugal", ETM is all closed molding and thus this table does not apply. Table 2 is regarding compliance dates which are complete. Table 3 is regarding requirements for "open molding and centrifugal", ETM is all closed molding and thus this table does not apply. Table 4 is regarding "work practice standards", although I did not see the line operating, I was able to confirm compliance with many aspects of this table by questioning ETMs techniques. Table 5 is an alternate to the 95% HAP reduction requirement option, which does not apply to ETM.*

I did not review work practice standards per Table 4., during today's inspection of ETM. This will be focused on, during the next inspection I do at ETM.

**SC FG PRESSANDMIXING VI. MONITORING/RECORDKEEPING 1.** requires the permittee to maintain records of the following on a daily and monthly basis:

a. Hours of operation. The FG PRESSANDMIXING spreadsheet for February 2018 shows 160 hours worked for the month.

b. Lbs of polyester resin and gel-coat used. The FG PRESSANDMIXING spreadsheet for February 2018 shows daily and monthly lbs of neat resin used, and and monthly lbs of mixed resin used, which is equal to the amount of neat resin used X 2, for a 50/50 mix.

### 3. EUBATCHMIXER; FG PRESSANDMIXING; MI-ROP-B6202-2015 :

This is a 2,500 lb capacity batch mix tank. It is subject to 40 CFR Part 63 Subpart WWWW. I did not observe any visible emissions from this tank.

Please see the Flexible Group FG PRESSANDMIXING recordkeeping discussion, above, under item 2., EUBARRELMIXERS.

### 4. EUHYDPRESSES; FG PRESSANDMIXING; MI-ROP-B6202-2015:

This is a fiberglass parts manufacturing process with 18 hydraulic presses, I was told (20 were identified in the ROP at the time of renewal in 2015). The presses range in size from 50-1,000 tons. Presses utilize

gelcoat, fiberglass mat, and a catalyzed resin system to manufacture reinforced plastic composite parts.

We observed fiberglass cloth being inserted into mold press #5. The press was brought down, and heat was applied to help shape the cloth. A measured amount of resin in a bucket was mixed with a catalyst. For products which have a flame requirement, they add aluminum trihydrate, ATH, instead of calcium carbonate, I was informed. After the bucket was poured into the mold, the press was lowered. I was advised that the molds are kept at a uniform temperature, and the chemical reaction of the ingredients creates heat. The amount of heat depends on the materials, and the part being made, I was told, with some reactions reaching 300 degree F. I could not see visible emissions from the mixing of resin with catalyst, nor from the operation of the press.

This process is subject to 40 CFR Part 63 Subpart WWWW.

Please see the Flexible Group FG PRESS AND MIXING recordkeeping discussion, above, under item 2., EUBARRELMIXERS.

I was shown that they have one router robot, in addition to eight dual-stage water jets which perform cutting of parts.

**5. EUBONDING; FGMACTPPPP; MI-ROP-B6202-2015:**

Bonding and gluing operations, subject to 40 CFR Part 63, Subpart PPPP.

**6. EUSANDBOOTH; FGSANDGRINDROUT; MI-ROP-B6202-2015:**

Sanding booth for sanding plastic parts. Controlled by a dust collector. Per the 12/15/2015 inspection report by AQD's Nathan Hude, this booth has been dismantled.

**7. EUROUTING; FGSANDGRINDROUT; MI-ROP-B6202-2015:**

Routing operation for plastic parts 352-83. Controlled by 3 dust collectors. This unit is located on the far east end of the building. This is a booth that is approximately 60 feet long by 25 feet wide with openings on the shorter ends. It has approx. 6 stations on each side for individuals to sand fiberglass parts by mechanical hand sanders. There are 3 Torit Down Flo dust collectors which exhaust the booth. The air intakes are on the side walls (east and west) of the booth. The Torits are located outside, along the east wall of the plant.

1. Torit Down Flo collector No. 1 exhausts outdoors. There were no visible emissions from the exhaust outlet. Pressure drop was 2.6 inches, water column (w.c.). Collected particulate is ducted into a covered 55 gallon drum. Housekeeping appeared good, in that there was no spilled material around the drum.
2. Torit Down Flo collector No. 2 exhausts outdoors. There were no visible emissions from the exhaust outlet. Pressure drop was 2.2 inches, w.c. Collected particulate is ducted into a covered 55 gallon drum. Housekeeping appeared good.
3. Torit Down Flo collector No. 3 exhausts back into the indoor plant environment. There were no visible emissions. Pressure drop was 3.4 inches, water column (w.c.). Collected particulate is ducted into 3 covered 55 gallon drums. Housekeeping appeared good. I was told that they check the 55 gallon drums for all 3 Torits twice per month, to make sure they do not overflow.

When we went into the prep area itself, at 10:30 AM, we could see that the prep workers had left for their lunch. It was not known if any work was being done in the prep booth when we had been outside, examining the Torit dust collectors. Prep work done here includes patching, repairing, and scuffing of parts, I was told. Scuffing of parts is sometimes done to promote paint adhesion, I was advised.

**8. EUGRINDING; FGSANDGRINDROUT; MI-ROP-B6202-2015:**

Grinding operation for plastic parts 354-83. Controlled by a dust collector. I was shown a routing process enclosed in a large room. Emissions are vented through a duct to a large dust collector located



outdoors, which then exhausts back into the general, in-plant environment. I could not see any visible emissions from the exhaust outlet. The router was not in use at this moment. I was told that they would like to remove this process from the ROP as permit exempt. This process does not appear to be to be MACT-subject, so I am not aware of any obstacle to removing it from the ROP.

**9. EUSEALER; FGRULE290; MI-ROP-B6202-2015:**

Operation(s) where sealers are applied to plastic parts.

**10. EURTM; FGFIBERGLASS; PTI No. 50-15B:**

Resin transfer molding (RTM) operation to manufacture reinforced plastic parts. The resin is applied and cured under vacuum in a closed mold. These are called Vacuum Assisted Resin Transfer Molding, or VARTM, processes.

It was explained to me that fiberglass cloth is put in a mold, the mold is closed, and a vacuum is drawn from the mold. At this point, the resin is delivered to the mold. I was shown one mold with resin in it, and another mold where a part was being removed. I was informed that VARTM is a slower process, and they sometimes use it for new parts, until there is demand for a higher volume of that part. A benefit of the VARTM process is high quality parts, I was told, as a gelcoat is applied, and the fiberglass is put in the mold by hand.

RTM processes were being flushed out with acetone. It is my understanding that the waste acetone and resin are routed to closed containers, and that the resin solidifies as a solid waste, over time, while the acetone goes to satellite collection barrels to be sent offsite as hazardous waste. The acetone is therefore used, but not emitted at the plant.

Mr. Clewley inquired as to properly calculating acetone mass emissions, per a requirement of the PTI No. 50-15B, and what an appropriate emission factor would be. Please see discussion near the end of this activity report.

In the MAERS report for the 2017 operating year, and the attached spreadsheets, EU0020 (EUVARTM&GelCoat) reported emissions of 0.317 tons styrene. Assuming styrene emissions are also VOC, this is below the 6.2 TPY VOC limit for FGFIBERGLASS which was in effect during 2017, under PTI No. 50-15A.

The material throughput for neat resin for the VARTM process in 2017 was 51,459.51 lbs, below the 230,000 lbs per year of resin EURTM was allowed to use under PTI No. 50-15A, which was in effect for all of 2017.

Note: The 2017 operating year predated the 6/28/2018 effective date of PTI No. 50-15B, which sets a facility-wide styrene limit of 40.6 TPY.

PTI No. 50-15B, SC FGFIBERGLASS II. MATERIAL LIMITS: 1. states that the styrene content of any resin used in EURTM shall not exceed 50% by weight. On 9/25/2018, Mr. Clewley advised that the styrene content of the resin used in the VARTM process is below this 50% limit.

PTI No. 50-15B, SC FGFIBERGLASS II. MATERIAL LIMITS: 2. limits the use of neat resin in EURTM per 12-month rolling time period as determined at the end of each calendar month to 723,624 lbs/year. In December 2017, the 12-month rolling value for neat resin used in VARTM was 51459.51 lbs, below the limit in the current PTI.

PTI No. 50-15B, SC FGFIBERGLASS II. MATERIAL LIMITS: 3. a. through c. limit maximum styrene content in gelcoat to 26.1% for white gelcoat, 42.0% for pigmented gelcoat, and 40.0% for clear gelcoat. Mr. Clewley indicated that their gelcoats fall under the VARTM limits. A review of the gelcoat styrene content from the 2017 spreadsheet, page 9 verified this.

**11. EUGELCOAT; FGFIBERGLASS; PTI No. 50-15B:**

The application of gelcoats can be done in the open., or in a ventilated booth, approximately 12 feet by 12 feet in size. I was told that it was not a positive pressure booth. The booth was not in use at the moment. It has filters for incoming air, and for air being exhausted to the outside of the plant. The filters appeared to be in good shape. It is my understanding that some gelcoats are primer gelcoats, while others are sanding or finishing gel coats.

In the MAERS report for the 2017 operating year, and the attached spreadsheets, EU0020 (EUVARTM&GelCoat) reported emissions of 0.317 tons styrene. Assuming styrene emissions are also VOC, this is below the 6.2 TPY VOC limit which was in effect for EURLTM during 2017, under PTI No. 50-15A.

Note: The 2017 operating year predated the 6/28/2018 effective date of PTI No. 50-15B, which sets a styrene limit of 40.6 TPY for FGFACILITY.

**12. EUGELCOAT2; FGFIBERGLASS; PTI No. 50-15B:**

I was shown EUGELCOAT2 under construction. This will be a positive pressure gelcoat booth. Wiring was being done, and I was told they would be installing explosion proof housings for the lights, and that a pressure drop gauge will be installed. The exhaust stack is to be 4 feet taller than initially planned, I was informed. AQD will be informed when construction is completed/when this booth commences operations, I was told, as this is a requirement of the PTI.

I was advised that on 8/20/2018, they would be fire up the heaters of the booth for the first time. The booth will be heated to a temperature of 85-90 degrees F when operating, I was told, and ETM will order venturi cooling vests for employees to wear. It is my understanding that this booth will be used to apply clear coats, color coats, and a print blocker coat. Large filter banks will clean exhaust air, I was told, and overhead filters will clean incoming air from outside of the plant. I was advised that clear sheets of a peel-apply material will be used to keep the walls of the booth clean, and a clear material will be used to keep the lights clean, as well.

Note: On 8/17/2018, AQD received e-mailed notification of completion of construction/commencement of trial operation of EUGELCOAT2, under PTI No. 50-15b, Special Condition No. VII. 1. This requirement appears to have been satisfied.

On 8/22/2018, AQD received a completed M-001 form for a Rule 215 Change Notification and C-001 Certification form, as notification that EUGELCOAT2 is now operational. The M-001 form was for a Rule 215(3) Notification of change.

**13. EUADHESIVE; FGFIBERGLASS; PTI No. 50-15B:**

An acrylic adhesive products is used to glue fiberglass parts to other fiberglass materials.

**14. EUCLEANUP; FGFIBERGLASS; PTI No. 50-15B:**

Miscellaneous cleanup activities.

**15. EUMIXER; FIBERGLASS; PTI No. 50-15B:**

Mixer associated with the reinforced plastic parts manufacturing process.

Flexible Groups not covered in discussions on individual emission units:

FGFACILITY; PTI No. 50-15B:

This flexible group covers all process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment. PTI No. 50-15B, which will be rolled into the ROP on the next renewal unless it is done sooner as a ROP modification, limits FGFACILITY VOC emissions to 99.0 TPY, and limits plant-wide styrene emissions to 40.6 TPY. The 2017 operating year spreadsheets and the 2017 operating year MAERS report show that VOC emissions for 2017 were 2.62 tons, and styrene emissions were 2.86 tons, well below the respective limits.

Processes exempt from needing a PTI and exempt from appearing in ROP:

EU001TANKS; Rule 284(i):

There are two 6,000 gallon tanks filled with resin which contain polyester resin, I was told. I did not examine them during this inspection.

EU001BAKEOVEN; Rule 282(i):

This is a bake oven used to cure molds. I did not examine the bake oven during the inspection.

Miscellaneous:

There is wash booth, for any parts which are stored outside, so that they can be washed with water, prior to being sent to the customer. It is my understanding that city water is used, with no detergent or surfactant added. I believe this would be considered exempt under Rule 281(2)(e), which exempts:

(e) Equipment used for washing or drying materials, where the material itself cannot become an air contaminant, if no volatile organic compounds that have a vapor pressure greater than 0.1 millimeter of mercury at standard conditions are used in the process and no oil or solid fuel is burned.

Annual deviation reports discussion:

Mr. Clewley has also inquired about annual deviation reports. ETM has not submitted them to the USEPA the past few years, only to AQD. They inquired if AQD forwards this information to EPA or if they need to mail it. Per the language in the ROP, this information should be mailed to the EPA Region V address listed in the ROP Special Conditions.

Discussion on mass acetone emission calculations:

Mr. Clewley inquired, at the end of the inspection, about doing mass acetone emission calculations for the new PTI, No. 50-15B. Since their acetone used for purging spray guns and lines goes into closed containers, he inquired if their acetone emissions would be equal to zero, or if there is an emission factor they should use. Because the closed, lidded containers are removed from the site for proper disposal, the acetone is not allowed to evaporate onsite.

During a subsequent conference call on 8/28/2018, AQD inspector Bob Byrnes and I discussed this question with Mr. Clewley. B. Byrnes explained that for a cleanup material like acetone, a mass balance is generally used instead of an emission factor. Under PTI No. 50-15B, the flexible group FGFIBERGLASS includes the following emission units: EURLT, EUGELCOAT, EUGELCOAT2, EUADHESIVE, EUCLEANUP, and EUMIXER. FGFIBERGLASS has an acetone emission limit of 9.5 TPY. Acetone used, in this case, does not mean that all the acetone used is being emitted, since it is being removed from the site in closed containers for proper disposal. If their usage of acetone for an operating year is less than 9.5 TPY, then it is very clear that they could not emit more than 9.5 TPY, even if 100% of it evaporated. Bob advised that if their acetone use over a year actually approaches 9.5 TPY, then they could start subtracting the volume of acetone sent offsite for recycling, to prove that actual acetone emissions were below the permitted limit.

MAERS reporting:

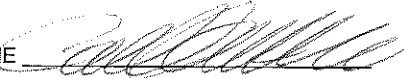
MAERS report for the 2017 operating year was received timely and complete, on 2/7/2018. EU0014 (FGPRESSANDMIXING) reported emissions of 0.56 tons VOC, below the ROP limit for FGPRESSANDMIXING of 17.4 TPY VOC. EU0014 styrene emissions were reported as 2.54 tons; below the FGPRESSANDMIXING styrene limit of 26.3 TPY. EU0020 (EUVARTM&GelCoat) reported emissions of 0.317 tons styrene; also below the 26.3 TPY styrene limit. EU016 (FGPLANT1PAINTING) reported VOC emissions of 2.05 tons; below EUFLINERBOOTH limit in ROP of 85.0 TPY VOC.

**Conclusion:**

There were no instances of noncompliance found; however, compliance status is pending, regarding the FLINERBOOTH SC EUFLINERBOOTH No. V. 1, which references Method 24.

Subsequent to this, discussion with AQD ROP modification expert Caryn Owens of the AQD Cadillac District Office revealed that about 14 years ago, AQD staff were instructed to put this more stringent condition into ROPs. It is not clear at this time if the condition can be removed from the ROP and replaced with the previous version of the Method 24 condition. Further internal discussion is necessary. At this moment, ETM's compliance status with this SC is considered pending.

NAME



DATE

9/26/2018

SUPERVISOR

