Notice of Construction (NOC) Worksheet

pscleanair.org
Puget Sound Clean Air Agency

Applicant: Fluid Motion	**NOC Number**: 11660
Project Location: 17341 Tye St. SE, Monroe, WA 98272	**Registration Number**: 29390
Applicant Name and Phone: Dennis Pearson, 425-212-8136	**NAICS: 336612**
Engineer: Brian Renninger, Madeline McFerran	**Inspector**: Melissa McAfee

A. DESCRIPTION

For the Order of Approval:
Two dry filter system spray coating booths rated at 10,000 cfm each for fiberglass boat building operations.

Facility-wide synthetic minor emission limit on styrene and total hazardous air pollutants.

Additional Information (if needed):

Facility:

Fluid Motion operates a fiberglass boat building operation in Monroe WA which was last permitted under NOC 10220.

NOC 10220 noted that estimated operation was to be 60 boats per year in the same location that had previously housed Glacier Bay Catamarans (which was permitted under NOC 7700 issued 6/30/1999).

Proposed Equipment/Activities:

This application is for a request to increase the combined styrene and methyl methacrylate limit at the facility from 5 tons/12 month rolling period to 9.0 tons/12 month rolling period "because of increased sales and different model mixes". Daily styrene emissions are voluntarily limited to 64.97 lb/24-hr to keep emissions below the small quantity emission rates (SQERs) under WAC 173-460-150. Daily operation at the daily styrene emission limit would correspond with annual styrene emissions of 11.86 tons/12 month rolling period and would result in Fluid Motion Monroe's status as a HAP major source. In order to avoid HAP major status, styrene emissions are limited to 9.0 tons/12 month rolling period. With this updated emission limit, Fluid Motion Monroe will be a synthetic minor source.

The originally reviewed potential operations (under NOC 10220) were based on production of 60 boats per year with the following estimates of gelcoat, resin and putty used per boat. The limit on production was imposed as part of the BACT review for 10220:

Compound	*Mass per Boat (lb)*
Gelcoat	535
Resin	1,750
Putty	240

The production reviewed under 10220 corresponded to 4.7 ton/yr styrene emissions. NOC 10220 imposed a limit of combined styrene and MMA emissions of 5 ton/12 month rolling period as an enforceable limit imposed as part of the BACT review for 10220. From NOC 10220:

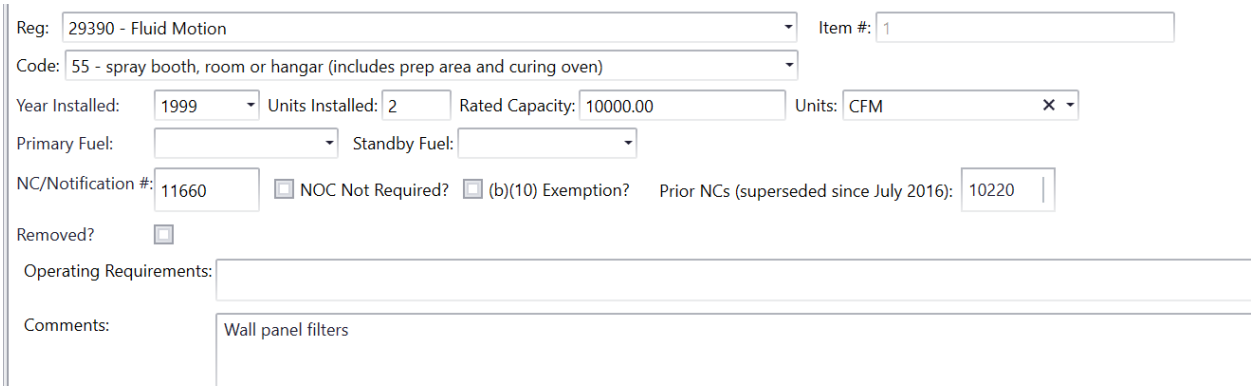
"If the source desires to emit at levels greater than that proposed (a combined 5 tons per year of styrene and MMA), then further analysis of the technical and economic feasibility of add-on controls would be needed. As such, the agency has set a tBACT limit of compliant materials (with and/or without averaging) and emission of combined styrene and MMA no greater than five tons per year. If the 5 tons per year limit is exceeded, the permit will require that the source report that to the agency. At that time the agency will review the source calculations and if the exceeding value is confirmed then require that a application to modify the order be submitted with a revised BACT and tBACT evaluation of the technical and economic feasibility of add-on controls."

Permit History:

Fluid Motion Monroe has two 10,000 CFM spray bays for fiberglass boat manufacturing which were installed in 1999 (under Glacier Bay Catamarans) and which were last permitted in 2010 under NOC 10220. NOC 11660 will cancel and supersede NOC 10220.

B. DATABASE INFORMATION

No new equipment is proposed under this NOC. The existing equipment reviewed under NOC 10220 is shown below for reference:



New NSPS due to this NOCOA?	**No**
New NESHAP due to this NOCOA?	**No**
New Synthetic Minor due to this NOCOA?	**Yes**

This application is to review an increase in the existing 5 ton/12 month rolling HAP limit to raise that limit to a synthetic minor (9.0 tons/12 month rolling period limit on styrene).

EPA has provided guidance for federally enforceable permit limits in several documents which were utilized in the development of the limits, compliance demonstration, monitoring recordkeeping and reporting requirements of this Order (PDF copies are located in the "NOC Worksheet References" sub-folder of this project folder).

- Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Act), 1/25/1995
- Guidance on Enforceability Requirements for Limiting Potential to Emit through SIP and §112 Rules and General Permits, 1/25/1995
- Approaches to Creating Federally-Enforceable Emissions Limits, 11/3/1993
- EPA comments on Lockwood Regional Landfill March 29, 2011

Per EPA guidance (example from EPA comments on Lockwood Regional Landfill March 29, 2011 which can be found in the project folder file "March 29 2011 Lockwood Landfill" PDF) "EPA encourages a 5-10% buffer between the permitted emission limits and the federal threshold". A 10% buffer (9.0 ton styrene/12 month rolling period) will be used for this synthetic minor emission limit because compliance is to be determined on a monthly basis (12-month rolling) calculated using material balance and existing emission factors from the amount and composition of gel coat, resin and adhesives applied and method of application.

Source below HAP major thresholds; NESHAP VVVV does not apply.

C. NOC FEES AND ANNUAL REGISTRATION FEES

NOC Fees:

Fees have been assessed in accordance with the fee schedule in Regulation I, Section 6.04 as in place at the time of application in 2018 (fee structure prior to updates under Board Resolution 1429). All fees must be paid prior to issuance of the final Order of Approval.

Fee Description	Cost	Amount Received (Date)
Filing Fee	$ 1,150	
Equipment (2 booths)	$1,200	
Synthetic Minor Source Status Voluntary Emission Limit within NOC	$2,000	
Public Notice*	$700	
Filing received		$ 1,150 (8/28/2018)
Additional fee received		$3,900 (12/2/2022)
Total		**$5,050**

*Publication fees to be invoiced following public comment period

Registration Fees:
Registration fees are assessed to the facility on an annual basis. Fees are assessed in accordance with Regulation I, Section 5.07. Registration fees are anticipated to increase as HAP and VOC emissions

increase associated with the changes to production and formulation reviewed under this NOC. The 2021 invoice for Fluid Motion Monroe is shown below:

Facility Fees and Applicable Regulations			Charges
Base Fee for Registered Sources. Reg I, 5.07(c)			$ 1,150.00
Reg I, 5.03(a)(3) - Facilities with annual emissions that meet or exceed thresholds Reg I, 5.03(a)(4)(D) - Facilities with spray coating operations Reg I, 5.07(c)(2) - Facilities with annual emissions that meet or exceed thresholds			
Additional Fees:			
Reg I, 5.07(c)(2) - Facilities with annual emissions that meet or exceed thresholds			$ 2,300.00
			$ 3,450.00
Emission Surcharges - Reg I, 7.07(b)(2)	**Tons in 2020**	**Per Ton**	
HAP (Hazardous Air Pollutants)	3	$ 60	$ 180.00
VOC (Volatile Organic Compounds)	3	$ 60	$ 180.00
			$ 360.00
Fee Totals			
TOTAL REGISTRATION FEE			**$ 3,810.00**
The Total Registration Fee is due by January 03, 2022. If unpaid after January 03, 2022, the facility may be subject to enforcement action with civil penalties (Reg I, 5.07(b)).			

D. STATE ENVIRONMENTAL POLICY ACT (SEPA) REVIEW

State Environmental Policy Act (SEPA) review was conducted in accordance with Regulation I, Article 2. The SEPA review is undertaken to identify and help government decision-makers, applicants, and the public to understand how a project will affect the environment. A review under SEPA is required for projects that are not categorically exempt in WAC 197-11-800 through WAC 197-11-890. A new source review action which requires a NOC application submittal to the Agency is not categorically exempt.

A new SEPA determination is not required because the potential impacts from this project were reviewed under SEPA by PSCAA for two filter banks on June 30, 1999 for Glacier Bay Catamarans which was a registered source in this location predating Fluid Motion Monroe. Glacier Bay Catamarans was a major source of HAP as noted in NOC 10220 worksheet whereas Fluid Motion proposes operation as a synthetic minor for HAP such that the previous SEPA determination covered permitting under NOC 10220 and under this NOC 11660. A DNS was issued by PSCAA on 6/30/1999 with NOC 7770. A copy of this DNS is included below and is being relied upon for this project.

7770-dns.pdf

E. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) REVIEW

Best Available Control Technology (BACT)

New stationary sources of air pollution are required to use BACT to control all pollutants not previously emitted, or those for which emissions would increase as a result of the new source or modification.

BACT is defined in WAC 173-400-030 as, "an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under Chapter 70.94 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each pollutant."

An emissions standard or emissions limitation means "a requirement established under the Federal Clean Air Act or Chapter 70.94 RCW which limits the quantity, rate, or concentration of emissions of air contaminants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction and any design, equipment, work practice, or operational standard adopted under the Federal Clean Air Act or Chapter 70.94 RCW."

Best Available Control Technology for Toxics (tBACT)

New or modified sources are required to use tBACT for emissions control for TAP. Best available control technology for toxics (tBACT) is defined in WAC 173-460-020 as, "the term defined in WAC 173-400-030, as applied to TAP."

Fiberglass boat manufacturing involves the atomized (small particles of liquid or solid suspended in air as occurs with a spray gun) and non-atomized (as occurs with hand rolling) application of VOC containing compounds which include gelcoats, resins, and small pieces of fiberglass. When the gelcoat is applied, styrene and MMA evaporate as the gelcoat dries. The resins used to bind with the fiberglass also contain styrene. The mold release agents, putty, initiator, wood stain, and spray adhesive also contain VOC and toxics. Styrene and MMA are also odorous compounds. Some particulate is also generated during the application process.

Similar Permits:

PSCAA has permitted similar boat lamination lines at Fluid Motion in Arlington (Reg 29632) under NOC 11711 and 12155:

NOC	BACT Limit

12155 (6/3/2022) – Fluid Motion, LLC fiberglass boat lamination line production increase	▪ Pigmented gel coats less than or equal to 33% organic HAPs ▪ Clear gel coats less than or equal to 48% organic HAP ▪ Resins less than or equal to 35% HAPs ▪ Adhesives less than 5% organic HAPs ▪ Use of non-atomizing spray application methods for production and tooling resin ▪ Use of HVLP/electrostatic/airless/air-assisted airless spray equipment for gel-coat application ▪ Use of low VOC content resin and gel-coat materials ▪ Cleaning solvents shall not contain VOC and HAP All resins and adhesives applied with non-atomizing application (does not include hand-held aerosol spray cans (less than 1 quart capacity) since these are categorically exempt from NOC permitting requirement in Reg I, Section 6.03(c)(59))
	Odor: best management practices, closure of doors/windows/openings when applying resin and gel-coat
	PM: 98% filtration efficiency, minimum 65% transfer efficiency for atomized product application (gel coat)
11711 (8/26/2019) – Fluid Motion, LLC fiberglass boat lamination line	Styrene, MMA, Organic HAP and VOC: • Gel coat <33% organic HAP • Resins <35% organic HAP • Adhesives <5% organic HAP • Non atomizing spray methods for production and tooling resin • Use of HVLP/electrostatic/airless/air-assisted airless spray equipment for gel coat application • Cleaning solvents not to contain VOC and HAP • All resins and adhesives applied with non-atomizing application
	Odor: best management practices, closure of doors/windows/openings when applying resin and gel-coat
	PM: 98% filtration efficiency, minimum 65% transfer efficiency for atomized product application (gel coat)
10761 (8/18/2016) – Fluid Motion, LLC fiberglass boat lamination line	• Use of non-atomizing spray application methods for production and tooling resin

10453 – Defiance Boats (4/2/2012), fiberglass boat manufacturing facility	• Use of dry filter system equipped with gauge minimum pressure drop shall not be less than the pressure drop measured with a clean properly installed filter • Use of HVLP/electrostatic/airless/air-assisted airless spray equipment for gel-coat application • Use of low VOC content resin and gel-coat materials • Cleaning solvents shall not contain VOC and HAP • Closure of doors/windows/openings when applying resin and gel-coat

Other Regulatory Agencies BACT & NESHAP MACT:

<table>
<tr><th>Agency</th><th>Limit(s)</th></tr>
<tr><td>NWCAA
NOC 1357
Aspen Catamarans (fiberglass boat manufacturing)
(11-17-2020)</td><td>Use of compliant materials with Table 2 of 40 CFR 63 Subpart VVVV, good work practice standards (combined VOCT BACT, styrene t-BACT)</td></tr>
<tr><td>40 CFR 63 Subpart VVVV</td><td>
<table>
<tr><th>Operation</th><th>Application Method</th><th>Weighted Average Organic HAP Limit (weight percent)</th></tr>
<tr><td>Production resin operations</td><td>Non-atomized</td><td>35</td></tr>
<tr><td>Tooling resin operations</td><td>Non-atomized</td><td>39</td></tr>
<tr><td>Pigmented gel coat operations</td><td>Any method</td><td>33</td></tr>
<tr><td>Clear gel coat operations</td><td>Any method</td><td>48</td></tr>
<tr><td>Tooling gel coat operations</td><td>Any method</td><td>40</td></tr>
<tr><td>Carpet and fabric adhesive</td><td>Any method</td><td>5</td></tr>
</table>
</td></tr>
<tr><td>SCAQMD BACT Determination 9/23/2003 Navigator Yachts</td><td>

Compliance with SCAQMD Rule 1162, add-on control was elected by facility to stay below public comment threshold.
Carbon adsorber/thermal oxidizer system with 85% VOC control is achieved in practice (100% capture with permanent total enclosure)
Spray booth vented to two portable carbon adsorption beds. Beds regenerated once every 5 days at the facility by steam stripping the adsorbed VOC to a thermal oxidizer. Thermal oxidizer waste heat recovered in boiler to produce steam for the stripping process.

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<tr>
<td>SCAQMD BACT Guideline for Non-Major Polluting Facilities Fiberglass Operations Fabrication – Hand and Spray Layup (10-20-2000 Rev. 0)</td>
<td>

Airless Spray Equipment and Spray Booth with Mesh Type Filter
Compliance with SCAQMD Rule 1162:

Non-atomizing application techniques for open mold resin materials except for gel coats
Application of gel coat materials with air-assisted airless, electrostatic attraction, or HVLP only
Monomer Percentage Limit by Weight As Applied (table below) or operation of emission control system with 90% or greater VOC removal on mass basis

<table>
<tr><th>Resin Material</th><th>Limits</th></tr>
<tr><td>Clear Gel Coat Marble Resins</td><td>40%</td></tr>
<tr><td>Clear Gel Coat Other Resins</td><td>44%</td></tr>
<tr><td>White & Off White Gel Coat</td><td>30%</td></tr>
<tr><td>Non-White Gel Coat</td><td>37%</td></tr>
<tr><td>Primer Gel Coat</td><td>28%</td></tr>
<tr><td>Specialty Gel Coat</td><td>48%</td></tr>
<tr><td>General Purpose Marble Resins</td><td>10% or 32% as supplied, no fillers</td></tr>
<tr><td>Solid Surface Resins</td><td>17%</td></tr>
<tr><td>Tub/Shower Resins</td><td>24% or 35% supplied, no fillers</td></tr>
<tr><td>Lamination Resins</td><td>31% or 35% supplied, no fillers</td></tr>
<tr><td>Others</td><td>35%</td></tr>
<tr><td>Fire Retardant Resin</td><td>38%</td></tr>
<tr><td>Corrosion Resistant Resin</td><td>48%</td></tr>
<tr><td>High Strength Resin</td><td>48%</td></tr>
</table>

VOC-containing material storage in closed containers

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<tr>
<td>BAAQMD BACT Guideline 129.2.1 (9/27/2006)</td>
<td>

Technologically feasible/Cost effective: Enclosure of operation and vent to an afterburner ≥0.3 sec residence time and ≥1400°F operating temperature or activated carbon adsorption system with ≤6 ppm at outlet
Achieved in Practice: Compliance with BAAQMD Reg. 8 Rule 50, use of polyester resin material with monomer content of no greater than 34% by weight and use of aqueous emulsion cleaner or acetone for clean up to maximum extent possible

Resins and gel coats only applied to open molds with non-atomizing techniques, hopper guns, non-spray techniques e.g. roller or: use of emission control system with minimum of 85% control efficiency
Storage of VOC-containing materials in closed containers
Cleaning products with less than or equal to 25 gram/liter VOC content

<table>
<tr><th colspan="2">TABLE 1</th></tr>
<tr><th>Gel Coats and Resins</th><th>Monomer Percentage by Weight</th></tr>
<tr><td>Gel Coats</td><td></td></tr>
<tr><td>Clear Gel Coats</td><td></td></tr>
<tr><td>Marble Resin Gel Coats</td><td>42%</td></tr>
<tr><td>Boat Manufacturing Gel Coats</td><td>48%</td></tr>
<tr><td>All Other Clear Gel Coats</td><td>44%</td></tr>
<tr><td>Pigmented Gel Coats</td><td></td></tr>
<tr><td>White and Off-White Gel Coats</td><td>30%</td></tr>
<tr><td>Non-White Boat Manufacturing Gel Coats</td><td>33%</td></tr>
<tr><td>Other Non-White Gel Coats</td><td>37%</td></tr>
<tr><td>Primer Gel Coats</td><td>28%</td></tr>
<tr><td>Specialty Gel Coats</td><td>48%</td></tr>
<tr><td>Resins</td><td></td></tr>
<tr><td>Marble Resins</td><td>10% with fillers or
32% without fillers*</td></tr>
<tr><td>Solid Surface Resins</td><td>17%</td></tr>
<tr><td>Tub/Shower Resins</td><td>24% with fillers or
35% without fillers*</td></tr>
<tr><td>Boat Manufacturing (atomized)</td><td>28%</td></tr>
<tr><td>Boat Manufacturing (non-atomized)</td><td>35%</td></tr>
<tr><td>Lamination Resins</td><td>31% with fillers or
35% without fillers*</td></tr>
<tr><td>Fire Retardant Resins</td><td>38%</td></tr>
<tr><td>Corrosion Resistant, High Strength and Tooling Resins</td><td></td></tr>
<tr><td>Non-atomizing Mechanical Application</td><td>46%**</td></tr>
<tr><td>Filament Application</td><td>42%**</td></tr>
<tr><td>Manual Application</td><td>40%**</td></tr>
<tr><td>Other Resins</td><td>35%</td></tr>
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SJVAPCD BACT Guideline 4.8.1 (12/7/2006) Fiberglass Boating Manufacturing Operation (<120 gallons/day and <25 tons VOC per yr)	• Technologically Feasible:
	  ○ PM10- for gelcoats: air assisted airless application (or equivalent) and an enclosed spray booth with filters rated at 95% or greater PM10 control efficiency
	  ○ VOC:
	  ▪ 98% control efficiency for thermal/catalytic oxidation with 100% capture
	  ▪ 95% control efficiency for carbon adsorption with 100% capture
	  ▪ 63.7% control efficiency (thermal/catalytic incineration and hood vent with 65% capture)
	  ▪ 61.7% total control efficiency (carbon adsorption and hood vent with 65% capture)
	• Achieved in Practice
	  ○ PM10- for gelcoats: air assisted airless application and enclosed spray booth with filters rated 66% or greater PM10 control efficiency; for resins: non-atomized spray technique flowcoaters, pressure fed rollers, resin impregnators, hand lay-up
	  ○ VOC – for gelcoats: air assisted airless application and material VOC content less than or equal to: - pigmented gelcoats: 33% - clear gelcoats: 48% - tooling gelcoats: 40% for resins, any of the following application methods: 1) non-atomized spray technique (such as the use of fluid impingement technology (FIT) spray guns), 2) flowcoaters, 3) pressure-fed rollers, 4) resin impregnators, 5) hand lay-up, or 6) any equivalent method as approved by the APCO; and materials with a material VOC content (by weight) less than or equal to: - resins: 35% - tooling resins: 39% and the use of non-VOC containing cleaning solvents

SMAQMD Minor Source BACT Determination #161 & #162 8/25/2017	• VOC: compliance with Rule 465 and VOC control system with >=90% Collection Efficiency and >= 95% Destruction Efficiency or use of super compliant materials <5% VOC by weight, or use of Low VOC Materials resulting in equal emission reduction • PM10 & PM2.5: Spray booth with exhaust filters and HVLP or equivalent application equipment as specified in Rule 465

Analysis:
For PM BACT, use of 98% control dry filtration system is consistent with recent BACT determinations from spray coating facilities.

The PSCAA, NWCAA, SCAQMD, SMAQMD, BAAQMD, and SJVAPCD BACT determinations reviewed overlap with many of the controls identified in the applicant's proposed BACT determination: low monomer resins and gel coats, non atomizing resin application, and add-on controls, specifically activated carbon adsorption and thermal oxidizer regeneration.

The identified control technologies, from most to least stringent are ranked below:

1. 86% VOC control (90% collection efficiency, 95% destruction efficiency) – SMAQMD Minor Source BACT #161 & #162
2. 85% VOC control emissions control, 6 ppmv at outlet – BAAQMD BACT Guideline 129.2.1, SCAQMD BACT Determination 9/23/2003
3. 63.7% VOC control (thermal/catalytic incineration with hood vent with 65% capture) – SJVAPCD technologically feasible
4. Organic HAP composition limits (tabulated below): PSCAA 11711, SCAQMD, BAAQMD SJVAPCD, SMAQMD SCAQMD achieved in practice, NWCAA 1357, 40 CFR 63 Subpart VVVV

Clear Gelcoats	1. 44% - SCAQMD 2. 48% - BAAQMD, SJVAPCD, 40 CFR 63 Subpart VVVV 3. 50% - SMAQMD
Pigmented (non-white) Gelcoats	1. 33% - BAAQMD, SJVAPCD, 40 CFR 63 Subpart VVVV 2. 37% - SCAQMD 3. 45% - SMAQMD
Pigmented (white) Gelcoats	1. 30% - BAAQMD, SCAQMD 2. 33% - SJVAPCD 3. 45% SMAQMD
Boat Manufacturing Resins	1. 28% (atomized) BAAQMD 2. 35% - SMAQMD, SJVAPCD, (non-atomized) BAAQMD, SCAQMD, 40 CFR 63 Subpart VVVV

Note: across SCAQMD, BAAQMD, SJVAPCD and SMAQMD different subcategories of gelcoats and resins apply; when available, boat manufacturing limits used first. If no corresponding boat manufacturing category was available for an agency regulation, then the "other" category or closest matching category was utilized.

The most stringent controls are those achieved through use of add on controls when high capture efficiency can be achieved. The Navigator Yachts facility, permitted by SCAQMD in September 2003 which is the basis for the SCAQMD achieved in practice BACT determination, was implemented at a facility fabricating custom yachts. The system at Navigator Yachts utilized a carbon adsorption system which allowed for a relatively dilute exhaust stream, and intermittent operation, to accumulate styrene and then to be steam regenerated with the volatilized VOC exhausting to a regenerative thermal oxidizer. The RTO generated steam which was recovered for the carbon regeneration process. The SCAQMD BACT Determination does not include many details regarding the specifics of operation at Navigator Yachts, however more operational specifics for this facility are discussed in Georgia EPD's Preliminary Determination for Prevention of Significant Deterioration Air Quality Review (January

2007)[1]. The Georgia EPD document specifies "Navigator Yachts manufactures multi-million dollar yachts by hand lay-up, making only a few boats per year" contrasting with a facility like Fluid Motion, where open mold large boats are fabricated in large rooms.

The intermittent nature of the batch production such as the operations at Fluid Motion, can introduce more fuel combustion and operational challenges for thermal controls. Batch processes typically need to include combustion of auxiliary fuel to sustain operation during periods of downtime. In addition to the intermittent nature of the manual fiberglass manufacturing, the size of the boats manufactured across two lamination bays results in high volume (dilute) exhaust flow rate to be routed to the afterburner, requiring larger sizing for a more dilute gas stream. Additionally, higher capture efficiency for the air in the whole building may be more difficult to achieve and require higher energy input.

The most recent Risk and Technology Review amendments to 40 CFR 63 Subpart VVVV National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing were finalized March 20, 2020 and did not result in changes in numeric emissions for Maximum Achievable Control Technology (MACT). MACT is based on the emission limitation achieved by the best performing 12 percent of the existing sources. The MACT monomer composition limits from 40 CFR 63 Subpart VVVV are included as part of the analysis although a MACT determination is for existing sources and may be less stringent than BACT.

PSCAA review of 40 CFR 63 Subpart VVVV semiannual reports submitted to WebFIRE (33 reports reviewed for the reporting period of January 1, 2021 – June 30, 2021) found that each of the reviewed reports utilized emission averaging with compliant resins for HAP content (no sources complied with the NESHAP by using emission controls).

The applicant completed cost analyses for thermal and catalytic oxidizers and adsorption systems. PSCAA considered the cost analysis provided by the applicant however cost per ton was considered holistically with other environmental considerations and the specific facility design and operations rather than looking only at the applicant's calculated cost per ton. The assumptions utilized in the cost effectiveness calculations from the applicant were that production would be limited to total VOC of 9.9 tpy and 2,030 hours per year based on the applicant's voluntary emission limit establishing the source as a synthetic minor. While this permit limits total HAP (in this case, also equal to total VOC) to 9.0 tpy, an updated cost effectiveness calculation was not requested.

Based on the specific operations at the facility (large boats completed manually using open molds in two separate buildings and limited production under a synthetic minor), and the additional energy and cost considerations for implementation of add-on controls for the intermittent operation at the facility BACT in this case will be Organic HAP composition limits detailed below.

[1] "Preliminary Determination Permit Application No. 16624 January 2007" saved as "Georgia EPD PSD Chaparral Boats.PDF"

Similar permits for odorous sources, including marijuana production facilities, have required weekly monitoring of the immediate area outside the facility at least once every calendar week. Similar odorous sources are also required to contact an independent third party to check the immediate area outside the facility (e.g. building perimeter) once every 3 months and take corrective action if odor is observed. The marijuana facilities permitted have zero odor at the fenceline requirements which have been shown to be achievable in that industry, however zero odor has not been demonstrated to be achievable for fiberglass boat manufacturing at this time. PSCAA Regulation I 9.11 applies and investigating identified odors and taking actions in response to odors represents good operating practice. In this case, if odor is observed, corrective action shall be taken and may include, but not be limited to, ceasing operation, changing location of operation within the building, closing any building openings and adjusting production rates or schedules. A fiberglass manufacturing facility located in the City of Jacksonville, with local regulations also requiring odor control. The City of Jacksonville review utilized the following odor control measures for a fiberglass manufacturing facility in Florida[2] :

- Prohibiting spray gel coat application when resin or gel coat was also being applied by hand lay-up or resin being applied by spray
- Requirement for vent fan during operation
- Maintaining inward airflow through building openings
- An odor mitigation plan

Odor BACT in this case will include:

- Closure of all building openings during application of resins and gel coats
- Weekly odor self-inspection with corrective action as needed
- Quarterly 3rd party odor inspection with corrective action as needed

Recommendations:

In this case the proposed BACT emission limits in the application align with those recommended by PSCAA, with the addition of odor BACT operational practices noted above. The proposed BACT limits from the application are shown below:

Table 8: Proposed BACT Emission Limits

Pollutant	BACT Limit
VOCs, HAPs, TAPs and odorous compounds	Gel coats with less than 33% organic HAPs Resins with less than 35% organic HAPs using non-atomizing application Adhesives with less than 5% organic HAPs

Summary BACT & tBACT determination

Pollutant	Available Method That Meets BACT	Implementation of Method
Styrene, MMA,	▪ Pigmented gel coats less than or equal to 33% organic HAPs	Material selection; SDS documentation

[2] Technical Evaluation & Preliminary Determination for Taylor Made Fiberglass,"0310629-001 tepd.pdf"

Pollutant	Available Method That Meets BACT	Implementation of Method
Organic HAPs and VOC	▪ Clear gel coats less than or equal to 48% organic HAP ▪ Resins less than or equal to 35% HAPs ▪ Adhesives less than 5% organic HAPs ▪ Use of non-atomizing spray application methods for production and tooling resin ▪ Use of HVLP/electrostatic/airless/air-assisted airless spray equipment for gel-coat application ▪ Use of low VOC content resin and gel-coat materials ▪ Cleaning solvents shall not contain VOC and HAP All resins and adhesives applied with non-atomizing application (does not include hand-held aerosol spray cans (less than 1 quart capacity) since these are categorically exempt from NOC permitting requirement in Reg I, Section 6.03(c)(59))	
Odor	▪ Best management practices Closure of doors/windows/openings when applying resin and gel-coat	▪ Weekly odor self-inspection with corrective action as needed Quarterly 3rd party odor inspection with corrective action as needed
PM	▪ 98% filtration efficiency Minimum 65% transfer efficiency for atomized product application	▪ Use of dry filter system equipped with gauge minimum pressure drop shall not be less than the pressure drop measured with a clean properly installed filter Use of HVLP/electrostatic/airless/air-assisted airless spray equipment for gel-coat application

F. EMISSION ESTIMATES

Proposed Project Emissions

The applicant submitted project emissions based on a total HAP limit of 9.0 ton/year. A materials balance approach was used for silica and all volatile TAP species, except for styrene and methyl methacrylate which utilized emission factors from the Unified Emission Factors for Open Molding of Composites.

Actual Emissions

Actual emissions were calculated assuming operation at the synthetic minor emission limit of 9.0 TPY HAP.

Product	Annual Potential to Emit VOCs, HAPs and TAPs											
	Styrene	Methyl methacrylate	Methyl ethyl ketone	n-Hexane	Xylene	Toluene	Cyclohexane	Ethyl benzene	Benzene	Dimethyl ether	VOC	Total HAPs
	TPY											
Gelcoat	2.903	0.608	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.510	
Polyester resin	4.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.300	
Vinyl ester resin	0.501	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.501	
5Gal Hi-Thix Radius Putty	0.539	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.539	
Initiator (MEKP-925)	0.000	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.200	
Mold Release	0.000	0.000	0.000	0.004	0.004	0.002	0.002	0.001	0.001	0.000	0.010	
Wood Stain	0.000	0.000	0.000	0.034	0.034	0.019	0.019	0.007	0.005	0.000	0.112	
Spray Adhesive	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.060	0.120	

Total:	TPY	8.2	0.608	0.200	0.037	0.037	0.021	0.081	0.007	0.005	0.060	9.292	
	LB/HR	8.1	0.599	0.197	0.037	0.037	0.021	0.080	0.007	0.005	0.059	9.154	
Total HAPS	TPY	8.3	0.608	0.000	0.037	0.037	0.021	0.000	0.007	0.005	0.000		8.956

Potential Emissions

The permitted potential to emit calculations are based a 9.0 TPY styrene limit with emissions of MMA and the other materials from boat manufacturing scaled accordingly (by a factor of 1.09) up from the totals assumed in the actual emissions above.

Product	Amount Used	Annual Potential to Emit VOCs, HAPs and TAPs											
		Styrene	Methyl methacrylate	Methyl ethyl ketone	n-Hexane	Xylene	Toluene	Cyclohexane	Ethyl benzene	Benzene	Dimethyl ether	VOC	Total HAPs
	(ton/yr)												
Gelcoat	29	3.164	0.662	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.83	
Polyester resin	122	4.687	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.69	
Vinyl ester	14	0.546	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	

resin													
5Gal Hi-Thix Radius Putty	15	0.588	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	
Initiator (MEKP-925)	4	0.000	0.000	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	
Mold Release	0	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
Wood Stain	0	0.000	0.000	0.00	0.04	0.04	0.02	0.02	0.01	0.01	0.00	0.13	
Spray Adhesive	0	0.000	0.000	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07	0.13	
Total:		**9.0**	**0.7**	**0.2**	**0.04**	**0.04**	**0.02**	**0.09**	**0.01**	**0.01**	**0.07**	**10.1**	**9.8**

Facility-wide Emissions

Facility-wide emissions are the same as above.
The source is a reporting source; emissions exceed the reporting thresholds of PSCAA Reg I Article 5.

G. OPERATING PERMIT or PSD

The Title V Air Operating Permit (AOP) program applicability for the entire source has been reviewed.

The facility is not a Title V air operating permit source because post project PTE remains below Title V applicability thresholds and criteria due to federally enforceable limits established in this Order of Approval 11660. The source is considered a "**synthetic minor**".

H. AMBIENT TOXICS IMPACT ANALYSIS

The estimated potential toxic air pollutant (TAP) emissions based on the 9.0 total HAP limit of this permit and a limit of 15 lamination workers per 24-hour period to ensure that daily styrene emissions remain at or below 64.97 lb/24 hr. The table below includes estimated potential emissions of all TAP and compares those to the Small Quantity Emission Rates (SQER) in WAC 173-460-150.

TAP	SQER		Potential Emissions	Model?
Styrene	65	lb/24-hr	64.97	no
Methyl methacrylate	52	lb/24-hr	5.22	no
Methyl ethyl ketone	370	lb/24-hr	1.72	no
n-Hexane	52	lb/24-hr	0.32	no
Xylene	16	lb/24-hr	0.32	no
Toluene	370	lb/24-hr	0.18	no
Cyclohexane	440	lb/24-hr	0.70	no
Ethyl benzene	65	lb/year	16.18	no
Benzene	21	lb/yr	11.55	no

The 15 lamination worker limit per 24 hour period was developed as shown below. The facility provided information about the pounds of styrene associated with each boat manufactured, and calculated the emissions per lamination worker based on the amount of time it takes workers to produce a given boat.

Fluid Motion LLC
Daily Styrene Emissions

Hours worked per employee	8	hours/day
Lamination workers per day	15	lamination workers/day

	Styrene Emissions	Production Time	Emission Factor*	Maximum Styrene E	Styrene SQER
	Pounds/boat	Lamination worker-hours/boat	lb/lamination worker-hour	lb/day	lb/day
28' cutwater	99.2	240	0.516		
24' cutwater	90.6	210	0.539	64.7	65

* Emission Factors for styrene for each boat type include a 25% safety factor, consistent with the application for Fluid Motion Arlington NOC #12155

The underlying basis of the pounds of styrene per boat is shown below:

Product	28' cutwater						
			Pounds Product Used	**% STYRENE**	**Pounds STYRENE USED**	**Emission FACTOR***	**Styrene EMITTED**
GELCOAT	Gelcoat	LBS	341.25	0.33	112.6	0.1075	36.7
	Polyester	LBS	1,277.85	0.35	447.2	0.0385	49.2
RESIN	Vinyl ester	LBS	132.00	0.35	46.2	0.0385	5.1
PUTTY	5Gal Hi-Thix Radius Putty	LBS	213.00	0.2	42.6	0.0385	8.2
						Total styrene per boat	**99.2**
Product	24' cutwater						
			Pounds Product Used	**% STYRENE**	**Pounds STYRENE USED**	**Emission FACTOR**	**Styrene EMITTED**
GELCOAT	Gelcoat	LBS	311.75	0.33	102.9	0.1075	33.5
	Polyester	LBS	1,156.15	0.35	404.7	0.0385	44.5
RESIN	Vinyl ester	LBS	202.35	0.35	70.8	0.0385	7.8
PUTTY	5Gal Hi-Thix Radius Putty	LBS	123.45	0.2	24.7	0.0385	4.8
						Total styrene per boat	**90.6**
Notes:							
* Unified Emission Factors for Open Molding of Composites, July 23,2001							

I. APPLICABLE RULES & REGULATIONS

1. PUGET SOUND CLEAN AIR AGENCY REGULATIONS

SECTION 5.05 (c): The owner or operator of a registered source shall develop and implement an operation and maintenance plan to ensure continuous compliance with Regulations I, II, and III. A

copy of the plan shall be filed with the Control Officer upon request. The plan shall reflect good industrial practice and shall include, but not be limited to, the following:
(1) Periodic inspection of all equipment and control equipment;
(2) Monitoring and recording of equipment and control equipment performance;
(3) Prompt repair of any defective equipment or control equipment;
(4) Procedures for startup, shut down, and normal operation;
(5) The control measures to be employed to ensure compliance with Section 9.15 of this regulation; and
(6) A record of all actions required by the plan.
The plan shall be reviewed by the source owner or operator at least annually and updated to reflect any changes in good industrial practice.

SECTION 6.09: Within 30 days of completion of the installation or modification of a stationary source subject to the provisions of Article 6 of this regulation, the owner or operator or applicant shall file a Notice of Completion with the Agency. Each Notice of Completion shall be submitted on a form provided by the Agency, and shall specify the date upon which operation of the stationary source has commenced or will commence.

SECTION 9.03: (a) It shall be unlawful for any person to cause or allow the emission of any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour, which is:
(1) Darker in shade than that designated as No. 1 (20% density) on the Ringelmann Chart, as published by the United States Bureau of Mines; or
(2) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Section 9.03(a)(1).
(b) The density or opacity of an air contaminant shall be measured at the point of its emission, except when the point of emission cannot be readily observed, it may be measured at an observable point of the plume nearest the point of emission.
(c) This section shall not apply when the presence of uncombined water is the only reason for the failure of the emission to meet the requirements of this section.

SECTION 9.09: General Particulate Matter (PM) Standard. It shall be unlawful for any person to cause or allow the emission of particulate matter in excess of the following concentrations:
Equipment Used in a Manufacturing Process: 0.05 gr/dscf

SECTION 9.11: It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

SECTION 9.13: It shall be unlawful for any person to cause or allow the installation or use of any device or use of any means designed to mask the emission of an air contaminant which causes detriment to health, safety or welfare of any person.

REGULATION II, Section 3.08 POLYESTER, VINYLESTER, GELCOAT, AND RESIN OPERATIONS:

(a) This section shall apply to manufacturing operations involving the use of polyester, vinylester, gelcoat, or resin in which the styrene monomer is a reactive monomer for the resin.

(b) It shall be unlawful for any person to cause or allow the application of polyester resin, vinylester resin, gelcoat, or any other resin unless the operation is conducted inside an enclosed area that is registered with the Agency. The exhaust from the operation shall be vented to the atmosphere through a vertical stack. For spray-coating applications of polyester resin, vinylester resin, gelcoat, or any other resin, the enclosed area shall incorporate a dry filter to control the overspray.

(c) It shall be unlawful for any person to use a chopper gun or spray gun to apply polyester resin, vinylester resin, gelcoat, or any other resin, unless the coating is applied by the use of one of the following methods:

(1) High volume, low pressure (0.1 to 10 psig air pressure for atomization) spray equipment,
(2) Electrostatic spray equipment,
(3) Airless spray equipment, or
(4) Air-assisted airless spray equipment.

(d) The provisions of Section 3.08(c) shall not apply to touchup and repair using a hand-held, air atomized spray gun that has a container for resin as part of the gun.

(e) It shall be unlawful for any person to use any VOC-containing material for the cleanup of spray equipment, including resin lines, unless equipment for collecting the VOC-containing material and minimizing the evaporation to the atmosphere is employed. All VOC-containing materials that are flushed through the spray equipment or lines during cleanup shall be collected in a closed container.

(f) It shall be unlawful for any person to use open containers for the storage or disposal of VOC-containing materials. Such containers and tanks shall be kept closed except when being cleaned or when materials are being added, mixed, or removed. Closed containers for solvent rag or paper disposal are required. Empty containers as defined in WAC 173-303-160 are exempt.

REGULATION I, SECTION 9.20(a): It shall be unlawful for any person to cause or allow the operation of any features, machines or devices constituting parts of or called for by plans, specifications, or other information submitted pursuant to Article 6 of Regulation I unless such features, machines or devices are maintained in good working order.

2. WASHINGTON STATE ADMINISTRATIVE CODE

WAC 173-400-040(3): Fallout. No person shall cause or allow the emission of particulate matter from any source to be deposited beyond the property under direct control of the owner or operator of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.

WAC 173-400-040(4): Fugitive emissions. The owner or operator of any emissions unit engaging in materials handling, construction, demolition or other operation which is a source of fugitive emission:

(a) If located in an attainment area and not impacting any nonattainment area, shall take reasonable precautions to prevent the release of air contaminants from the operation.

WAC173-400-111(7): Construction limitations.

(a) Approval to construct or modify a stationary source becomes invalid if construction is not commenced within eighteen months after receipt of the approval, if construction is discontinued for a period of eighteen months or more, or if construction is not completed within a reasonable time. The permitting authority may extend the eighteen-month period upon a satisfactory showing by the permittee that an extension is justified.

3. FEDERAL
NA

J. PUBLIC NOTICE

This project does not meet the criteria for mandatory public notice under WAC 173-400-171(3). Criteria requiring public notice includes, but is not limited to, a project that exceeds emission threshold rates as defined in WAC 173-400-030 (e.g. 40 tpy NOx, VOC, or SO_2, 100 tpy CO, 15 tpy PM_{10}, 10 tpy $PM_{2.5}$, 0.6 tpy lead), includes a WAC 173-400-091 synthetic minor limit, has a toxic air pollutant emission increase above the acceptable source impact level in WAC 173-460-150, or has significant public interest. A notice of application was posted on the Agency's website for 15 days. No requests or responses were received. A copy of the website posting is below:

Fluid Motion	17341 Tye St. SE, Monroe, WA 98272	Raising an annual emission limit at an existing boat building and imposing a synthetic minor emission limit.	9/17/18	Brian Renninger

A 30-day public comment period shall be held from DATE to DATE. Notices that the draft materials were open to comment were published in PLACEHOLDER FOR PUBLICATION(s). The Agency posted the application draft worksheet on the Agency's website during the comment period.

K. RECOMMENDED APPROVAL CONDITIONS

Standard Conditions:

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the installation address in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.

2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

Facility-wide Limits:

3. Fluid Motion shall limit facility-wide emissions of the following pollutants during any consecutive 12 month period to:
    a. 9.0 tons styrene; and
    b. 10 tons total hazardous air pollutant (HAP).

4. Fluid Motion must not exceed 15 lamination workers per 24-hour period. Compliance with this limitation shall be demonstrated through employee schedules or other personnel documentation.

5. Gel coat and resins used for open molding operations shall not exceed the organic hazardous air pollutant (HAP) limits shown below using a 12-month rolling weighted average. Compliance with this condition shall be demonstrated through Safety Data Sheets and a record of each materials used.

Operation	Application Method	Total Organic HAP limit (% weight)
Production resin operations	Non-atomized	35%
Pigmented gel coat operations	HVLP, electrostatic spray equipment, airless spray equipment, or nonatomizing methods	33%
Clear gel coat operations	HVLP, electrostatic spray equipment, airless spray equipment, or nonatomizing methods and applied with spray applicators not to exceed 1 quart capacity	48%
Tooling resin operations	Non-atomized	39%
Tooling gel coat operations	HVLP electrostatic spray equipment, airless spray equipment, or nonatomizing methods	40%

6. Adhesives shall not exceed the organic hazardous air pollutant (HAP) limits shown below using a 12-month rolling weighted average. Compliance with this condition shall be demonstrated through Safety Data Sheets and a record of each materials used.

Operation	Application Method	Total Organic HAP limit (% weight)
Adhesives	Non-atomized or hand-held aerosol spray cans (less than 1 quart capacity)	5%

7. Fluid Motion shall not allow visible emissions from the spray coating operations.

8. Fluid Motion shall not apply coatings containing chromium, lead, manganese, nickel, or cadmium. Fluid Motion shall not use methylene chloride (MeCl) for the removal of dried paint (including, but not limited to paint, enamel, varnish, shellac, and lacquer) from wood, metal, plastic and other substrates.

Operational Requirements:

9. During resin or gel-coat operations all doors, windows, and other openings in the active lamination building (except for exhaust stacks) shall be closed except to allow intermittent passage of personnel and equipment during resin application and gel coat application activities.

10. Fluid Motion shall use in these booths only nonatomizing methods for resin application.

11. Fluid Motion shall use in these booths only spray equipment that achieves transfer efficiency equal to or greater than 65%, which includes but is not limited to, HVLP or air assisted airless spray guns, for the application of gel-coat. Fluid Motion shall maintain records onsite demonstrating the spray equipment's efficiency.

12. Spray booth exhaust filters shall have a capture efficiency of 98% or greater, as demonstrated consistent with ASHRAE Method 52.1, Gravimetric and Dust Spot Procedures for Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter, or equivalent test method accepted by the Agency.

13. The spray booths shall be equipped with a gauge (manometer or magnehelic) to measure the pressure drop across the exhaust filters. Within 30 days after the start of operation, the acceptable pressure drop range shall be clearly marked on or near the gauge. The minimum pressure drop shall not be less than the pressure drop measured with a clean, properly installed filter.

14. The owner or operator shall visually inspect all HAP/VOC material containers at the facility at least once per week. The inspection should ensure that all containers have covers with no visible gaps between the cover and the container, or between the cover and equipment passing through the cover. If any visible gaps are noted, the owner or operator shall take immediate corrective action to close the cover over the container. The owner or operator shall keep contemporaneous record of the results of the inspection including a description of corrective actions taken. The record shall include, at minimum, the following information:

    a. Operator's name;

    b. Date of inspection;

    c. Confirmation of closed containers; and

    d. The description of corrective action taken, if any.

15. At least once each operating day, prior to conducting open molding operation in a given spray room, the owner or operator shall inspect the associated dry filter system to ensure that:

    a. The pressure drop measurement device is operating;

    b. The pressure drop across the exhaust filter is within acceptable range recommended by the manufacturer; and

    c. The filter is properly installed, seated, and secured.

16. If requirements as described by Condition 15 are not met, the owner or operator shall discontinue the operations and take corrective action. The owner or operator shall only resume operation after the requirements as described by Condition 15 are met.

17. Fluid Motion shall monitor the immediate area outside the building for detectable odors from their facility at least once every calendar week (Sunday through Saturday) during lamination. For at least one hour immediately prior to monitoring, the person performing the monitoring must remain in an atmosphere free of organic HAP odor and may not be inside the facility. If any odors from the facility are detected at or beyond the building during the monitoring or at any other time, the owner or operator shall immediately initiate corrective action to minimize the odor. The owner or operator shall keep contemporaneous record of the results of the inspection including a description of corrective actions taken. The record shall include, at minimum, the following information:

    a. Operator's name;

    b. Date of inspection;

    c. Presence or absence of organic HAP odors; and

    d. The description of corrective action taken to minimize odors.

Recordkeeping:

18. To demonstrate compliance with Condition 3 Fluid Motion shall, within 30 days of the end of each month, calculate and record the monthly emissions of styrene and total HAP for that month and for the previous 12-month period ending in that month.

    a. Emissions of styrene and methyl methacrylate shall be calculated using the Unified Emission Factors for Open Molding of Composites; and

    b. Emissions of all other HAPs shall be calculated using materials balance.

19. To demonstrate compliance with Conditions 5 and 6 Fluid Motion shall record:

    a. Organic HAP content of each resin and gelcoat applied each month.

    b. Application method for each production resin and tooling resin applied each month.

c. Amount of resin and gelcoat applied each month.

d. If each resin and gelcoat is not greater than the organic HAP content specifications in the tables of Condition 5 and 6 then compliance has been demonstrated.

e. For any month where a resin or gelcoat exceeds the specifications in the tables of Condition 5 and 6 then for the category of material and application method calculate the previous 12-month rolling weighted average using the calculation method in 40 CFR 63.5713 equation 1.

20. The following records shall be kept onsite and up-to-date for at least two years from the date of generation, and be made readily available to Agency personnel upon request:

    a. Documentation of dry filter overspray efficiency for each lamination booth as specified in Condition 12

    b. Documentation of transfer efficiency of any atomizing spray guns used for gel coat application as specified in Condition 11

    c. Results of inspections to determine compliance with HAP containment as required by Condition 14 and of inspections to determine compliance with the dry filter system as required by Condition 15 and of inspections to determine compliance with the odor complaint response as required by Condition 17; and

    d. Personnel data demonstrating compliance with the limit on active lamination workers specified in Condition 4.

Reporting:

21. If any of the calculations carried out in Condition 19 demonstrates a value exceeding one of the organic HAP specifications in Condition 5 or 6, provide a report to the agency within 30 days of the end of the month in which the calculation was carried out showing the calculation, the data that was used in the calculation, and the value calculated.

22. If the emissions of styrene exceed 9.0 tons per 12-month rolling period or if the total HAP emissions exceed 10 tons per 12-month rolling period as limited in Condition 3, Fluid Motion must provide a report to the agency within 30 days of the end of the month in which the calculation was carried out showing the calculation, the data that was used in the calculation, and the value calculated.

23. Upon issuance, this order NOC 11660 cancels and supersedes NOC 10220.

L. CORRESPONDENCE AND SUPPORTING DOCUMENTS

RE: Fluid Motion Monroe Reg 29390 NOC 11660

Reply | Reply All | Forward

MM Madeline McFerran
To Annie Klinke; Eric Albright
Cc dennispearson@rangertugs.com

Wed 1/4/2023 11:05 AM

Thank you for catching that Annie- I removed the separate putty limit.
I will start working with our Permit Administrator to get public notice out and start the 30-day comment period.

PUGET SOUND Clean Air Agency

Madeline McFerran, P.E.
Engineer II
1904 3rd Ave #105, Seattle, WA 98101
DIRECT 206-689-4063
FAX 206-343-7522
WEBSITE pscleanair.gov

RE: Fluid Motion Monroe Reg 29390 NOC 11660

Reply | Reply All | Forward

AK Annie Klinke <AKlinke@landauinc.com>
To Eric Albright; Madeline McFerran
Cc dennispearson@rangertugs.com

Wed 1/4/2023 9:51 AM

You replied to this message on 1/4/2023 11:05 AM.

Madeline,

One small change to the draft permit. The emission factor I used for the putty (77 lb/ton) in the PTE and worker calculation spreadsheet is based on a 35% styrene content in the putty, not 20%. So the BACT limit and permit limit of 77 lb/ton should also apply to the putty resin. Let me know if that makes sense, or if you would like to discuss further.

Annie

Annie Klinke
SENIOR PROJECT SCIENTIST
D: (206) 631-8693 | aklinke@landauinc.com

From: Madeline McFerran <MadelineM@pscleanair.gov>
Sent: Friday, December 30, 2022 9:52 AM
To: Annie Klinke <AKlinke@landauinc.com>; dennispearson@rangertugs.com
Cc: Eric Albright <ealbright@landauinc.com>
Subject: RE: Fluid Motion Monroe Reg 29390 NOC 11660

Hi Annie and Dennis,

Thanks for sending the updated calculations. Here is the updated draft OA with Condition 4 updated. The other update is to Condition 5, calling out a specific 20% organic HAP limit on the putty used.
It looks like we are ready to move toward publication of the draft and analysis for the 30-day public comment period. Please let me know if you are ready to move forward with that, and we can get started as early as next week.

Thanks,

PUGET SOUND Clean Air Agency

Madeline McFerran, P.E.
Engineer II
1904 3rd Ave #105, Seattle, WA 98101
DIRECT 206-689-4063
FAX 206-343-7522
WEBSITE pscleanair.gov

RE: Fluid Motion Monroe Reg 29390 NOC 11660

Reply | Reply All | Forward

AK Annie Klinke <AKlinke@landauinc.com>
To Madeline McFerran; dennispearson@rangertugs.com
Cc Eric Albright
Tue 12/20/2022 4:01 PM

LAI_Fluid Motion Monroe revised emissions calcs - 12192022.xlsx 649 KB
Fluid Motion Monroe - Worker Calculation Spreadsheet.xlsx 16 KB

Hi Madeline,

Thanks for the review. I made the updates to the polyester resin EF and vinyl ester resin EF in the spreadsheets. I also updated the Putty emission factor to match the BACT Limit of 77 lb/ton. This is likely an overestimate of the emissions of styrene from the putty. After updating the emission factors in the worker calculation spreadsheet, the daily maximum styrene emissions based on 15 lamination workers/day is 64.7 lb/day, which is less than the 65 lb/day SQER.

Attached are the updated Emission Inventory with the 1.1 scaling factor, and the worker calculation spreadsheet. Please review and let me know if there are any additional questions you have.

Thanks,
Annie

// ANNIE KLINKE
LANDAU ASSOCIATES
206.631.8693

RE: Fluid Motion Monroe Reg 29390 NOC 11660

Reply | Reply All | Forward

MM Madeline McFerran
To Annie Klinke; dennispearson@rangertugs.com
Cc Eric Albright
Fri 12/16/2022 9:47 AM

Hi Annie and Dennis,

We can make the update to track workers rather than operating hours with the same methodology as Fluid Motion Arlington. When I was reviewing the worker calculation spreadsheet some inconsistencies came up between the two spreadsheets that we'll need to address for updating the conditions:

- The polyester resin EF and the vinyl ester resin EF in the emission calc sheet are both 77 lb/ton and are based on the BACT limits for production resin styrene content. It looks like the emission factors for both the polyester resin and vinyl ester resin for the worker calculation should also be 77 lb/ton (0.039 lb/lb). The worker calculation EFs for polyester resin and vinyl ester resin should be updated to reflect the BACT limit.
- Reviewing the putty emission factor, I was not clear on the basis for the 76 lb/ton factor used in the emission calculation spreadsheet or on the 48 lb/ton emission factor in the worker spreadsheet. How were these values calculated? It looks like both the emission calculation spreadsheet and the worker calculation spreadsheet should be updated to use the BACT limit of 77 lb/ton unless the facility would like to add in a separate limit for putty resin to be 20% styrene in the table for Condition 5 (or some other styrene content limit on putty that would work for the facility's operations). It looks like updating the putty factor up to the BACT limit for the facility emissions remains below the 9.0 TPY styrene and 10 ton total HAP limit but updating the putty factor for worker calculations would change the total number of workers.

Please let me know how you would like to proceed and send along the updated emissions as needed, or if there are additional questions or something I missed. I will be out of the office next week but will return December 27 and can finish updating the draft conditions when I'm back.

Thanks,

PUGET SOUND

Madeline McFerran, P.E.
Engineer II
1904 3rd Ave #105, Seattle, WA 98101
DIRECT 206-689-4063
FAX 206-343-7522

RE: Fluid Motion Monroe Reg 29390 NOC 11660

Reply | Reply All | Forward

Tue 12/13/2022 2:09 PM

AK Annie Klinke <AKlinke@landauinc.com>
To Madeline McFerran; dennispearson@rangertugs.com
Cc Eric Albright

Fluid Motion Monroe - Worker Calculation Spreadsheet.xlsx
16 KB

Hi Madeline,

Thank you for the quick turnaround on the NOC and the updates to the HAP limitations in the spreadsheet. We have reviewed the draft permit.

We are requesting a change to permit condition #4. The eight-hour limitation would be difficult to implement due to how the facility functions. Fluid Motion is requesting that permit condition #4 be updated to be similar to the worker limitations in Fluid Motion Arlington's permit (NOC 12155). The attached spreadsheet shows the calculation of daily emissions of styrene based on worst case emissions of styrene for each boat type produced at the facility, and a 25% safety factor, consistent with the Arlington Permit. The maximum daily styrene emissions are less than the SQER.

We are proposing permit condition #4 be updated to the following language:

Fluid Motion must not exceed 15 lamination workers per 24-hour period. Compliance with this limitation may be demonstrated through employee schedules or other personnel documentation.

Please review the spreadsheet and let me know if this permit language will work for the Monroe Facility.

Thanks,
Annie

From: Madeline McFerran <MadelineM@pscleanair.gov>
Sent: Wednesday, December 7, 2022 2:10 PM
To: Annie Klinke <AKlinke@landauinc.com>; dennispearson@rangertugs.com
Cc: Eric Albright <ealbright@landauinc.com>
Subject: RE: Fluid Motion Monroe Reg 29390 NOC 11660

Hello Dennis and Annie,

Thanks for sending in the permitting fees and the updated spreadsheet. Attached is the NOC review and a draft version of the recommended OA. Also attached is the spreadsheet you previously sent with emissions scaled up to 9.0 TPY styrene (current recommendation for the single HAP limit in this draft). Please review and let me know if you have any updates for accuracy or other feedback. Once we have a finalized version of the drafts we will be ready to start the public comment process.

Thanks,

PUGET SOUND
Clean Air Agency

Madeline McFerran, P.E.
Engineer II

1904 3rd Ave #105, Seattle, WA 98101

DIRECT 206-689-4063
FAX 206-343-7522
WEBSITE pscleanair.gov

RE: Fluid Motion Monroe Reg 29390 NOC 11660

Reply | Reply All | Forward

AK Annie Klinke <AKlinke@landauinc.com>
To Madeline McFerran; dennispearson@rangertugs.com
Cc Eric Albright
Wed 11/30/2022 10:54 AM

Follow up. Start by Wednesday, December 7, 2022. Due by Wednesday, December 7, 2022. Reminder: Wednesday, December 7, 2022 3:30 PM.

LAI_Fluid Motion Monroe revised emissions calcs - 11172022.xlsx
647 KB

Hi Madeline,

Thanks for looking into this and sending over the most recent information. For Items 1 and 2, I made updates to the emissions spreadsheet (see attached). I added in the updated SQERs from WAC 173-460-150 and used those thresholds for the modeling determination. The emissions of styrene are now less than the updated SQERs, and the total HAPs are less than 9.0 tpy.

Tooling gel coat is not used at the Monroe facility, so it is not included in the emission calculations.

Once you're back in the office, please review, and then we can discuss if there is any further information you need to issue the permit.

Thanks,
Annie

// ANNIE KLINKE
LANDAU ASSOCIATES
206.631.8693

Fluid Motion Monroe Reg 29390 NOC 11660

Reply | Reply All | Forward

MM Madeline McFerran
To Annie Klinke; dennispearson@rangertugs.com
Wed 11/16/2022 4:07 PM

11660 app.pdf
29 MB

BACT analysis for Monroe 2.pdf
15 MB

Copy of LAI_Fluid Motion Monroe revised emissions calcs_ (002).xlsx
654 KB

Hi Dennis and Annie,

I've reviewed the materials sent for the Monroe application . At this time the application is incomplete although I've been able to draft up about half of the review. Here are some additional items needed:

1. The emission calculations need to be updated with the current SQERs. It looks like if the new SQERs are utilized styrene PTE may require modeling.
2. Related to item 1, the proposal is for 9.9 TPY total HAP limit; while I know that some historic synthetic minor limits have utilized a 9.9 TPY limit, based on EPA guidance and the methodology for demonstrating compliance, I am anticipating that the facility will have a synthetic minor limit of 9.0 tons HAP per 12 month rolling period. Could you please update the emission calculations for this new limit?
3. Will any tooling gel coat be applied at Monroe? It does not appear to be included in the emission calculations. Please revise if the proposal includes tooling.

As far as timing goes, the proposal falls under WAC 173-400-171(3)(k) since it would establish Fluid Motion Monroe as a synthetic minor source; a 30 day public comment period will be required once the review has been drafted.

Dennis, I believe the NOC processing fees (as they currently stand; we may have to invoice again for air model review) were sent yesterday to you, please let me know if you have any questions about the invoice.

For reference, I have attached the materials we have received for this application since I know that the process started back in 2019 and wanted to be sure we are all working from the same documents. If there are any additional documents that I am missing, please send them my way.

Please let me know if you would like to discuss further. I will be out of the office the weeks of November 21 and 28, returning December 5 and can follow up once I am back.

Thanks,

Madeline McFerran, P.E.
Engineer II

RE: Fluid Motion Monroe

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MM Madeline McFerran
To Annie Klinke; dennispearson@rangertugs.com
Wed 11/9/2022 4:41 PM

You replied to this message on 11/16/2022 4:05 PM.

Hi Annie and Dennis,

NOC 11660 which is the open Fluid Motion Monroe permit has now been reassigned to me. I will take a look at the email history and the application and follow up once I have a better sense of what is left to do.
Please feel free to contact me in the meantime if any questions come up.

Thanks,

PUGET SOUND
Clean Air Agency

Madeline McFerran, P.E.
Engineer II
1904 3rd Ave #105, Seattle, WA 98101
DIRECT 206-689-4063
FAX 206-343-7522
WEBSITE pscleanair.gov

RE: Fluid Motion NOC 11660

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DP Dennis Pearson <dennispearson@rangertugs.com>
To John Dawson
Tue 10/18/2022 5:39 PM

Follow up. Completed on Wednesday, November 9, 2022.

Hi John,

Yes Fluid Motion LLC is still interested in pursuing increase emission
Please give me a call to go over any addition information you need, I been trying to phone Brain, but have not heard from him lately

Thanks
Dennis Pearson
425-212-8136

RE: Fluid Motion NOC 11660

Reply | Reply All | Forward

JD John Dawson
To dennispearson@rangertugs.com
Fri 10/14/2022 8:50 AM

Dear Mr. Pearson,

I'm going through some of our old files, and it appears this application is still pending with us. I can't find any record of your response to Brian Renninger's email below – are you still interested in pursuing this, or should we mark this as closed?

Thanks,
John Dawson

PUGET SOUND
Clean Air Agency

John Dawson
Engineering Manager
1904 3rd Ave #105, Seattle, WA 98101
DIRECT 206-689-4060
FAX 206-343-7522
WEBSITE pscleanair.gov

FW: Fluid Motion NOC 11660

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BR Brian Renninger
To dennispearson@rangertugs.com
Fri 11/2/2018 11:56 AM

10220btr.doc
2 MB

See the list below.

Brian Renninger, P.E.

Engineer
Puget Sound Clean Air Agency

206.689.4077
brianr@pscleanair.org
1904 Third Avenue, Suite 105
Seattle, WA 98101

"Working together for clean air"
www.pscleanair.org

Fluid Motion NOC 11660

BR Brian Renninger
To dennispearson@rangertugs.com

Reply | Reply All | Forward

Fri 9/28/2018 1:26 PM

You forwarded this message on 11/2/2018 11:56 AM.

10220btr.doc
2 MB

Mr. Pearson,

Thank you for your application requesting changes to the annual emission limits in NOC 10220. In the application you proposed to increase the facility HAP limits to 9.9 tons per year. In the original NOC 10220 the HAP limits were set at 5 tons per year as a means to avoid more detailed review of the facility HAP emissions. To raise the limits the engineering worksheet NOC 10220 stated: "If the 5 tons per year limit is exceeded, the permit will require that the source report that to the agency. At that time the agency will review the source calculations and if the exceeding value is confirmed then require that an application to modify the order be submitted with a revised BACT and tBACT evaluation of the technical and economic feasibility of add-on controls." The worksheet for NOC 10220 notes "Add-on controls might include thermal oxidizers, catalytic oxidizers, adsorbors, condensers, biofilters, plus several other potential technologies."

In the current application you submitted a copy of the NOC review worksheet carried out in 2014 for NOC 10761 as the BACT analysis for this increase. The approach is not adequate in that BACT is a case-specific analysis. In this case we need a BACT analysis for Particulate, VOC, HAPs, and odor.

- For particulate, the current order of approval requires 98 percent efficient fabric filters. Provide an analysis showing the relative difference in costs between using the current filters and filters up to MERV 16 rating, and HEPA.
- For VOC/ volatile HAPs include a top down analysis:
  - Reviewing technical feasibility of: thermal oxidizers, catalytic oxidizers, adsorbors, condensers, biofilters, plus any other identified potential technologies.
  - Ranking technically feasible controls in order of effectiveness.
  - Establishing a VOC emission rate in lb/dscf for each potential control device.
  - Providing a cost per ton of VOC removed for each control technology.
- For odor:
  - Provide an analysis of techniques fiberglass fabricators has used to reduce odor
  - Rank the odor control techniques in order of effectiveness
  - Make a proposal for which measures should be implemented to reduce odor and provide the basis for the proposal.
  - Note: for odor, it doesn't need to necessarily be a quantitative analysis but, if quantitative data is available then that is preferred.

Sincerely,

Brian Renninger, P.E.

Engineer

M. REVIEWS

Reviews	Name	Date
Engineer	Madeline McFerran	12/6/2022
Inspector	Melissa McAfee	12/7/2022
Second Review:	John Dawson	12/6/2022
Applicant Name:	Annie Klinke	1/4/2023