

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

N132851697

FACILITY: Rec Boat Holdings LLC - Cruiser Plant		SRN / ID: N1328
LOCATION: 609 13 TH. St., CADILLAC		DISTRICT: Gaylord
CITY: CADILLAC		COUNTY: WEXFORD
CONTACT: Trent Burch , Environmental/Safety Compliance		ACTIVITY DATE: 12/06/2019
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced, scheduled site inspection for FY2020.		
RESOLVED COMPLAINTS:		

INTRODUCTION

On December 6, 2019, AQD Staff conducted a site inspection of Rec Boat Holdings, LLC-Cruiser Division (N1328). The referenced facility is located at 609 13th Street, Cadillac, Wexford County, Michigan. AQD Staff met with Mr. Trent Burch, Environmental/Safety Compliance for the facility.

The referenced facility operates under Renewable Operating Permit (ROP) MI-ROP-N1328-2016. The referenced ROP was issued on July 6, 2016, and expires in 2021. A complete renewal application should be submitted between January 6, 2020 and January 6, 2021.

The last two scheduled site inspections were conducted on June 14, 2016 and March 16, 2018. The facility was reported to be in compliance with their permit at the time of both inspections.

FACILITY

The facility is an ungated facility, located in an industrial park in Cadillac, Michigan. Located at the SW corner of the intersection of West 13th Street and 6th Avenue, the property is bounded to the north across 13th Street and east along 13th Street by residential properties. To the NW of the facility is St. Ann Elementary School. Properties to the south and west of the facility include other industrial facilities.

Production onsite began in approximately 1985. The facility has expanded since that time and has purchased adjacent properties, including an adjacent cabinet shop in appx. 2005 and an adjacent building to the south in 2006-2007. The expansions allowed the facility to expand not only their production area, but to add pools to test their product in, and expand shipping and storage space. Rec Boats now makes use of a total of 9 locations ranging from an engine warehouse, to a rental location referred to as the Warranty Bldg.

Other permitted locations associated with the Facility/Company includes:

- The Rec Boats LLC – Sport (N1470) (925 Frisbie Street, Cadillac)
- Trailer Divisions (N1772) (1552 Miltner Street, Cadillac)

The two Facilities are located within 0.5-mile and 1-mile radius of the Cruiser Division, respectively.

In 2009, due to decreased sales Rec Boat Holdings LLC transferred production in the Sport Plant to the Cruiser Plant. Based on discussions during the March 16, 2018, site inspection, it was indicated that increasing sales had reached a point where production of the smaller boats would be returning to the nearby sport plant. Hours of operation for the facility have ranged from 10-15 hours/day depending on orders. Since the 2018 site inspection at the Sport Plant, "sport boat" production has completed transfer to the sport plant.

Rec Boat Holdings LLC, was purchased in 2014 by Beneteau Group, a French company, but still is legally operating as Rec Boat Holdings LLC. At the time of the December 6, 2019, site inspection, the signage associated with the Facility has changed to reflect the Beneteau Group (AKA Groupe Beneteau).

The facility manufactures boats for six different brands:

- Four Winns,
- Wellcraft,
- Glastron,
- Scarab,
- Jeanneau, and
- Bennetau.

Each boat constructed onsite is a custom/special order and uses one of over 70 different models/forms which with over 40 different modification choices results in over 100 different configurations.

Production begins in the lamination section of the facility and ends with finished boats in the pool for testing and others ready for wrapping prior to storage and shipping. The process begins with application of fiberglass (EULAMINATION) and gel coats (EUGELCOAT) onto molds (FGOPENMOLDING), the finished boat component is removed from the mold and is ground at the edges and cutouts completed (EUGRINDBOOTH) prior to assembly. All stages of production and assembly are conducted onsite, with each boat moving thru the various stages of production. The pace is dependent on the size, number of colors, and other components of the special order. Production at the plant has ranged from 3-6 production "lines". Cleanup activities utilize acetone (EUACETONECLEANUP). The facility also makes use of adhesives (EUADHESIVES) during boat assembly.

None of the process applications are atomized, materials are pumped with no air added. Materials used during the process included (but are not limited to) resin, gelcoat, flotation foams, adhesives and cleanup solvents. Curing occurs between each stage, and results from the chemical reaction occurs at ambient temperature. Cutting and grinding are conducted in special booths (EUGRINDCUTBOOTH). A dust collection system is associated with each of the three grinding and cutout booths (EUGRINDCUTBOOTH) and a magnahelic gauge is associated with the dust collection system for one. The other two have electronic differential pressure readers, which are monitored via computer. The dust collection system vents into the general work area.

Air collection devices (plenums) with filters to control any particulate generated in the general work area are vented out one of 5 stacks associated with the facility. Each plenum gets turned on when a work area is in use. Each fabric filter is monitored, with at least a weekly visual check. None of the 5 plenums and their associated fabric filters were reported to have a magnahelic gauge associated with them. Particulate captured consists primarily of that generated in the lamination and gelcoating processes.

Gelcoat is received in 55-gallon drums weekly or biweekly, and resins by tanker on average twice per week. The onsite lab tests the materials for quality control, and maintains records documenting the chemical composition (certified product data sheets) of all the materials. Every shipment of production resin (EULAMINATION, EUGELCOAT) includes a certificate of analysis indicating the chemical composition of the materials.

Changes at the Facility, in addition to transfer of production of "sport" boats, included use of Resin Transfer Molding (EURTM) for production of small parts, as well as filled resins in the "Cruiser" plant.

Heat is provided by natural gas fired heaters. The facility reports not having an emergency generator or other reciprocating internal combustion engine onsite.

Weather conditions at the time of the inspection were overcast, with light winds. No visible emissions were noted from stacks associated with the site.

EQUIPMENT/MATERIAL DESCRIPTION

In comparison with other facilities which operate specific pieces of equipment (ex. turbines, boilers, dehydrators) that require permitting the Rec Boat LLC – Cruiser Division consists of work stations along production lines utilizing materials which are sources of emissions. Discussions with permit staff, and a review of historic files indicated that to allow the facility the maximum flexibility, the number of independent stations under each emission unit is open, as is the location of those work stations within the facility.

PERMITTING

At the time of the inspection, all permits associated with the facility have been rolled into MI-ROP-N1328-2016. There have been no additional permits issued or permit modifications proposed since issuance of the ROP.

REGULATORY

The facility is a Major for VOCs, with the potential to emit of over 100 tons/yr. The source is also considered major for HAPs (>10 tons/yr). There are no control devices onsite for VOCs, therefore CAM is not applicable. In 2004, the facility took a source -wide limit of 225 ton/yr VOC, which resulted in the source becoming a non- Potential for Significant Deterioration (PSD) source.

Classifications based on Potential to Emit (PTE):

PARAMETER	CLASSIFICATION	COMMENT
NOx	Minor	
SO2	Minor	
CO	Minor	
Pb	Minor	
PM	Minor	
VOC	Major	Synthetic Minor for PSD (source wide limit of 225 tpy)
HAPs	Major	

Applicable Federal Requirements:

EMISSION UNIT	40 CFR SUBPART	TITLE
Source	Part 70	State Operating Permit Program
Source	52.21	PSD
Source	Part 63, Subpart A and WWWW	National Emission Standards for HAPs (NESHAP) Reinforced Plastic Composites Production*
FGOPENMOLDING (EULAMINATION & EUGELCOAT), EUVOCCLEANUP, EUADHESIVE, FGMIXING (EURESINMIXING & EUGELCOATING)	Part 63, Subpart A and VVVV	NESHAP for Boat Manufacturing (compliance date August 23, 2004)

*Limited to manufacture of fiberglass reinforced parts for boats manufactured outside of the stationary source. At the time of the inspection, this this federal requirement was not applicable.

COMPLIANCE

Since the March 16, 2018, scheduled inspection no complaints were received or Violation Notices (VNs) were issued. No Consent Orders are of record for the facility.

Compliance status for the facility had been based on information provided during the March 16, 2018, site inspection, as well as on supplemental data and reports submitted upon request or to meet permit requirements identified in MI-ROP-N1328-2016.

At the time of the March 16, 2018, site inspection the Facility reported that Resin Transfer Molding (RTM) was not in use at the Facility, and so was not evaluated. The facility reports that the RTM Method is presently being used at the Cruiser facility to make some small parts. The activity uses a resin different

from than the open molding or tooling resins used. More specifically, the Facility reports it uses an interplastic brand vacuum infusion resin, with components at concentrations below permit limits.

Permit conditions for all EUs in the ROP include: prompt reporting for deviations pursuant to General Conditions 21 and 22 of Part A of the ROP. (SC VII.1) As well as annual and semi-annual reporting of monitoring and deviations (SC VI.2 & VI.3). In addition to the referenced reporting, the facility is also required to submit quarterly reports of daily material usages, hours of operation, total monthly emissions and 12-month rolling total emissions, as well as semi-annual compliance reports under Subpart VVVV. A review of documents indicated that the facility has reported in a timely manner. These reporting requirements are summarized below:

EU/FG	QUARTERLY SUBMITTAL	SEMI-ANNUAL SUBMITTAL	ANNUAL SUBMITTAL	NESHAP REPORTING
SOURCEWIDE		Y	Y	
EULAMINATION	Y	Y	Y	
EUGELCOAT	Y	Y	Y	
EUVOCCLEANUP	Y	Y	Y	Y
EUADHESIVE	Y	Y	Y	Y
EUACETONECLEANUP	Y	Y	Y	
EUGRINDCUTBOOTH		Y	Y	
EURTM		Y	Y	
FGOPENMOLDING		Y	Y	Y
FGMIXING		Y	Y	Y

With respect to annual emissions monitoring, Facility representatives report that historically (pre 2016) annual emissions have been conservatively based on the highest concentration of parameters of concern being used for all/total materials for an emission unit, and over reporting actual emissions. As a result of more recent internal discussions and audits, the facility has modified their emissions calculations to reflect the emissions for each material used individually. Emissions are based on chemical content of the materials, material usage and hours of operation. No verification testing is required under the permit.

Conditions in EULAMINATION (SC VI.3) and EUGELCOAT (SC VI.3) reference usage of a dated version of the Unified Emission Factors (UEF) Table for open Molding of Composites. The facility reports using the July 23, 2001 table, which is the most recent version found in an online search. The referenced table provides emission rates in pounds of styrene emitted per ton of resin or gelcoat processed.

Five stacks are associated with the facility and the following EUs: EULAMINATION, EUGELCOAT, EUVOCCLEANUP, EUADHESIVE, EUACETONECLEANUP and EURTM. The referenced stacks are in compliance with the permit conditions with respect to maximum exhaust dimensions and minimum height dimensions (S.C.VIII.1 through 5). Airflow thru the stack and associated plenum creates a negative pressure working environment and helps to seat the filters, which are reported to be replaced on an approximately weekly basis. At the time of the site inspection, the filters appeared to be maintained in general compliance with permit conditions. District Staff noted that the filters appeared to fit better than previously. Facility staff indicated that they had changed to a different brand and felt that they were a better product and very effective. No stack work has been conducted since the March 2018 site inspection.

Styrene is a pollutant of interest at this facility, it is identified both as a VOC as well as being included as a Hazardous Air Pollutant (HAP). Acetone is another pollutant of interest but is not a HAP.

SOURCEWIDE –

Source wide conditions are conditions that apply to all permitted, and exempt equipment or processes onsite. Source wide conditions are limited to the following:

EMISSION LIMITS - Source wide emission limits include VOC limits for the calendar day and 12-month rolling totals. Random totals reported are summarized below:

DATE	VOC (lb/calendar day)
October 31, 2019	359.48
LIMIT	5,267.0 lb/calendar day (SC 1.1)

*Facility was not operating on that date.

DATE	VOC (TPY)
2018	
2019 to Date (October 31, 2019)	70.53
LIMIT	<225 TPY (SC 1.2)

MONITORING/RECORDKEEPING – Permit conditions, include maintenance of manufacturer chemical composition data (including the weight percent) of each component (SC VI.1). Records were found to be maintained both in the facilities QA/QC lab as well as with the environmental staff and were readily available for review upon request.

In addition, the facility is required to maintain the following monthly records, and to have records for the previous month available by the 15th day of the month (SC VI.2):

- Gallons or pounds of each material used on a daily basis, (SC VI.2a)
- Where applicable, gallons or pounds of each material reclaimed on a daily basis, (SC VI.2b)
- VOC content (weight percent) of each material determined by manufacturer’s formulation or other approved method. (SC VI.2c)
- VOC emission calculation in lbs per calendar day, (SC VI.2d)
- VOC emission calculations in tons per calendar month, (SC VI.2e)
- VOC emission calculations in tons per 12-month rolling time period. (SC VI.2f)

Upon request, the Facility provided records for the month of October 2019, which meets the requirement of records for the previous month for November 15, 2019. It should also be noted that the required information is provided on a quarterly basis per the ROP. Information provided by the Facility included the following source wide records:

Date	Record Required	Volume	Limit (if applicable)
October 31, 2019	Gallons or lbs of Resins used daily	5788.72 lbs	45,489 lbs/day (EULAMINATION SC II.1)
October 31, 2019	Gallons or lbs of Gelcoat used daily	993.58 lbs	10,000 lb/ day (EUGELCOAT SC II.1)
October 31, 2019	Gallons or lbs of RTM used daily	none (3,760 lbs used for month)	None
October 31, 2019	Gallons or lbs of Adhesive used daily	165 lb/day	None
October 31, 2019	Gallons or lbs of VOC cleanup used daily	none	None
October 31, 2019	VOC emissions (lbs/day)	359.48	5267.0 lbs/day (SC I.1)
October 31, 2019	VOC emissions (tons/ month)	10,926.36	None

October 31, 2019	VOC emissions (tons/12-month rolling time period)	70.53	<225 TPY (SC 1.2)
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A review of records indicate that the facility is maintaining the records required to be in compliance with the ROP. In general, the facility operates 5 days per week, with operations ranging from 10-15 hours per day.

OTHER REQUIREMENTS- If the facility manufactures fiberglass reinforced plastic composite small parts for used in the construction of boats offsite, the facility is subject to requirements under 40 CFR Part 63, Subpart WWWW, except as described in 40 CFR 63.5787(d). Based on information the facility only produces components for onsite use and the referenced Federal regulations do not apply at this time. (SC IX.1)

Facility staff indicated that in discussions with previous inspector, that it was determined that if the Facility met the requirements under 40 CFR Part 63, Subpart VVVV (NESHAP for Boat Manufacturing), it also met the less rigorous requirement under Subpart WWWW.

EULAMINATION –

This EU includes the fiberglass lamination of boat parts using open molds and resins to encapsulate and bind together reinforcement fibers. Composite lamination requires catalysts or hardeners to activate the resin. Additive resins may be activators/catalysts or may be used for the unique characteristics (hardness, shine, etc.) they bring to the lamination process.

Facility records indicate that they track usage of five different production resins and four additive resins for EULAMINATION. Conservatively they include catalysts as part of their production resins, and Patch-aid as part of the additive resins. Resins used in the RTM method are not included in this EU.

the facility reports that tooling resins (used to make the molds) are not used at the Cruiser Plant, and as such the styrene monomer content limits of SC II.5 are not applicable at this time. In addition, vinyl toluene is not a reported component of any resins used onsite.

Discussions with permit engineers indicated that the additive resins as well as paste waxes, et al materials not used in significant quantities as would be needed to produce boats. As a result additive resins were not considered production resins for purposes of permitting and would have been evaluated as a miscellaneous toxic, and not included in material restrictions for production resins.

Emission controls for this process are limited to dry filters, which per the Facility are changed out on an approximately weekly basis based on visual inspection. Materials associated with open molding have a relatively limited shelf life, and shipments are received on a regular basis. It should also be noted that vinyl toluene is reported to be phasing out industry wise and is no longer a chemical component for materials used in the cruiser plant.

EMISSION LIMITS - Emission limits for EULAMINATION include VOC (including styrene and vinyl toluene) limits in pounds per hour based on a calendar day average and 12-month rolling totals. Totals reported for October 31, 2019, included 15.01 pph VOC (including styrene and vinyl toluene) for the calendar day. Totals reported are summarized below:

DATE	VOC (including styrene and vinyl toluene) (pph)	VOC (including styrene and vinyl toluene) (TPY)
October 2018	15.89 -35.80	51.99
March, 2019	7.3 – 34.69	42.63
October 2019	11.77 – 24.50	31.33
LIMIT	127.3 pph (SC I.1)	158.2 TPY (SC I.2)

In addition, EULAMINATION is limited to 0.0385 pounds VOC (including styrene and vinyl toluene) per pound of resin applied. (SC I.3). This value is calculated using the equation in Appendix 7 (SC VI.2). A review of records indicated the following:

DATE	VOC (including styrene and vinyl toluene) (lb/lb)	VOC (including styrene and vinyl toluene) LIMIT (SC I.3)
October 31, 2018	0.0312 lb/lb	0.0385 lb/lb
March 31, 2019	0.0313 lb/lb	0.0385 lb/lb
October 31, 2019	0.0311 lb/lb	0.0385 lb/lb

The average VOC lb/lb for the month of October 2019 was reported to be 0.03588 lb/lb. The yearly average lb/lb VOC content was reported to be 0.0313448 lb VOC/lb resin.

MATERIAL LIMITS- Material limits associated with EULAMINATION include both total usage per calendar day as well as limits for maximum styrene monomer and vinyl toluene content in different types of resins used. The daily use limits and reported use are presented below:

MONTH	RESIN USAGE (LBS/CALENDAR DAY)	RESIN CONTAINING UP TO 12% VINYL CHLORIDE (LBS/CALENDAR DAY)*
October 2018	6015.9 – 13776.06	None
March 2019	2721.3 – 14305.96	None
October 2019	4511.62 – 9307.92	None
LIMIT	45,489 lbs (SC II.1)	3,600 lbs (SC II.2)

* Vinyl toluene is not present in production resins used, making condition SC II.4 not applicable at this time.

With respect to chemical content, material limits for EULAMINATION include limits for both production resins with respect to maximum styrene monomer content (35% by weight) (SC II.3), as well as maximum vinyl toluene content (12% by weight) (SC II.4). Based on records for October 2019, approximately 92% of the production resin use was for one product with reported styrene content of 29% by weight.

The highest styrene concentration for production resins used was reported to be 35% by weight (black barrier resin, a vinyl ester blend resin) and reflected approximately 2-3% of the production resin usage for October 2019. The Facility reports that records are updated with incoming batch concentrations. Facility records indicate with the exception of the black barrier resin, the typical production resin is reported to be approximately 25 - 29% styrene by weight.

As previously noted, the Facility tracks the use of the four additive resins in use. Additive resin usage for October 2019 (300 lbs) is 0.10 % of the reported production resin usage. Usage records for the additive resins indicate that one additive resin (styrene concentration of 53% by weight) consisted of approximately 100 % of the total additive resin usage. Since not considered a production resin the material limits of EULAMINATION do not apply for these materials.

OPERATION LIMITS - Permit conditions for EULAMINATION include the capture and storage of waste resins in closed containers and appropriately disposed of (SC III.1). Discussions with facility staff and inspection of the hazmat storage area, indicated that the materials are properly captured and that records of proper disposal are kept in compliance with the permit.

Other operational limits associated with EULAMINATION include use of non-atomized application technology for 50% minimum of resins containing styrene (SC III.2) and all resins containing vinyl toluene (SC III.3). The facility reports that 100 % of resins associated with the EU are applied using non-atomized application technology, in compliance with the permit conditions. As previously indicated,

vinyl toluene is not a component of resins used onsite.

In compliance with SC III.4, the facility does not operate EULAMINATION unless the exhaust filters are in place and are operated properly. As previously noted, the facility changes out filters on a regular basis, based on visual inspection. Air flow thru the plenums helps to properly seat the filters in place.

MONITORING/RECORDKEEPING – Per ROP requirements, the facility is required to maintain records of the chemical composition of each of the production and tooling resins (SC VI.1). The facility reports that copies of certificates of analysis are received for each shipment of resins and gelcoats, and copies were available for review, in compliance with the permit.

Additional records maintained by the facility for EULAMINATION included:

- Records for each production resin used, of the pounds of VOC emitted per pound of material applied. (SC VI.1)
- Records of the appropriate emission factor, application method, applicable monomer content and dated version of the UEF table for each resin. (SC VI.2 & VI.3)
- Records of hours of operation per calendar day. (SC VI.4)
- Records of the total daily resin usage rate in pounds per calendar day. (SC VI.5)
- Calculated total daily records of the actual VOC (including styrene and vinyl toluene) emission rates in pounds per hour. (SC VI.7)
- Calculated monthly total and annual 12-month rolling total VOC (including styrene and vinyl toluene) emission rates determined at the end of each calendar month. (SC VI.8)

The above referenced data is submitted on quarterly basis, and the data reviewed for compliance. Data provided for October 2019 is summarized below:

Date	Record Required	Volume	Limit (if applicable)
October 31, 2019	Gallons or lbs of Resins used daily	5788.72 lbs	45,489 lbs/day (SC II.1)
October 31, 2019	Hours of Operation (daily)	12 hours	NA
October 31, 2019	VOC emissions (lbs/day)	180 lbs/day	No Limit under EULAMINATION
October 31, 2019	VOC (including styrene and vinyl toluene) (lbs/hr)	15.01 lb/hr	127.30 lb/hr (SC I.1)
October 31, 2019	VOC emissions (including styrene and vinyl toluene) (tons/ month)	0.21 ton/month	NA
October 31, 2019	VOC emissions (including styrene and vinyl toluene) (tons/12-month rolling time period)	31.33 TPY	158.2 TPY (SC I.2)

As previously indicated, the facility reports that no vinyl toluene is present in materials used onsite, and is being phased out in the industry, so conditions SC II.2 and SC VI.6 are not applicable.

REPORTING – Permit conditions for EULAMINATION require the following reporting requirements:

- Semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated certification forms,
- Quarterly submittal of monthly reports of:
 - o Daily resin usage rate. (SC VII.4)
 - o Hours of operation. (SC VII.4) and
 - o VOC (including styrene and vinyl toluene) hourly (based on calendar day average) and 12-month rolling total emission rate. (SC VII.4)

As previously indicated, facility reports are submitted on a timely basis, and have been determined to be complete with reference to reporting requirements.

EUGELCOAT –

This EU is a type of production resin which does not contain reinforcing fibers and is applied to the mold surface or to the finished laminate. Facility usage records differentiate these from other production resins. Pigmented gel coat contains the boat color and it usually the first coat applied to the open boat mold in the fiberglass lamination process. The Facility reports use of 15 different gelcoats onsite. The most commonly used gelcoat being "Cruiser White". No clear gelcoat is reported to be used at the Cruiser plant. Emission controls for this process are limited to dry filters.

EMISSION LIMITS - Emission limits for EUGELCOAT include VOC (including styrene) and styrene limits in pounds per hour based on a calendar day average and 12-month rolling totals. VOC (including styrene) emissions and styrene emissions for October 31, 2019, were reported to be 11.3 pph, and 8.10 pph, respectively. Well below the permit limit. Other emissions data reviewed is summarized in the tables below:

DATE	VOC (including styrene) (Calendar Day Average)
October 2018	14.58 – 37.05
March 2019	15.68 – 40.06
October 2019	7.0 – 28.74
LIMIT	98.9 pph (Calendar Day Average) (SC I.1)(SC VI.5)

DATE	VOC (including styrene) (TPY)
October 31, 2018	50.81
March 31, 2019	42.58
October 31, 2019	32.51
LIMIT	134.4 TPY (SC I.2)

DATE	STYRENE EMISSIONS (Calendar Day Average)
October 2018	11.01 – 27.16
March 2019	11.06 – 29.68
October 2019	5.05 – 22.75
LIMIT	69.8 pph (Calendar Day Average) (SC I.3) (SC VI.5)

DATE	STYRENE EMISSIONS
October 2018	37.42
March 2019	31.42
October 2019	25.05
LIMIT	94.8 TPY (SC I.4)

MATERIAL LIMITS- The Facility records include the use of 15 pigmented gel coats. A review of records for the month of October 2019 indicated that the highest usage was for "Cruiser white", which reported apx. 20,000 lbs (apx. 56% of total gel coat) of gel coat used has a reported styrene content of 21 % by weight. "Bennetau Blue "gel coat has the highest reported styrene content at 30.71% by weight but reflects only 1.47% of the total gel coat usage for the month of October 2019.

Material limits associated with EUGELCOAT include both total usage per calendar day as well as limits

for maximum styrene monomer content in the gel coat used onsite. Daily usage reported for October 31, 2019 was 993.58 lbs of gelcoat for the calendar day. Well below the 10,000 lb limit. The daily use ranges and maximum styrene monomer content for the gel coat are presented in the tables below:

DATE	GELCOAT USAGE (LBS/CALENDAR DAY)
October 2018	1331.63 – 3196.90
March 2019	1381.36 – 3640.53
October 2019	857.04 – 2722.11
LIMIT	10,000 lbs /calendar day (SC II.1)

DATE	TOTAL GELCOAT USAGE (lbs/month)	TOTAL STYRENE (lbs/month)	STYRENE MONTHLY AVERAGE (% BY WEIGHT)
October 2018			
March 2019			
October 2019	35,547	3456.09	
LIMIT	NA	NA	30.7% (SC II.2)

For October 31, 2019, the total gelcoat usage (993.58 lbs) and the total styrene emissions (218.46 lbs) resulted in a 21% average styrene content for the day. The styrene limit reflects a monthly average of 30.7% styrene by weight (SC II.2)

OPERATION LIMITS - Permit conditions for EUGELCOAT include the capture and storage of waste resins in closed containers and appropriately disposed of (SC III.1). Discussions with facility staff and inspection of the hazmat storage area, indicated that the materials are properly captured and that records of proper disposal are kept in compliance with the permit.

In compliance with SC III.2, the facility does not operate EUGELCOAT unless the exhaust filters are in place and are operated properly. As previously noted, the facility changes out filters on a regular basis, based on visual inspection. Air flow thru the plenums helps to properly seat the filters in place.

MONITORING/RECORDKEEPING – Per ROP requirements, the facility is required to maintain records of the chemical composition of each of the gel coats (SC VI.2). The facility reports that copies of certificates of analysis are received for each shipment of resins and gelcoats, and copies were available for review, in compliance with the permit.

Additional records maintained by the facility for EUGELCOAT included:

- Records of the appropriate emission factor, application method, applicable monomer content and dated version of the UEF table for each resin. (SC VI.3)
- Records of hours of operation per calendar day. (SC VI.4)
- Records of the total daily gel coat usage rate in pounds per calendar day and pounds per month and the 12-month rolling total usage. (SC VI.1 & 7)
- Calculated total daily records of the Styrene and VOC (including styrene) emission rates in pounds per hour. (SC VI.5)
- Calculated monthly total and annual 12-month rolling total VOC (including styrene and vinyl toluene) emission rates determined at the end of each calendar month. (SC VI.6)

REPORTING – Permit conditions for EUGELCOAT require the following reporting requirements:

- Semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated certification forms,
- Quarterly submittal of monthly reports of:
 - o Daily resin usage rate. (SC VII.4)
 - o Hours of operation. (SC VII.4) and
 - o VOC (including styrene) hourly (based on calendar day average) and 12-month rolling total emission rate. (SC VII.4)

As previously indicated, facility reports are submitted on a timely basis, and have been determined to be complete with reference to reporting requirements.

EUVOCCLEANUP –

This EU includes activities associated with VOC based cleanup solvent usage. The facility reports only using acetone and “3680 cleaner”. Emission control associated with the activities is by dry fabric filters. No emission limits, operational limits or testing requirements exist for the referenced EU.

MATERIAL LIMITS – Permit conditions include VOC in lbs/yr and a maximum organic HAP content of cleaning solvent for routine flushing of resin and gel coat applications. A review of the manufacturer chemical data for solvents used indicated that the maximum organic HAP content of 5% by weight. (SC II.2) VOC content of the 3680 cleanser is 12.24% by weight.

DATE	VOC Emissions (lbs/year)
October 31, 2018	55614.90
March 31, 2019	51224.25
October 31, 2019	41,995.0
LIMITS	937,500 lbs (SC II.1)

In addition, the permittee is required to store organic HAP containing solvents (used for removing cured resin or gel coat) in covered containers, with no visible gaps at all times when equipment being cleaned is being placed in or removed from the container (SC III.3). Staff was able to confirm that containers with a capacity greater than 2 gallons, the distance from the top of the container must be no less than 0.75 times the diameter of the container. (SC III.4)

MONITORING/RECORDKEEPING –The organic HAP content of cleaning solvents in SC II.2 may be determined using the various methods identified in 40 CFR 63.5758 (SC VI.3). In addition to test Method 311, Method 24 or ASTM D1259-85, the permittee has chosen to use info from the supplier or manufacturer, as approved by the administrator (SC VI.3).

The permittee is required to visually inspect on a monthly basis any containers which contain an organic HAP containing solvent to verify that the covers have no visible gaps and document the inspections, any repairs and corrective actions. (SC VI.2) The required inspection is reported to be completed as part of the weekly safety inspection conducted onsite. In addition, the following monthly records are maintained by the Facility and are available for review (SC VI.1):

- Identity of each cleanup solvent used (SC VI.1a)
- Gallons or pounds of each cleanup solvent used, (SC VI.1c)
- Gallons or pounds of each cleanup solvent reclaimed, (SC VI.1d)
- VOC content of each cleanup solvent used (SC VI.1b)
- Calculations determining the percent by weight of all VOC-based cleanup solvent recovered and reclaimed per calendar month. (SC VI.1e)
- Calculations determining the cleanup solvent usage rate in pounds per calendar month, (SC VI.1f)
- Calculations determining the cleanup solvent usage rate in pounds per 12-month rolling time period at the end of each calendar month. (SC VI.1f)

REPORTING - In addition to the general semi-annual and annual reporting requirements under the ROP, the Facility is required to report compliance per 40 CFR 63.5764 (SC VII.5.) Reports are submitted in a timely manner.

OTHER REQUIREMENTS- The ROP contains a high-level citation, requiring the permittee to comply with all applicable provisions of 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing (SC IX.1). The facility reports compliance with respect to open molding through use of compliant materials (40 CFR 63.5713). Requirements under the referenced subpart have been incorporated into the ROP, therefore compliance with the ROP insures compliance with the subpart.

EUADHESIVE –

Adhesive application activities tracked by the facility include those for upholstery, carpet, vinyl and structural adhesives and additives. The facility tracks usage for a total of six different adhesive products (three of which are structural adhesives) and an activator for two of the adhesives.

Construction of cushions are conducted offline but are installed at the appropriate point during the later phases of fabrication. No pollution control is associated with the activities. The facility reports that they have switched to a water-based adhesive for carpeting and fabric.

EMISSION LIMITS – ROP conditions for EUADHESIVE consist of combined calendar day and 12-month rolling totals for VOC and acetone combined emissions. Data provided by the company for randomly selected days is presented below.

DATE	VOC and ACETONE COMBINED (LBS/DAY) *
October 31, 2018	8.10 – 85.17
March 31, 2019	24.2 – 134.13
October 31, 2019	10.3 – 67.86
LIMIT	484 lbs /day (SC I.1)

DATE	VOC and ACETONE COMBINED (TPY)
October 31, 2018	4.78
March 31, 2019	5.60
October 31, 2019	7.45
LIMIT	61.0 Tons (SC I.2)

MATERIAL LIMITS – Carpet and fabric adhesives under EUADHESIVE are limited to a maximum organic HAP content of 5% by weight. (SC II.1) A total of six different adhesives are reported to be used at the facility. A review of the facility records indicate that the adhesives are compliant with the referenced limit.

Semi-annual reporting by the facility indicated that the 5% organic HAP limit does not apply to materials in hand-held aerosol spray cans. Upon inquiry, the facility reported that the can spray adhesives are mostly used on the assembly line for making minor repairs. At most work stations a can will last weeks if not months. There are no production areas that use the spray cans for regular production activities.

MONITORING/RECORDKEEPING – Under the ROP, the Facility maintains daily, monthly and 12-month rolling records of: adhesive usage, hours of operation (SC VI.1) and combined VOC and acetone emissions (SC VI.2). In addition, the facility maintains monthly records of adhesive VOC and acetone content using formulation data (SC VI.3 and VI.4).

Organic HAP content for the same materials are required to be determined per 40 CFR 63.5758. The facility determines organic HAP content by manufacturer Safety Data Sheets (SDS). (SC VI.2) Records reviewed indicated that organic HAPs are below the 5% organic HAP limit (SC II.1).

REPORTING – Permit conditions require the following reporting requirements:

- Semiannual and annual monitoring and deviations reports (SC VII.2 and VII.3) and the associated certification forms (SC VII.3),
- Semi-annual compliance reporting as required under 40 CFR 63.5764,(SC VII.5)
- Quarterly submittal of monthly reports of:
 - o Daily adhesive usage rate (SC VII.4)
 - o VOC and acetone content (SC VII.4)
 - o VOC and acetone emissions in lbs/day and tons per 12-month rolling time period (SC VII.4)

As previously indicated, the facility reports are submitted on a timely basis, and have been determined

to be complete with reference to reporting requirements.

EUACETONECLEANUP –

The facility uses an acetone based cleanup solvent. The facility reports the solvents used at the time of the December 6, 2019, site inspection to be 100% acetone. The material is shipped in bunged drums for use. No pollution control associated with the activities.

OPERATION RESTRICTIONS – Operational/process restrictions for EUACETONECLEANUP include the appropriate capture, storage and disposal all waste cleanup solvents, in compliance with applicable rules (SC III.2). Acetone for recycle/reclaim is stored in bunged drums with lidded capture funnels to control fugitive emissions to the atmosphere.

MATERIAL LIMITS – No material limits exist for EUACETONECLEANUP, however the permittee is required to recover and reclaim a minimum of 48% by weight of the acetone used (SC III.1). Reported reclaim for the month of October 2019 was 62.2%. Facility staff reported that some changes had been made, which has resulted in even better reclaim values that previously attained, and anticipate being at or above 55% for the future. A review of quarterly reports for 2018-2019 indicated the following recovery and reclaim values:

DATE RANGE	LOWEST ACETONE RECOVERY/RECLAIM FOR THE QUARTER	HIGHEST ACETONE RECOVERY/RECLAIM FOR THE QUARTER
October – December 2018	49.3%	51.1%
January - March 2019	50.2%	50.4%
July – September 2019	50.2%	55.6%
Limit (SC III.2)	minimum of 48%	minimum of 48%

EMISSION LIMITS – Emission limits for EUACETONECLEANUP are limited to 125 tons per year, based on a 12-month rolling time period, as determined at the end of each calendar month. (SC I.1) Acetone emissions are summarized below:

DATE	ACETONE EMISSIONS (TPY)
October 2018	20.66
March 2019	19.64
October 2019	18.57
LIMIT	125 TPY (SC I.1)

MONITORING/RECORDKEEPING – In compliance with the permit conditions the Facility records include:

- Monthly and 12-month rolling totals for acetone used, recovered and reclaimed (SC VI.1).
- Monthly totals in pounds of acetone purchased and the amount sent off site for either recycling or disposal (SC VI.2)
- Monthly and 12-month rolling totals for the amount of acetone lost as fugitive to the atmosphere by the mass balance method in Appendix 4 of the ROP (SC VI.3)

REPORTING – In addition to semi-annual (SC VII.2), annual (SC VII.2) compliance reporting, the Facility meets quarterly reporting requirements for EUACETONECLEANUP which includes reporting the total amount of acetone lost to the atmosphere on a monthly and 12-month rolling time period. (SC VII.4) Refer to above data.

EUGRINDCUTBOOTH –

The ROP references a single grinding booth, with a dust collection system. Facility staff indicates that the unit is Booth #1. A total of three approximately 30 ft X 60 ft grinding booths, used for grinding/cutout activities exist at the “cruiser” plant. Particulate emissions are controlled by a dust collection system, with particulate emissions remaining in plant.

Based on discussions with Facility staff, it appears that the installations were conducted under R. 285 (I)(vi)(B) which allows for installation without a permit of *equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blast cleaning, shot blasting, shot peening or polishing....fiberglass...which ... emissions that are released only into the general in-plant environment.*

Differential pressures across the systems are monitored (SC IV.2) and recorded as required by permit. No emission or material limits are associated with EUGRINDBOOTH.

OPERATION LIMITS – Operational restrictions for EUGRINDCUTBOOTH include the requirement for installation, maintenance and operation of the dust collection system (SC IV.1). Exhaust gases from EUCUTGRINDBOOTH are recirculated inside the plant. (SC VIII.1)

MONITORING/RECORDKEEPING – In compliance with the ROP, the dust collection system is equipped with a differential pressure gauge (Booth # 1) (SC IV.2) and is operated with the pressure drop across the dust collector filters between 2.20 and 3.20 inches. (SC III.1) Booths #2 and #3 are reported to be equipped with monitoring system (SC III.1) The facility reports that the required weekly documentation (SC VI.1) is conducted in conjunction with the weekly safety inspections.

During the week of December 2, 2019, the pressure drop for booth #1 was 2.8 inches, and within the proper operating range. A review of the records indicated that in compliance with the permit, the facility records the pressure drop once per week (SC VI.1).

EURTM –

This EU consists of materials associated with Resin Transfer Molding (RTM) operations. At the time of the December 6, 2019, inspection the Facility reported that the RTM process was being used to form some small parts in the cruiser plant. Facility staff further indicated that the activities use a different resin than open molding or tooling resins. The resin being used is Interplastic brand Vacuum Infusior Resin. The resin contains 45% styrene and has reported maximum concentrations of 3% methy methacrylate and 1% 2-hydroxyethyl methacrylate.

Pollutant	Reported Value	Limit
VOC Emissions (including styrene) (SC I.1)	0.10 TPY	12.6 tpy
Resin Maximum Styrene Content (SC II.1)	45%	47% by weight
Resin Maximum VOC Content (SC II.2)	48%	50% by weight
Adhesive Tackifier Maximum Styrene Content (SC II.3)	0.52%	0.6% by weight
Adhesive Maximum VOC content (SC II.4)	46%	46% by weight

MONITORING/RECORDKEEPING – SC VI.1 requires the following monthly records:

- The amount of resin material used (SC VI.1a)
- The amount of adhesive/tackifier used (SC VI.1b)
- Calculation of actual VOC emissions on a monthly and 12-month rolling basis (SC VI.1c)

The permittee is required to maintain separate records of the styrene monomer content and total VOC

content for each shipment of resin and adhesive/tackifier received (SC VI.2). Readily available records, as well as documentation submitted quarterly shows compliance with the monitoring and recordkeeping requirements of the permit. VOC emissions as calculated for the month of October 2019 reported 198 lbs VOC for the month and a 12-month rolling total of 0.10 TPY.

FGOPENMOLDING –

This flexible group includes conditions pertaining to HAPs requirements for all open molding operations which utilize:

- Production resin,
- Tooling resin,
- Pigmented gel coat,
- Clear gel coat, and
- Tooling gel coat, including the application of gel coat or skin coat layers (applied before lamination by closed molding)

Materials associated with open molding have a relatively limited shelf life, and shipments are received on a regular basis. It should also be noted that vinyl toluene is reported to be phasing out industry wise, and none is used in the cruiser plant. A total of five production resins are tracked by the facility. Fifteen pigmented gelcoats were identified in reports for the facility.

Emission units associated with this flexible group include EULAMINATION and EUGELCOAT. Pollution controls associated with the flexible group are limited to fabric mat or panel filters, which are changed out on an approximately weekly basis.

EMISSION LIMITS - Emission limits (Kilograms/yr) for this flexible group are limited to 12-month rolling average organic HAP emissions as calculated via Appendix 7. (SC I.1) However, upon reviewing the referenced Appendix calculated emission limits are applicable only when compliance is determined by emissions averaging to comply with organic HAP limits. The Facility reports using the “compliant materials” method of showing compliance with organic HAP limits and is not required to use MACT MODEL POINT VALUES/emissions averaging to show compliance.

MATERIAL LIMITS – The facility reports demonstrating compliance with organic HAP content requirements under 40 CFR Part 63, Subpart VVVV by meeting the HAP content limits in Appendix 2 of the referenced Subpart. The referenced limits are time weighted averages by material type and application method. The Appendix 2 limits are outlined below:

MATERIAL	ORG. HAP LIMIT Atomized Application (% based on weighted average) *	ORG. HAP LIMIT Non-Atomized Application (% based on weighted average)
Production Resin	28% (SC II.1)*	35% (SC II.2)
Pigmented Gel Coat	33% (SC II.3)*	33% (SC II.3)
Clear Gel Coat	48% (SC II.4)*	48% (SC II.4)
Tooling Resin	30% (SC II.5)*	39% (SC II.6)
Tooling Gel Coat	40% (SC II.7)*	40% (SC II.7)

*The facility does not use atomized application methods at the Cruiser Plant.

Chemical content data for all production resins and gel coats are provided to the facility in the form of a certificate of analysis and indicate the percent by weight of organic HAPs in compliance with SC VI.10. Semi-annual reporting of the facility reported the following weighted organic HAP concentrations (compliant materials option 63.5701(b)), for production resins and pigmented gelcoats used during the referenced periods:

12-MONTH ROLLING TIME PERIOD ENDING	WEIGHTED ORG. HAP IN PRODUCTION RESIN *	WEIGHTED ORG. HAP IN PIGMENTED GELCOAT *
October 31, 2018	29.95%	27.26%
March 31, 2019	29.94%	27.34%

October 31, 2019	29.94%	27.04%
Limit for Non-Atomized Application	35%	33%

*Values reported were calculated using the equation in Appendix 7 of the ROP and in compliance with (SC VI.11)

MONITORING/RECORDKEEPING – The following monitoring and recordkeeping conditions were determined to not be required for the following reasons:

- SC VI.9 & 14, all resins and gel coats used have organic HAP contents not greater than the applicable organic HAP content limits.
- SC VI.13, all production resins are applied with non-atomized methods.
- SC VI.16, no filled resins are used onsite.
- SC VI.1 through VI.8, SC VI.15, the Facility does not use emissions averaging to show compliance with the organic HAP limit.

The Facility maintains the following records required for facilities using the compliant materials method of showing compliance:

- The HAP content of each resin and gelcoat (SC VI.12)
- The total amounts of open molding production resin, pigmented gel coat and clear gel coat used per month and the weighted average organic HAP content for each operation expressed as weight percent. (SC VI.18)
- The amounts of each open molding production applied and whether by atomized or non-atomized methods (SC VI.19)
- The copies of each notification and report pursuant to Subpart VVVV, and maintain all documentation supporting the documents (SC VI.17).

REPORTING – Permit conditions for FGOPENMOLDING require the following reporting requirements:

- Semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated certification forms,
- Semiannual reporting of compliance with reference to requirements under 40 CFR Part 63, Subpart VVVV for boat manufacturing (SC VII.6)

As previously indicated a review of files indicate that reports are complete and received in a timely manner in compliance with permit requirements.

OTHER REQUIREMENTS- As previously indicated, this flexible group contains a high-level citation for 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing, (SC IX.1). Requirements under the referenced Subpart have been incorporated into the ROP, therefore compliance with the ROP insures compliance with the subpart.

FGMIXING –

Includes EURESINMIXING and EUGELCOATMIXING. Note that neither of these EUs appear on the ROP EU summary table. This flexible group is defined as any operation in which resins, gelcoats, putties and poly-putties are combined with additives including but not limited to fillers, promoters or catalysts. No pollution control devices are associated with this flexible group.

OPERATION LIMITS - All resin and gelcoating mixing containers (including putties and poly-putties) of 208 liters or greater must have a well-fitting cover with no visible gaps in place at all times except when materials or equipment are being added or removed. (SC III.1) During the December 6, 2019, site inspection AQD Staff noted that the referenced materials are stored in sealed drums and/or tanks and that workstations utilizing putties that the putties were contained in a vinyl or membrane bag and were sealed in such a manner that the materials were not exposed to the atmosphere, in compliance with the permit conditions.

MONITORING/RECORDKEEPING – Condition SC VI.1 requires a monthly visual inspection of all mixing containers to ensure the covers have no visible gaps. Documentation of the inspections as well as a description of any repairs or corrective actions is required under SC VI.2. The facility documents weekly the status of the containers as part of their weekly safety inspection for the facility.

REPORTING - Permit conditions for FGMIXING require the following reporting requirements:

- Semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated certification forms,
- Semiannual reporting of compliance with referenced to requirements under 40 CFR Part 63, Subpart VVVV for boat manufacturing (SC VII.4)

As previously indicated a review of files indicate that reports are complete and received in a timely manner.

OTHER REQUIREMENTS- This flexible group contains a high-level citation for 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing, (SC IX.1). Requirements under the referenced subpart have been incorporated into the ROP, therefore compliance with the ROP insures compliance with the subpart.

SUMMARY

On December 6, 2019, AQD Staff conducted a site inspection of Rec Boat Holdings, LLC-Cruiser Division (N1328). The referenced facility is located at 609 13th Street, Cadillac, Wexford County, Michigan. AQD Staff met with Mr. Trent Burch, Environmental/Safety Compliance for the facility.

The facility is an ungated facility, located in an industrial park in Cadillac, Michigan. Located at the SW corner of the intersection of West 13th Street and 6th Avenue, the property is bounded to the north across 13th Street and east along 13th Street by residential properties. To the NW of the facility is St. Ann Elementary School. Properties to the south and west of the facility include other industrial facilities.

The facility is a Major for VOCs, with the potential to emit of over 100 tons/yr. The source is also considered major for HAPs (>10 tons/yr). There are no control devices onsite for VOCs, therefore CAM is not applicable. In 2004, the facility took a source -wide limit of 225 ton/yr VOC, which resulted in the source becoming a non- Potential for Significant Deterioration (PSD) source.

The referenced facility operates under Renewable Operating Permit (ROP) MI-ROP-N1328-2016. The referenced ROP was issued on July 6, 2016.

The last two scheduled site inspections were conducted on June 14, 2016, and March 16, 2018. The facility was reported to be in compliance with their permit at the time of both inspections.

As a result of information reviewed in District files, during the March 16, 2018, site visit and supplemental information provided by the facility, it was determined that the Facility is in general compliance with the ROP.

NAME Sharon LeBlanc

DATE 12/19/2019 SUPERVISOR SON