northwest Clean Air agency

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Notice of Construction Worksheet (3/7/17)

NOC No. **1328**	Source: Bayview Composites 13593 Bayview Edison Rd Mount Vernon, WA 98273
Permit Engineer: **Crystal Rau**	
NOC Received: **5/1/19**	NOC Contact: Art Espinoza NWCAA No.: 2112

A. Project Description

Bayview Composites operates a job shop for manufacturing customized composite and epoxy moldings.

Operations on site include:

- Use of (2) CNC lathe machines in Shop 1 & 2, controlled by Torit Downflow Oval 1 DRO-2-12 dust collector, which was installed ~ 2012/2013, and is configured to exhaust inside the building,
- Fiberglassing operations consisting of a 50/50 mix of hand layup/spray resin and 100% spray application of gelcoat in Shops 2 & 3, filler applied by squeegee in Shop 3, and
- Spray application of primer in Shops 2 & 3.

Fumes and particulate from spray application for both fiberglassing operations and primer application in Shops 2 and 3 is routed through filtered ventilation exhaust boxes at ground-level (no stacks) - (2) in Shop 2 and (7) in Shop 3. Each exhaust vent-box is shrouded on (4) sides with 14.29 ft^2 of blanket-type paint-arrest filter. All filler is applied by squeegee, 50% of resin is applied by hand layup, 50% is spray applied. All gelcoat is spray applied.

The facility has been in operation for some years without a permit.

B. New Source Review (NSR) Fees

NWCAA NSR fees have been assessed in accordance with the fee schedule effective January 1, 2019. The NSR fees assessed and amount paid are listed in the NSR Fee Worksheet posted on the OAC Whiteboard for this project.

C. Public Notice

In accordance with NWCAA Section 305.1, an internet notice that the NWCAA received this NOC application and/or OAC revision request was posted on the NWCAA website for a minimum of 15 consecutive days ending on May 16, 2019.

Formal public involvement and notification (i.e., comment period and/or hearing) is not required for this project because the project review does not meet any of the criteria set

forth in NWCAA 305.2. Criteria requiring public notice includes, but is not limited to, a project that exceeds a PSD threshold (e.g. 40 tpy NOx, 100 typ CO, 15 tpy PM_{10}), includes an -091 synthetic minor limit, has a TAP that exceeds the ASIL, has significant public interest, or a project that a public comment period has been requested by an individual during the period that the NOC was posted on the NWCAA website.

D. SEPA Review

State Environmental Policy Act (SEPA) review under NWCAA Section 155 is addressed as follows.

The NWCAA is the SEPA lead agency for this project. The applicant submitted a SEPA checklist that was signed on April 29, 2019. On May 29, 2019, the NWCAA issued a DNS for this project. On May 30, 2019, the DNS and SEPA Checklist were sent to the following SEPA contacts.

WA Department of Ecology SEPA Register separegister@ecy.wa.gov	Rebeccab@mountvernonwa.gov
	brandonb@co.skagit.wa.us

The SEPA checklist and DNS issued by the NWCAA is included in the NOC file.

GHG Disclosure and Mitigation

There are no greenhouse gas emissions from this project.

E. Permit History

No permits have been issued to this facility.

F. Basis for New Source Review Applicability

The following analysis is provided as a basis for reviewing each emission unit proposed under this project under Section 300 of the NWCAA Regulation.

Note: This NOC was received March 29, 2019 and prior to the revised NWCAA New Source Review rule that became effective May 12, 2019. It is being reviewed for applicability under the TAP de minimis levels from WAC 173-460-150, according to the pre-May 12, 2019 NWCAA NSR program.

For purposes of this review, fiberglassing operations (resin & gelcoat application) and primer spray coating are considered to be different emission activities – i.e., different emission units – even though they both occur in the same areas, and are controlled by the same filtration system. Emissions from fiberglassing operations trigger NSR for volatile organic compounds (VOC) and for the toxic air pollutant (TAP) styrene, see sample emission calculations and Table 1 (below). Emissions from CNC machining operations do not exhaust outside – the bypass has been welded shut, therefore NSR is not triggered. Emissions from primer spray coating do not trigger NSR.

Emission estimates are based on an uncontrolled potential to emit for 8,760 hours. Emission calculations for each potential emission activity are calculated as follows.

VOC, Styrene & MMA emissions (uncontrolled) Spraying Operations :

Filler use, squeegee applied 40-hr/wk, scaled up to 8,760 hours operation:

$$\frac{(620 \times 4.2)\text{ lb filler}}{\text{year}} \times (0.25\%\ by\ wt) = 155\text{ lb styrene/yr (}\mathbf{0.08\ tons\ VOC/yr}\text{)}$$

$$\frac{155\text{ lb styrene}}{\text{year}} \times \frac{\text{year}}{8760\text{ hours}} = 0.018\text{ lb/hr} = \mathbf{0.42\ lb\ styrene/24\text{-}hr}\ \underline{\textit{NOT OVER DE MINIMIS}}$$

Resin use, spray applied 24-hr/wk, scaled up to 8760 hours operation:

$$\frac{(8697 \times 6.8)\text{ lb resin}}{\text{year}} \times \frac{0.041\text{ lb emitted}}{\text{lb resin used}} = 2425\text{ lb styrene/yr (}\mathbf{1.21\ tons\ VOC/yr}\text{)}$$

$$\frac{2524\text{ lb styrene}}{\text{year}} \times \frac{\text{year}}{8760\text{ hours}} = 0.277\text{ lb/hr} = \mathbf{6.6\ lb\ styrene/24\text{-}hrs}$$

Gelcoat use, spray applied 24-hr/wk, scaled up to 8,760 hours operation:

$$\frac{(3291 \times 6.8)\text{ lb gelcoat}}{\text{year}} \times \frac{0.147\text{ lb emitted}}{\text{lb gelcoat used}} = 3290\text{ lb styrene/yr (}\mathbf{1.65\ tons\ VOC/yr}\text{)}$$

$$\frac{3469.4\text{ lb styrene}}{\text{year}} \times \frac{\text{year}}{8760\text{ hours}} = 0.380\text{ lb/hr} = \mathbf{9.0\ lb\ styrene/24\text{-}hrs}$$

$$\frac{(3291 \times 6.8)\text{ lb gelcoat}}{\text{year}} \times \frac{0.068\text{ lb emitted}}{\text{lb gelcoat used}} = \mathbf{1522\ lb\ MMA/yr}$$

$$\frac{1522\text{ lb MMA}}{\text{year}} \times \frac{\text{year}}{8760\text{ hours}} = 0.0.18\text{ lb MMA/hr} = \mathbf{4.3\ lb\ MMA/24\text{-}hr}\ \underline{\textit{NOT OVER DE MINIMIS}}$$

Resin use, hand layup applied 40-hr/wk, scaled up to 8,760 hours operation:

$$\frac{(7722 \times 4.2)\text{ lb resin}}{\text{year}} \times \frac{0.047\text{ lb emitted}}{\text{lb resin used}} = 1524\text{ lb styrene/yr (}\mathbf{0.76\ tons\ VOC/yr}\text{)}$$

$$\frac{1524\text{ lb styrene}}{\text{year}} \times \frac{\text{year}}{8760\text{ hours}} = 0.174\text{ lb/hr} = \mathbf{4.18\ lb\ styrene/24\text{-}hrs}\ \underline{\textit{NOT OVER DE MINIMIS}}$$

Resin use, closed injection molding/casting, scaled up to 8,760 hours of operation:

$$\frac{(30{,}886 \times 4.2)\text{ lb resin}}{\text{year}} \times \frac{0.007\text{ lb emitted}}{\text{lb resin used}} = 908\text{ lb styrene/yr } (\textbf{0.45 tons VOC/yr})$$

$$\frac{908\text{ lb styrene}}{\text{year}} \times \frac{\text{year}}{8760\text{ hours}} = 0.104\text{ lb/hr} = \textbf{2.49 lb styrene/24-hr } \underline{\textit{NOT OVER DE MINIMIS}}$$

VOC, styrene and Methyl Methacrylate (MMA) emission factors for styrene products containing 33% (the highest styrene content for the gel coats styrene ranges) were used from Table 2 to of SCAQMD document *Guidelines for Calculating Emissions from Polyester Resin Operations.* Actual usage at 24 hours per week for spray application, and 40 hours per week for hand layup were scaled up to 8,760 hours to calculate potential to emit.

VOC & PM from Primer Spray Coating (uncontrolled) applied 24-hr/wk, scaled up to 8,760 hours operation:

$$\frac{(104 \times 6.8)\text{ gallons}}{\text{year}} \times \frac{2.8\text{ lb VOC}}{\text{gallon}} = 1980\text{ lb VOC/yr} = \textbf{0.99}\text{ tons/yr}$$

$$\frac{1980\text{ lb VOC}}{\text{year}} \times \frac{\text{year}}{8760\text{ hours}} = \textbf{0.226}\text{ lb VOC/hr}$$

$$\frac{(104 \times 6.8)\text{ gallons}}{\text{year}} \times \frac{3.36\text{ lb Solids}}{\text{gallon}} \times 0.35\text{ TE} = 832.7\text{ lb PM/yr} = \textbf{0.42}\text{ tons/yr}$$

$$\frac{832.7\text{ lb PM}}{\text{year}} \times \frac{\text{year}}{8760\text{ hours}} = \textbf{0.095}\text{ lb PM/hr}$$

VOC and PM emissions from spray coating were calculated using SDS information and based on scaling up the maximum usage of 2 gallons per 24 hour week to 8760 hours per year. For PM, a transfer efficiency of 65% was applied to account for the paint solids adhering to the coated part, with 35% of the solids being emitted, uncontrolled.

Table 1: Emissions Analysis for NSR

Pollutant	Emission Factor	Emissions (lb/hour)	Emissions (ton/yr or lb/av period)	NWCAA 300.5 de minimis threshold (ton/yr)	NSR Required by NSPS or NESHAP?
Spray Coating Operations					
PM $_{Total}$	3.36 lb/gal	0.095	0.42 ton/yr	1.25 ton/yr	no
PM_{10}	3.36 lb/gal	0.095	0.46 ton/yr	0.75 ton/yr	no
VOC	2.8 lb/gal	0.226	0.99 ton/yr	2.0 ton/yr	no
Fiberglass Operations					
VOC	varies	0.95	4.2 ton/yr	2.0 ton/yr	**yes**
Styrene	varies	0.95	22.7 lb/24-hr	5.91 lb/24-hr	**yes**
MMA	varies	0.18	4.3 lb/24-hr	4.6 lb/24-hr	no

[1] Worst case PTE for Styrene lb/hr is based on the highest styrene containing products at 33%).

G. Criteria Air Pollutant Emissions and Impacts

There are no controls applied for VOC emissions from fiberglassing operations. Emission factors for VOC were used from Table 2 to of SCAQMD document *Guidelines for Calculating Emissions from Polyester Resin Operations.*

Emissions from the proposed project, controlled as permitted, will not exceed, or cause to exceed, any ambient air quality standard for criteria air pollutants (e.g., NAAQS). Expected actual emissions from the project are estimated to be one quarter of the controlled potential emissions.

Table 2: Criteria Air Pollutant Emissions – Controlled as Permitted

Pollutant	Emission Factor	Emissions (lb/hour)	Emissions (ton/yr)	PSD SER [a] (ton/yr)	Minor NSR Modeling Thresholds [c] (ton/yr)
VOC	varies	0.95	4.2	no amb std	--

a. Prevention of Significant Deterioration (PSD) Significant Emission Rates for major sources in attainment or unclassified areas (40 CFR 52.21(b)(23)).
b. The SER for $PM_{10/2.5}$ is based on the combined filterable and condensable portions.
c. Ambient impacts of a criteria pollutant are modeled under minor NSR if they exceed the minor NSR modeling threshold. Emission impacts may be modeled when a pollutant is below this threshold if there are reasonable concerns regarding ambient impacts (e.g., horizontal or downward ventilating stacks, close property boundary, projects that include non-emergency internal combustion engines, stacks less than six feet above roofline, sensitive or high population density nearby).

H. Toxic Air Pollutant Emissions and Impacts

The estimated potential toxic air pollutant (TAP) emissions operating at 100% rated capacity and 8760 hour per year for each new emission unit is presented in Table 3. Only styrene is estimated to be emitted over the de minimis thresholds of WAC 173-460.

Table 3: Toxic Air Pollutant Emissions and Ambient Impacts

Toxic Air Pollutant	Emission Factor (lb/MMBtu)	Averaging period	Emissions (lb/averaging period)	SQER (lb/averaging period)	Ambient Impact if over SQER ($\mu g/m^3$)	ASIL ($\mu g/m^3$)
styrene	varies	lb/24-hr	15.7	118	--	900

Emission factors for Styrene are estimated based on highest styrene-containing gelcoat and high end of resin styrene content range using *Table 2-Emission Factors for Common Styrene and MMA Contents (lb/lb)* in SCAQMD document *Guidelines for Calculating Emissions from Polyester Resin Operations*. Emissions of Styrene from fiberglassing operations are based on operation at 8,760 hours and meeting maximum styrene content as specified in OAC.

Emissions estimated from fiberglassing operations, controlled as permitted, will not exceed the small quantity emission rate (SQER) of WAC 173-460, and therefore will not exceed or cause to exceed, any acceptable source impact level (ASIL) for toxic air pollutants regulated under WAC 173-460. Complete emission calculations can be found in

\\fileserver01.nwcaa.local\common\NOC\AA Non Title 5\1300-1349\OAC 1328 - Bayview Composites\Draft\2018-10-05 Bayview NSR Calculations.xlsx .

I. Prevention of Significant Deterioration (PSD) Program

Emission increases associated with this project were reviewed for Prevention of Significant Deterioration (PSD) Program applicability.

The facility is not an existing PSD major source: Explain if not obvious.

This project is not over the PSD significance thresholds (including 75,000 tpy CO_2e). Explain if not obvious.

J. Air Operating Permit (AOP) Program

After consideration of emission increases associated with this project, the Title V Air Operating Permit (AOP) program applicability for the entire source has been reviewed.

The Title V AOP thresholds are based on any of the following;

- Criteria air pollutants: PTE 100 tpy of any one pollutant.
- Hazardous air pollutants: PTE 10 tpy for any single HAP, or 25 ton/year of any combination of HAPs.
- Applicability of any federal NSPS or NESHAP regulation unless it is specifically exempt.

The facility is not a Title V air operating permit source because post project PTE remains below Title V applicability thresholds and criteria. The source is considered a "**natural minor**".

K. NWCAA Compliance Database (Stratus)

The NWCAA Stratus database has been updated to include the emission unit(s) approved by this OAC.

L. Confidential Business Information (CBI)

The NOC application does not contain any information deemed by the applicant to be CBI.

M. Applicable/Inapplicable Regulations

Relevant sections of NWCAA, state and federal regulations as they relate to the approved emission units listed in the OAC.

1. Northwest Clean Air Agency

The most relevant sections of the NWCAA Regulation are:

- 451 Opacity
- 455 PM
- 342 O&M
- 535 Nuisance Odor

2. State

WAC 173-400 contains requirements similar to those listed above. WAC 173-460 contains requirements for new sources of Toxic Air Pollutants. The putties, solvents, resins, and lacquers used by Bayview Composites contain TAPs.

3. Federal

Bayview Composites is a natural minor (aka area) source of HAP. No MACT standards have been issued that apply to area sources of reinforced plastic composites products. Major reinforced plastic composites facilities are potentially subject to MACT Subpart WWWW Reinforced Plastic Composite Production.

MACT Subpart HHHHHH (paint stripping and miscellaneous surface coating at area sources) does not apply to Bayview Composites operations. Bayview Composites does not use, and is prohibited from:

- using methylene chloride chemical strippers
- performing autobody refinishing operations that spray-apply surface coatings to motor vehicles and mobile equipment
- using spray coatings that include chromium, lead, manganese, nickel, or cadmium.

N. Best Available Control Technology (BACT) Technology Review

1. This project is similar to the following NWCAA approved projects:
    - Janicki Sunset Bldg OAC 1173 – Fiberglass Operations

2. Best available control technology (BACT) for VOC and T-BACT for styrene are limitations on styrene content of putty, filler, resin and gelcoat that have been required for other fiberglassing operations and use of high transfer efficiency spray application equipment for spraying operations and best management practices (BMPs) to minimize emissions from use, storage, cleaning and waste associated with fiberglassing operations.

O. Basis for OAC conditions

1. Styrene content – BACT & T-BACT

2. Max daily limits for open moulding for gelcoat and resin application to not exceed styrene SQER – T-BACT

3. Application method – BACT & T-BACT

4. Spray application controlled by filteration – Good O&M

5. Filtration to capture fiberglassing operations overspray – Good O&M

6. VE limt

7. Extend stack for odor control & better VOC/Styrene dispersion

8. MERV filter rating – Good engineering practice

9 & 10. Pressure differential indicator & logs– O&M

11. Spray equipment cleaning - BMP

12. Usage records – Compliance Demonstration

13. Storage of materials – BMP

14. OAC onsite

15. Record retention

16. Odor – BMP

17 – 19. Restriction on activities that trigger MACT HHHHHH

20. Notification

P. Timeline and Review

Timeline		**Date**
NOC Received		5/1/2019
NOC Incompleteness Determined (due 30 days from receipt)		5/30/2019 & 7/25/19
NOC Completeness Determined		8/21/2019
2nd Incompleteness Determined – Investigate Products/Nonspray Application Techniques		10/2/2019
2nd Completeness Determined		12/23/19
Final Decision Due (due 60 days from last completeness determination)		2/21/20
Final OAC issued		1/30/20
Review		**Date**
NWCAA Engineering	Dan Mahar	9/23/19
NWCAA Compliance	Matt Holmquist	9/25/19
Source	Art Espinoza	10/2/19 – 1st Draft 11/19/19 – 2nd Draft 1/13/20 – 3rd Draft

Q. Correspondence

5/30/2019 email to Art Espinoza, Bayview Composites
Incomplete application – need additional information.

6/17-21/19 email from Art Espinoza, Bayview Composites
Information needed to complete application

7/25/19 – 8/21/19 email to & from Art Espinoza, Bayview Composites
Additional information needed to complete application

9/18 – 20/19 email to & from Art Espinoza, Bayview Composites
Clarification on spray application in Shop 2.

10/23/19 – conference call with Art Espinoza, Bayview Composites
There is no outside exhaust from dust collectors (bypass welded shut). They need all heated air returned to the building. Do they still need dust collector permit conditions, especially the stack? Also, they use a 40% styrene content infused resin – can they be allowed to use higher styrene content when using infused resin?

11/18/19 – email from Art Espinoza, Bayview Composites

Comments on draft permit – want 40% wt average styrene content for all products; notification that baghouse is vented inside buildings; need definition of "spray"; requested 180 days to install vertical stacks.

11/19/19 – site visit with Art Espinoza and Kevin, Bayview Composites
Confirmed baghouse vents inside and discussed need for both bypass switches on baghouse be welded shut; discussed styrene content limitations and definitions of spray application from 40 CFR 63 Subpart VVVV. Kevin said spray resin is generally 35 – 40% styrene – that is a long way from the 28% or 30% listed in the permit. Suggested that Bayview work with product suppliers to see what they have for low(er) styrene content resin for spray application and also to look at options for nonspray technology. I told them I would put permit as "incomplete" until they investigate what means they will use to comply with proposed styrene limits. Follow up email asked for a response from them by December 20, 2019.

12/10/19 – conference call with Art Espinoza and Kevin, Bayview Composites
Discussed Superior Systems quote for raising the stacks. Bayview Composites was looking for confirmation from NWCAA that the stack system proposed by Superior Systems would meet permitting requirements. I told Bayview that upsizing the fans to have enough flow to exhaust the spray rooms out through a vertical stack is not something the permit will specify unless the usage of styrene containing materials exceeds the SQER and NWCAA must performing a modeling demonstration to show there will be no impacts from the project. Bayview said they would be keeping the styrene content of their materials below 33%.

12/20/19 - email conditions from Art Espinoza, Bayview Composites
Resolution re: styrene content/application methodology concerns and comments on draft OAC. Converting all but one spray gun (putty application) to fluid impingement spray guns. Said they can meet a 33% weighted average styrene content.

1/13/20 – email to from Art Espinoza, Bayview Composites
Resolution of the styrene content limits, by product and application methodology.

1/30/2020 – email from Art Espinoza, Bayview Composites
Green light to issue 3rd draft version of OAC.