

# Notice of Construction (NOC) Worksheet



Source: Everett Ship Repair	NOC Number: 12598
Installation Address: 2730 Federal Ave, Everett, WA 98201	Registration Number: 30287
Contact Name: Jon Shaton	Contact Email: <a href="mailto:jons@everettshiprepair.com">jons@everettshiprepair.com</a>
Applied Date: 09-29-2025	Contact Phone: (251) 605-8808
Engineer: Carl Slimp	Inspector: Rain Yates

## A. DESCRIPTION

### For the Order of Approval:

The addition of a third dry dock, an uplands paint/blast enclosure and operation of an existing ship repair facility. Operations at the facility include abrasive blasting, spray, brush, and roller coating, welding, grinding, pressure washing, hydroblasting, heavy lift barge vessel hauling and launching (dry dock). Emissions from dry abrasive blasting operations on the dry dock are controlled by dust collectors rated up 20,000 acfm. Emissions from spray coating operations conducted on each dry dock shall be controlled by a dry air filter system.

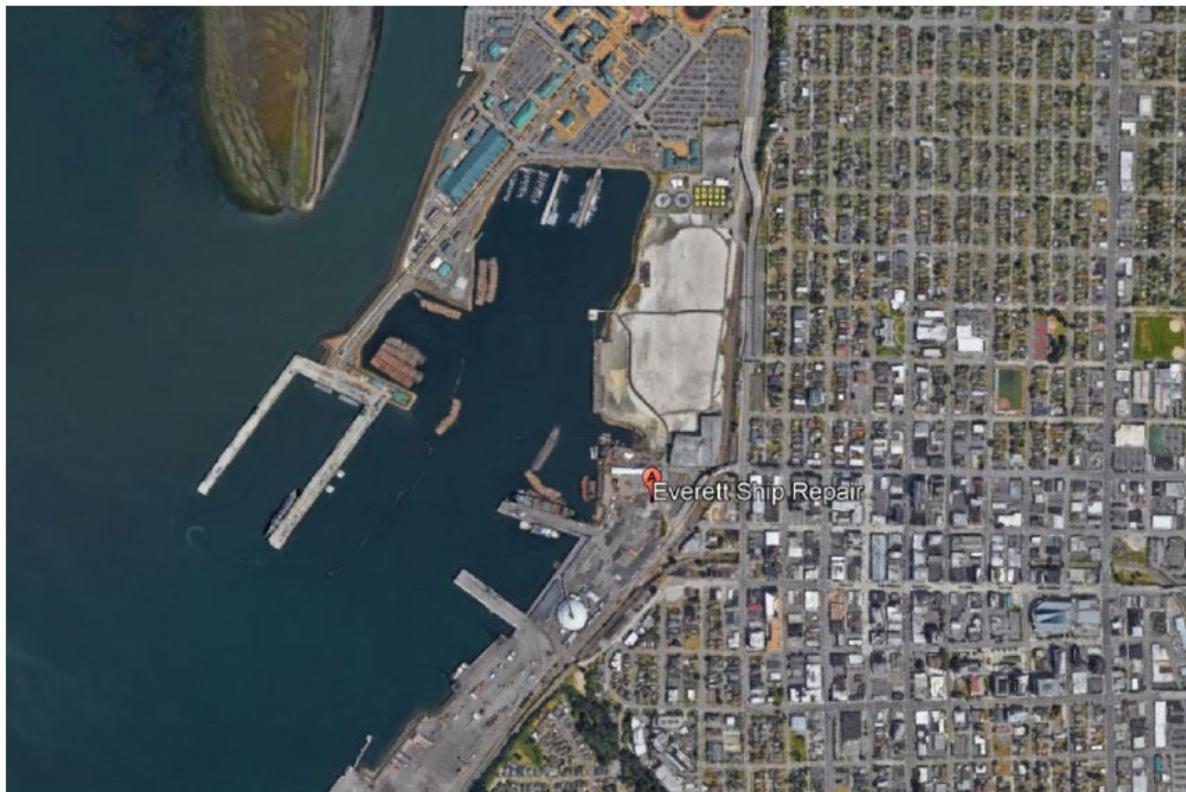
### **Facility**

Everett Ship Repair is an existing ship repair facility currently containing 2 dry docks. (Pier 3 in Port of Everett). The application indicates an estimated increase from 50 to 65 vessels per year to be worked on at the facility. The activities proposed are:

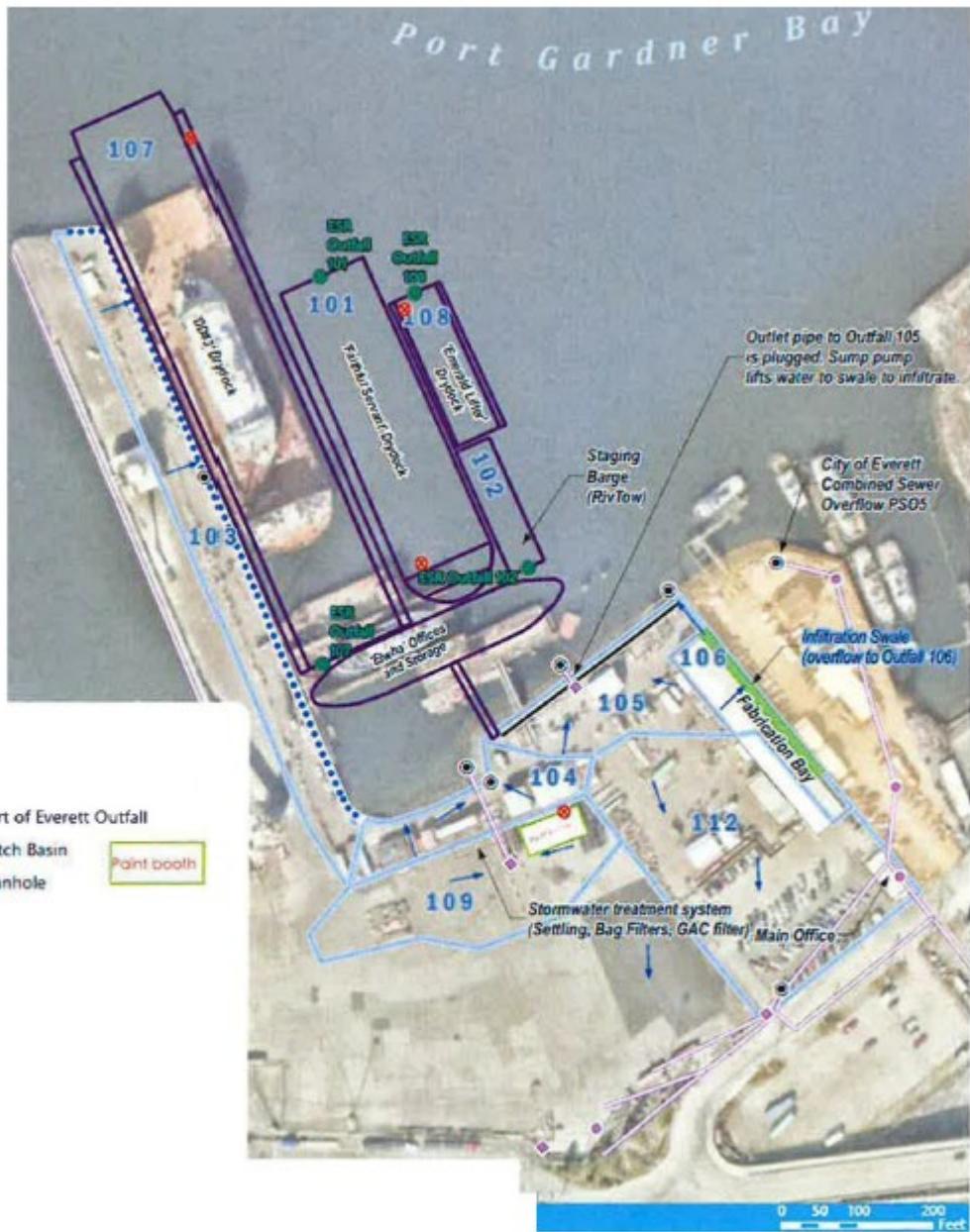
- Abrasive blasting of vessels : to be conducted in temporary enclosure on dry dock
- Spray coating of vessels: to be conducted in temporary enclosure on dry dock
- Brush and roller coating of vessels – exempt per PSCAA Reg I 6.03(c)(59)
- Welding – exempt from NOC review per PSCAA Reg I 6.03(c)(19)
- Grinding – exempt from NOC review per PSCAA Reg I 6.03(c)(39)
- Pressure washing – exempt from NOC review
- Hydroblasting – exempt if exclusively water used as abrasive
- Heavy lift barge vessel hauling - exempt

### NOC exempt activities and equipment:

- Moveable shelter – tent style for storage only; not an emission source
- Fabrication bay – steel and aluminum fabrication and pipe fabrication with welding and grinding (exempt activities per PSCAA Reg I 6.03(c)(19) and (39). Maximum sized dust collector to serve fabrication bay with 12,000 cfm is exempt per PSCAA Reg I 6.03(c)(130).
- Fixed shelter – tent for storage only; not an emission source



**Figure 1. Site Location and Vicinity Aerial for Everett Ship Repair**



**Figure 2. Everett Ship Repair Site Layout**

#### Proposed Equipment/Activities

This NOC would add an additional dry dock as well as a new location for spray coating and blasting operations. A map of the proposed additions is shown above.

The new location on land will consist of the structure shown below:

**Paint/Blast Enclosure Dimensions**

Double Trussed Paint/Blast Shelter

40 feet length Conex box (cargo container) sides

60 feet covered width between Conex boxes

25 feet tall domed gable

35 feet tall exhaust system not shown (extends 10 feet above roofline)

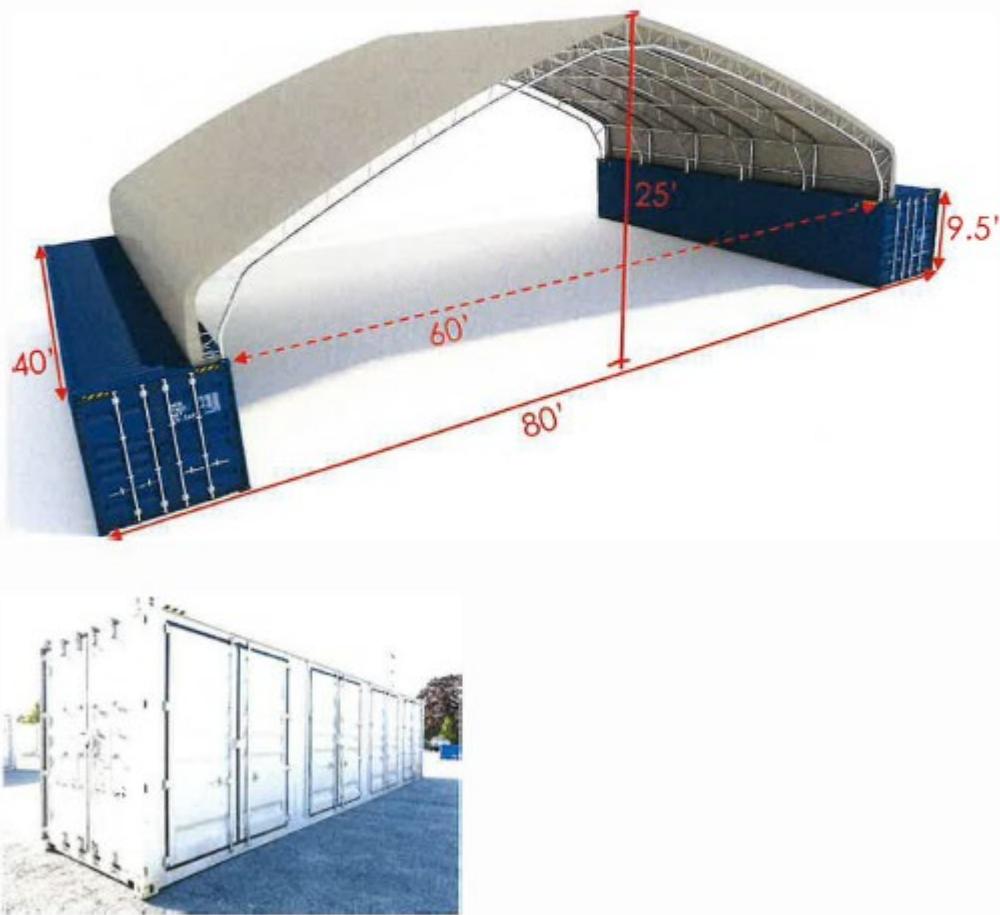
9.5 feet high Conex box side

Covered square footage is 2,400 ft<sup>2</sup>

Overall footprint is 3,200 ft<sup>2</sup>

Approximate enclosed volume 70,275 ft<sup>3</sup>

Open ends in picture will be fully enclosed with 12 mil plastic sheeting



One Conex box will be for painting operation and the other will be for blasting operations.

**Permit History**

The first permit at this location was 11922 for the first dry dock, approved on 5/6/2020. This was cancelled and superseded when a second dry dock was permitted under NOC 12245, on 1/20/2023.

## B. DATABASE INFORMATION

Reg:	30287 - Everett Ship Repair	Item #:	7
Code:	55 - spray booth, room or hangar (includes prep area and curing oven)		
Year Installed:	2025	Units Installed:	1
		Rated Capacity:	40000
		Units:	CFM
Primary Fuel:		Standby Fuel:	
NC/Notification #:	12598	<input type="checkbox"/> NOC Not Required?	<input type="checkbox"/> (b)(10) Exemption?
Removed?	<input type="checkbox"/>		
Operating Requirements:	Merv 16 filters, 35 foot stack height above ground.		
Comments:	Also used for Abrassive Blasting		

▲ Currently Linked Control Equipment:

Count: 1

Item #	CE Code	Code Description	Currently Linked?	Link Created	Link Removed	Comments
*						<a href="#">Click here to add</a>
3	100	Baghouse	<input checked="" type="checkbox"/>			

▲ Previously Linked Control Equipment:

Count: 0

Reg:	30287 - Everett Ship Repair	Item #:	3
Code:	100 - Baghouse		
Year Installed:	2025	Units Installed:	1
		Rated Capacity:	40000
		Units:	Acfm
Rated Exhaust Flowrate:		CFM	
NC/Notification #:	12598	<input type="checkbox"/> NOC Not Required?	
Removed?	<input type="checkbox"/>		
Operating Requirements:	35 foot stack pulsejet		
Comments:			

Reg:	30287 - Everett Ship Repair	Item #:	6
Code:	1 - abrasive blasting, outdoor		
Year Installed:	2025	Units Installed:	1
		Rated Capacity:	80000
		Units:	CFM
Primary Fuel:		Standby Fuel:	
NC/Notification #:	12598	<input type="checkbox"/> NOC Not Required?	<input type="checkbox"/> (b)(10) Exemption?
Removed?	<input type="checkbox"/>		
Operating Requirements:	Abrasive blasting and painting on Dry dock 3, that should be enclosed.		
Comments:	Temporary abrasive blasting and spray coating operation on Dry Dock 3. Make and model varies, exhaust out 75' stack		

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▲ Currently Linked Control Equipment:						
Count: 1						
Item #	CE Code	Code Description	Currently Linked?	Link Created	Link Removed	Comments
4	100	Baghouse	<input checked="" type="checkbox"/>	10/9/2025		

Reg:	30287 - Everett Ship Repair	Item #:	4	
Code:	100 - Baghouse			
Year Installed:	2025	Units Installed:	1	
		Rated Capacity:	80000	
		Units:	CFM	
Rated Exhaust Flowrate:		CFM		
NC/Notification #:	12598	<input type="checkbox"/> NOC Not Required?		
Removed?	<input type="checkbox"/>			
Operating Requirements:	75 feet stack height above ground			
Comments:				

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Reg:	30287 - Everett Ship Repair	Item #:	4
Code:	1 - abrasive blasting, outdoor		
Year Installed:	2022	Units Installed:	1
		Rated Capacity:	
		Units:	CFM
Primary Fuel:		Standby Fuel:	
NC/Notification #:	12598	<input type="checkbox"/> NOC Not Required?	<input type="checkbox"/> (b)(10) Exemption?
Removed?	<input type="checkbox"/>		
Operating Requirements:			
Comments:	Temporary abrasive blasting and spray coating operation. Make and model varies, exhaust out 38' stack		

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▲ Currently Linked Control Equipment:						
Count: 1						
Item #	CE Code	Code Description	Currently Linked?	Link Created	Link Removed	Comments
*	2	100	Baghouse	<input checked="" type="checkbox"/>	9/22/2022	Click here to add a new row Abrasive blasting filter rated at MERV 16 or...

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▲ Previously Linked Control Equipment:						
Count: 0						
Item #	CE Code	Code Description	Currently Linked?	Link Created	Link Removed	Comments

Reg: 30287 - Everett Ship Repair Item #: 1

Code: 56 - spray coating, outdoor

Year Installed: 2020 Units Installed: 1 Rated Capacity: Units: x

Primary Fuel: Standby Fuel:

NC/Notification #: 12598  NOC Not Required?  (b)(10) Exemption? Prior NCs (superseded since July 2016): 11922

Removed?

Operating Requirements:

Comments: vessel painting dry dock, enclosure exhaust routed through 65 foot stack

Currently Linked Control Equipment:

Count: 0

Reg: 30287 - Everett Ship Repair Item #: 1

Code: 100 - Baghouse

Year Installed: 2020 Units Installed: 1 Rated Capacity: 20000.00 Units: Acfm x

Rated Exhaust Flowrate: 0.00 CFM

NC/Notification #: 12598  NOC Not Required? Prior NC #: 11922

Removed?

Operating Requirements:

Comments: Abrasive blasting filter rated at MERV 16 or better. Make and Model varies

Reg: 30287 - Everett Ship Repair Item #: 2

Code: 100 - Baghouse

Year Installed: Units Installed: 1 Rated Capacity: Units: x

Rated Exhaust Flowrate: 20000.00 CFM

NC/Notification #: 12598  NOC Not Required? Prior NC #: 12245

Removed?

Operating Requirements:

Comments: Abrasive blasting filter rated at MERV 16 or better. Make and Model varies

New NSPS due to this NOCOA?	No	Applicable NSPS: N/A	Delegated? N/A
New NESHAP due to this NOCOA?	No	Applicable NESHAP:N/A	Delegated?N/A
New Synthetic Minor due to this NOCOA?	No		

40 CFR 63 Subpart II is the NESHAP for shipyards which are major sources of hazardous air pollutants (HAPs). A facility is a major source of HAPs if the source has the potential to emit 10 tons per year of any single HAP or 25 tons per year total HAPs. Project emissions (which constitute facility emissions) result in single highest HAP of 6.03 ton/year (xylene) and total HAP below 8.28 ton/year.

Everett Ship Repair's NAICS 336611 does not trigger 40 CFR Part 63 Subpart XXXXX.

Everett Ship Repair does not trigger 40 CFR Part 63 Subpart HHHHHH since spray-coating operations do not use materials with target HAPs (chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd).).

### 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. All fees must be paid prior to issuance of the final Order of Approval.

Fee Description	Cost	Amount Received (Date)
Filing Fee	\$ 3,000	
Equipment (\$1,000 each)	\$ 4,000	
First Tier Review of Toxic Air Contaminants: Agency Review of Screening Dispersion Modeling Analysis (provided by applicant)	\$ 800	
Public Notice	\$ 750 + publication costs	
Filing received		\$ 3,000 (9/26/2025)
Additional fee received		\$ 5,550 + publication costs (not yet paid)
<b>Total</b>	<b>\$ 8,550 + publication costs</b>	

#### Registration Fees:

Registration fees are assessed to the facility on an annual basis. Fees are assessed in accordance with Regulation I, Section 5.07. This project will not change the registration amount. The 2025 invoice is shown below.



## Puget Sound Clean Air Agency

1904 Third Avenue, Suite 105  
Seattle, WA 98101-3317  
Tax ID: 91-0823558  
206.689.4072

### Invoice for Year 2025 Registration Fees

Bill To:
Everett Ship Repair 5400 Cameron Rd Freeland, WA 98249
Attention: Accounts Payable

Invoice Date:	Invoice #:
November 22, 2024	20250065
Due Date:	Terms:
January 06, 2025	Net 45 Days
Facility ID (Registration #):	
30287	

Site Address: **Everett Ship Repair**  
**2730 Federal Ave, Everett, WA 98201**

The annual registration fee is required by Washington State law and Puget Sound Clean Air Agency's Regulation I.

Facility Fees and Applicable Regulations		Charges
<b>Base Fee for Registered Sources. Reg I, 5.07(c)</b>		\$ 1,418.00
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, 5.03(a)(6) - Facilities with particulate control equipment (>= 2,000 cfm)		
Reg I, 5.03(a)(8)(M) - Facilities with shipyards		
Additional Fees:		
Reg I, 5.07(c)(2) - Facilities with annual emissions that meet or exceed thresholds		\$ 2,804.00
		\$ <u>4,222.00</u>
Emission Surcharges - Reg I, 5.07(c)(3)		
Tons in 2023		Per Ton
HAP (Hazardous Air Pollutants)		\$ 60
VOC (Volatile Organic Compounds)		\$ 60
		\$ <u>480.00</u>
Fee Totals		
<b>TOTAL REGISTRATION FEE</b>		\$ 4,702.00
<i>The Total Registration Fee is due by January 06, 2025. If unpaid after January 06, 2025, the facility may be subject to enforcement action with civil penalties (Reg I, 5.07(b)).</i>		

#### 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.

The Port of Everett is the SEPA lead agency for this project and issued the associated **MDNS** on 8/22/2025. A copy of this **MDNS** is included in the NOC file. This NOC is being issued after the date that the **MDNS** became final.

#### **E. TRIBAL CONSULTATION**

On November 21, 2019, the Agency's Interim Tribal Consultation Policy was adopted by the Board. Criteria requiring tribal consultation are listed in Section II.A of the policy and include establishment of a new air operating permit source, establishment of a new emission reporting source, modification of an existing emission reporting source to increase production capacity, or establishment or modification of certain equipment or activities. In addition, if the Agency receives an NOC application that does not meet the criteria in Section II.A but may represent similar types and quantities of emissions, the Agency has the discretion to provide additional consultation opportunities.

The Agency identified that this NOC application meets one of the criteria in the Agency's Interim Tribal Consultation Policy, adopted by the Board on November 21, 2019. This permit will be modifying and increasing production at an existing shipyard, highlighted in Section A.5. of resolution No. 1410.

In accordance with the policy, the Agency notified each Tribe within the Agency's jurisdiction on 10/13/2025 of the intent to hold a consultation.

No comments from any Tribe was received.

On 12/26/2025, the Agency notified each tribe that the Agency would be proceeding with the final steps to issue the conditional approval of this Notice of Construction application.

#### **F. 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 70A.15 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 70A.15 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 70A.15 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."

Summary of recent Agency PM BACT determinations for abrasive blasting:

Permitting Action	Project	BACT for Abrasive Blasting
NOC 12245 (2023)	Dry abrasive blasting and spray coating operations in temporary containment systems conducted throughout shipyard	<ul style="list-style-type: none"><li>▪ MERV 16 filter rating or an efficiency of 99.97% efficiency for 0.5 micron particles and larger</li><li>▪ No visible emissions shall be allowed from the enclosure containing the abrasive blasting operations, the dust collection system and any associated ductwork</li><li>▪ The facility shall clean up used abrasive daily or as soon as possible after blasting has finished</li><li>▪ The facility shall minimize emissions from stockpiles of new and/or spent abrasive material. Measures shall include covering stockpiled material, wetting stockpiled material; or keeping stockpiled material in containers.</li></ul>
NOC 11922 (2020)	Dry abrasive blasting and spray coating operations in temporary containment systems conducted throughout shipyard	<ul style="list-style-type: none"><li>▪ MERV 16 filter rating or an efficiency of 99.97% efficiency for 0.5 micron particles and larger</li><li>▪ No visible emissions shall be allowed from the enclosure containing the abrasive blasting operations, the dust collection system and any associated ductwork</li><li>▪ The facility shall clean up used abrasive daily or as soon as possible after blasting has finished</li><li>▪ The facility shall minimize emissions from stockpiles of new and/or spent abrasive material. Measures shall include covering stockpiled material, wetting stockpiled material; or keeping stockpiled material in containers.</li></ul>

NC#11517 (2018)	Dry abrasive blasting and spray coating operations at a shipyard	<ul style="list-style-type: none"><li>▪ The abrasive blasting operation shall be conducted in a full enclosure that vents all the exhaust to a dust collector system</li><li>▪ No visible emissions shall be allowed from the enclosure containing the abrasive blasting operations, the dust collection system and any associated ductwork</li><li>▪ Dust collector system – 99.4% efficiency for particle 0.5 micron or larger; or MERV 16 filters based on the emissions analysis that indicates chromium emissions associated with this type of blasting.</li><li>▪ Abrasive material must not contain manganese, arsenic, cadmium or lead or any individual compound containing manganese greater than 1 percent by weight; arsenic, cadmium or lead in amounts greater than 0.1 percent by weight; or total chromium in amounts greater than 0.08 percent by weight. Safety data sheets showing average trace metal analytical for department of transportation requirements.</li><li>▪ The abrasive material storage areas and dust collector system holding bins shall be fully enclosed</li><li>▪ Dust collector system must be equipped with a pressure gauge</li></ul>
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NOC	Project	BACT
11313 (2017)	<p>Increase in emissions from abrasive blasting and spray coating activities in temporary enclosures. Modification to requirements for spray coating operations.</p> <p>This is a similar Order in that it incorporates existing Orders and BACT determinations made under these previous Orders.</p>	<p>Total enclosure to control particulate matter/overspray</p> <p>Abrasive blasting material shall not contain MFHAP specified</p> <p>Conduct abrasive blasting in properly sized enclosure controlled by dust collector</p> <p>Dust collector MERV 15 or higher – ASHRAE 52.2-2007</p> <p>No visible emissions from enclosure or dust collector</p> <p>Minimize emissions from stockpiles of new/and or spent abrasive materials</p> <p>Pressure gauge across dust collector or filter system</p> <p>Spray coating: conduct in properly sized enclosure, meet Subpart II NESHAP requirements, HVLP, air assisted airless, airless or equivalent; best management practices, 98% filter efficiency</p>
11264 (2016)	SAFE Boats – Abrasive blasting and spray coating operations in temporary enclosure	<p>Total enclosure to control particulate matter/overspray</p> <p>Abrasive blasting material shall not contain MFHAP specified</p> <p>Conduct abrasive blasting in properly sized enclosure controlled by dust collector</p> <p>Dust collector MERV 15 or higher – ASHRAE 52.2-2007</p> <p>No visible emissions from dust collector</p> <p>Minimize emissions from stockpiles of new/and or spent abrasive materials</p> <p>Pressure gauge across dust collector</p> <p>Spray coating: conduct in properly sized enclosure, meet Subpart II NESHAP requirements, HVLP or air assisted airless unless precluded; best management practices, 98% filter efficiency</p>

11195 (2016)	Vigor Marine Tacoma – 4 concurrent abrasive blasting/surface coating operations	<p>Total enclosure to control particulate matter/overspray</p> <p>Abrasive blasting material shall not contain MFHAP specified</p> <p>Conduct abrasive blasting in properly sized enclosure controlled by dust collector</p> <p>Dust collector MERV 15 or higher – ASHRAE 52.2-2007</p> <p>No visible emissions from dust collector</p> <p>Minimize emissions from stockpiles of new/and or spent abrasive materials</p> <p>Pressure gauge across dust collector</p> <p>Spray coating: conduct in properly sized enclosure, meet Subpart II NESHAP requirements, HVLP or air assisted airless unless precluded; best management practices, 98% filter efficiency</p>
10918 (2016)	PSNS – 9 Abrasive blasting and surface coating	<p>Total enclosure to control particulate matter/overspray</p> <p>No visible emissions from enclosure, ductwork, equipment or stacks</p> <p>Ventilation system designed to ensure inward flow – at least 4 air changes per hour</p> <p>Acceptable media for abrasive blasting</p> <p>MERV 14 or better filters for abrasive blasting; MERV 16 if chromium or manganese identified in operation</p> <p>Spray coating – Subpart II compliant, HVLP or air assisted airless unless precluded, and best management practices</p>

10267 (2015)	Vigor – 10 concurrent abrasive blasting operation and up to six temporary spray coating operations	<p>Abrasive blasting material shall not contain MFHAP specified</p> <p>Conduct abrasive blasting in properly sized enclosure controlled by dust collector</p> <p>Dust collector MERV 13 or higher – ASHRAE 52.2-2007; MERV 16 if chromium in blast media</p> <p>No visible emissions from dust collector</p> <p>Minimize emissions from stockpiles of new/and or spent abrasive materials</p> <p>Pressure gauge across dust collector</p> <p>Spray coating: conduct in properly sized enclosure, meet Subpart II NESHAP requirements, HVLP or air assisted airless unless precluded; best management practices, 98% filter efficiency</p>
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#### Other Regulatory Agencies BACT

Regulatory Agency and Permitting Action	Emissions Limitation	Operational and Design Limitation
SMAQMD  (No. 97)  (2014)	PM – No listed limit	<ul style="list-style-type: none"> <li>▪ Handling: enclosure of equipment and conveyors and transfer points to baghouse</li> <li>▪ Storage: enclosed storage vented to baghouse</li> </ul>
MaineDep  Abrasive Blasting  (2015)	PM – 99% removal efficiency and a 5% opacity 6-minute block average limit	<ul style="list-style-type: none"> <li>▪ Transfer, storage and processing vented to baghouse</li> <li>▪ Blasting may not take place over open water or during windy conditions</li> <li>▪ During sanding activities, a vacuum sander or other device must be used to completely collect and contain dust particles.</li> </ul>
BAAQMD  BACT Guideline  (1991)	PM – 0.002 gr/dscf	<ul style="list-style-type: none"> <li>▪ Baghouse</li> </ul>
SCAQMD  BACT Guidelines	PM	<ul style="list-style-type: none"> <li>▪ Baghouse; or Cartridge Dust Collector</li> </ul>
TCEQ	PM – 0.01 gr/dscf or 99.9% removal efficiency	<ul style="list-style-type: none"> <li>▪ Use of a fabric filter system such as a baghouse or cartridge filter system</li> </ul>

Regulatory Agency and Permitting Action	Emissions Limitation	Operational and Design Limitation
Tier 1 BACT requirement (dust collector control device) (2018)		<ul style="list-style-type: none"><li>▪ Air to cloth ratio should be based on manufacturers' recommendations for the solids being controlled and the fabric filter cleaning method used</li></ul>

### Analysis

Operation vented to a dust collector/baghouse particulate control system is consistently required across all of the BACT determinations for abrasive blasting associated with shipyards permitted by PSCAA and by determinations from other agencies.

In combination with the requirement to utilize a dust collector, all BACT determinations imposed specific emissions limitations and filtration efficiencies. The form of emission limitation (MERV rating, outlet grain loading, and % removal) has varied across determinations.

#### MERV Rating – most stringent to least stringent

1. MERV 16 or HEPA (NOC 11330, NOC 10267)
2. MERV 15 (NOC 11263, NOC 11313, NOC 11264, NOC 11195)
3. MERV 14 (NOC 10918)

#### Outlet Grain Loading – most stringent to least stringent

1. 0.002 gr/dscf (NOC 11517, BAAQMD)
2. 0.01 gr/dscf (TCEQ, SMAQMD)

#### % Removal – most stringent to least stringent

1. 99.9% (TCEQ)

This BACT was analyzed and determined for NOC 11922. As this is an increase of production and essentially the same process, that BACT analysis is still current and applicable here. The BACT recommended then is as follows:

NOC 11517 required use of either the MERV 16 rating or the 99.97% filter efficiency since filter manufacturers may use either one of these to identify the filter efficiency. The 99.97% efficiency and MERV 16 are not directly comparable. MERV Rating was established by the American Society of Heating, Refrigeration and Air Conditioning Engineers to rate a filter's ability to capture and hold particles and pollutants. MERV ratings were established to test efficiency of static air filters used in general ventilation system, such as room and building air filtration system. The MERV rating system assigns a single number to a filter to identify its minimum performance in removing particulate from the airstream. In previously issued NOCs, the Agency has specified either MERV 15 or MERV 16

filters to be equivalent to the higher efficiencies. The MERV 16 is more effective at capturing the very small particles (0.3 – 1.0 microns), but either MERV 15 or 16 could be considered BACT depending on the proposed operations. (Information presented in the Emission Inventory section of this worksheet indicates only a very small percentage of the mass of the particles are less than 1 micron with the highest percentage associated with steel grit at 0.33%, which would indicate that MERV 15 may be appropriate BACT for some proposed operations.) For dust collectors, the efficiency of the system is going to increase over time as a dust cake coats the filter.

A standard permit condition has been applied to most abrasive blasting operations permitted in the last 5 years is a prohibition on certain metals associated with metal finishing (MFHAP). The language format is obtained from the language in 40 CFR 63.11514(b) defining which abrasive blasting activities are subject to the area source NESHAP for Nine Metal Fabrication and Finishing Source Categories (Subpart XXXXXX NESHAP):

(b) The provisions of this subpart apply to each new and existing affected source listed and defined in paragraphs (b)(1) through (5) of this section if you use materials that contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP), defined to be the compounds of cadmium, chromium, lead, manganese, and nickel, or any of these metals in the elemental form with the exception of lead. Materials that contain MFHAP are defined to be materials that contain greater than 0.1 percent for carcinogens, as defined by OSHA at 29 CFR 1910.1200(d)(4), and greater than 1.0 percent for noncarcinogens. For the MFHAP, this corresponds to materials that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by weight (of the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material.

(b)(1) A dry abrasive blasting affected source is the collection of all equipment and activities necessary to perform dry abrasive blasting operations which use materials that contain MFHAP or that have the potential to emit MFHAP.

The standard condition applies to cadmium, chromium, lead, nickel and manganese and has been utilized for some shipyard operations (e.g. 11517) and not for others (e.g. 11330), based on the specific operations of the facilities under review. Based on previous reviews, there are abrasive blasting materials that do not contain cadmium, chromium, lead and nickel in amounts greater than 0.1%, and manganese in amounts greater than 1.0 percent by weight (of the metal). The requirements of the NESHAP were considered in this BACT determination. Steel shot and steel grit abrasive with up to 1.35% manganese by weight was reviewed under this NOC. Combined application of MERV 16 filters, and total abrasive blast media usage limits with cadmium, chromium, lead and nickel limits from 40 CFR 63 Subpart XXXXXX and manganese limit of 1.35% by weight constitute PM BACT and particulate tBACT for the abrasive blasting.

The applicant indicated they will use non-silica based abrasive materials such as steel grit, mineral slag, steel shot, garnet, aluminum oxide, copper slag and organic materials that meet the requirements of the permit regarding composition.

The following components of BACT and tBACT for PM and inorganic toxic air pollutants (TAP) apply:

1. The abrasive blasting operations shall be conducted in a complete enclosure (e.g., tarpaulins, plastic barriers, shrink wrap, mobile enclosures, physical barriers or similar methods) such that all the air exhausted from the enclosure shall be controlled by a dust collector. The enclosure shall fully surround the blast operation such that there is continuous inward flow except for the exhaust to the dust collector. If dust leaks are noted, repairs must be made. The facility may use multiple enclosures in order to properly size the enclosure for the abrasive blasting operation that is occurring on the dry dock, but each enclosure must meet this criteria.

2. Enclosures shall be vented to dust collection system with minimum filter efficiency specified in permit. The exhaust flow of the dust collectors varies depending on the project and equipment selected by the contractor. Most common baghouse sizes are 12,000, 20,000, and 45,000 cfm. In most previous permits for abrasive blasting at shipyards, we have not specified a grain loading emission limit, but an emission limitation of 0.0002 gr/dscf was established in NOC 11330. Implementation of this standard for NOC 11330 was with use of HEPA as proposed by applicant; MERV 16 would also have been acceptable to meet BACT requirements. I am recommending portable dust collectors be equipped with filters that meet or exceed the following criteria: MERV 16 filter rating or an efficiency of 99.97% efficiency for 0.5 micron particles and larger. The basis of this determination is provided below:
  - a. Shipyard jobs can vary and often necessitate flexibility of operation. Emissions were estimated based on use of steel grit as the abrasive blast material to blast mild steel. However, the applicant is not limited to this scenario. In particular, we would be concerned about the chromium and other metals potentially emitted from this operation and have limited metallic HAP content in blast media used. The amount of chromium is dependent on the blast media used and the base alloy. Requiring the higher MERV 16 rating provides assurances of adequate control for a range of activities.
  - b. Although a HEPA filter was specified in NOC 11330, this was based on the applicant's proposed usage of this type of filter. HEPA filtration is considered to be more stringent than BACT and not considered in this determination. Toxic air pollutant emissions are adequately controlled based on information presented in the National Shipbuilding Research Program (NSRP) report which evaluated average metal concentration in airborne PM emitted from dry abrasive blasting. This analysis provides information about toxic air pollutants associated with abrasive blasting at shipyards which includes both the base alloy or working piece and the media blast material. BACT for composition of abrasive blast media is further addressed below.
  - c. Another option considered is to include a grain loading emission limit in the permit instead of filter efficiency which would look more comprehensively at effectiveness of the dust collector system. However, the abrasive blasting operations are conducted on a very intermittent basis and the applicant is requesting flexibility to have different dust collectors brought in by contractors – different makes, models and sizes. Therefore, establishing a grain loading and requiring compliance testing is not a practical condition for this proposed operation.
3. No visible emissions from the enclosure or dust collector. Keeping the enclosure volume under a negative pressure with sufficient capture velocities on all open areas can be an effective method to control contaminants. The actual airflow required is based on the type of contaminant and the geometry of the blasting enclosure. It is important to draw only enough air to capture just the airborne dust and not the blast material.
4. The facility shall clean up used abrasive daily or as soon as possible after blasting has finished.
5. The facility shall minimize emissions from stockpiles of new and/or spent abrasive material. Measures shall include covering stockpiled material, wetting stockpiled material; or keeping stockpiled material in containers.

**Summary PM BACT & non-volatile tBACT determination – abrasive blasting**

Pollutant	Emissions Limitation
PM TAC	<ul style="list-style-type: none"> <li>99.97% reduction for 0.5 micron particle or larger and no visible emissions</li> <li>No visible emissions from enclosure containing abrasive blasting</li> <li>Abrasive material must not contain manganese, arsenic, cadmium or lead or any individual compound containing manganese greater than 1.35% percent by weight; arsenic, cadmium or lead in amounts greater than 0.1 percent by weight; or total chromium in amounts greater than 0.08 percent by weight</li> </ul>

### SPRAY COATING

#### Similar Permits:

#### **Summary of most recent Agency VOC and PM BACT determination for shipyard spray-coating operations**

Permitting Action	BACT for Spray-coating Operations
NC#11330 (2017)	<ul style="list-style-type: none"> <li>The spray coating operations shall be conducted in a complete enclosure such that all the air exhausted from the enclosure shall be controlled by a filtration system</li> </ul>
NC#11263 (2017)	<ul style="list-style-type: none"> <li>Enclosure vented to filtration system with minimum arrestance efficiency of 98.0 percent</li> </ul>
NC#11313 (2017)	<ul style="list-style-type: none"> <li>Use of higher transfer efficiency spray application equipment unless coating product data sheet specifies application of high solids coating requires use of airless spray guns. Airless spray guns are allowed under 9.16(d) if low viscosity and high solids coatings preclude the use of higher transfer efficiency spray equipment</li> </ul>
NC#11264 (2016)	<ul style="list-style-type: none"> <li>Best management practices for collecting and minimizing evaporation of VOC/organic toxic air contaminants – includes use of closed containers, capture of solvents used for spray gun cleaning, etc.</li> </ul>
NC#11195 (2016)	<ul style="list-style-type: none"> <li>Coatings shall comply with VOHAP limits in 40 CFR Part 63, Subpart II</li> </ul>
NC#10918 (2016)	
NC#10267 (2015)	

#### Analysis:

This operation is a continuation of similar to NOC 11922 at the same location and is similar to the operations at Puget Sound Naval Shipyard, Vigor Shipyards and other ship repair facilities. This BACT determination is based on recent permits issued by the Agency as well as alternative coatings analysis completed by the applicant.

#### Recommendation:

For spray coating operations, recommended BACT/T-BACT is as follows:

1. A combination of enclosing the spray-coating operation, using spray guns that meet a minimum 65 percent transfer efficiency unless applying high solids coating where use of an airless spray gun is recommended, and venting all the exhaust to a filtration system designed to meet a minimum 98 percent overspray arrestance as determined by the 40 CFR Part 63 Subpart HHHHH modified ASHRAE 52.1 test procedure. The applicant indicates that they will use HVLP, LVLP, air assisted airless, airless and plural component pump spraying for epoxy coatings. Airless spray guns are allowed under 9.16(d) if low viscosity and high solids coatings preclude the use of higher transfer efficiency spray equipment. The applicant also indicates that a significant portion of the coatings will be applied with brush or roller. The applicant can install dry filters that meet the efficiency requirements or the dust collector controlling PM emissions from the abrasive blasting operations can also be used to control PM emissions from the spray-coating operations.
2. Best management practices for collecting and minimizing evaporation of VOC/organic toxic air contaminants – includes use of closed containers, capture of solvents used for spray gun cleaning, and other measures as described below:
  - a. Spray-coating equipment must be cleaned in such a way that an atomized mist or spray is not discharged to the open air.
  - b. Spray-coating equipment must be cleaned in a container or washer that captures and collects all residue and cleaning solvent.
  - c. Containers and washers must be kept closed at all times except during manual cleaning or insertion/removal of spray-coating equipment.
3. Limiting material TAPs contents. The Agency has determined that implementation of the volatile organic HAP (VOHAP) emissions standards in 40 CFR Part 63 Subpart II is an appropriate surrogate approach to satisfy tBACT for spray coating at shipbuilding and repair facilities:

Product Name	Subpart II Material Class	Manufacturer	VOC Content (lbs/gal)	VOHAP Content (lb/gal) <sup>1</sup>
Interfine 979 (black)	General Use	International	1.81 lb/gal	
Interguard 7500	General Use		1.57 lb/gal	
International thinner	Thinner		7.09 lb/gal	
Interthane 950	Cleaner		0.0 lb/gal	
Intershield Aluminum 300V	General Use		2.72 lb/gal	
Interthane White	High Gloss		2.73 lb/gal	
Interthane light base	High Gloss		2.72 lb/gal	
Interthane ultra deep base	High Gloss		2.73 lb/gal	
Intertuf 262 gray	General Use		2.33 lb/gal	
Intertuf 262 off-white	General Use		2.38 lb/gal	
Intertuf 262 black	General Use		2.38 lb/gal	
Interzinc greenish-gray	Organic Zinc Specialty Coating		3.92 lb/gal	0.82 lb/gal
Interspeed 6400NA	Anti-fouling		3.21 lb/gal	
Interlac 665	High Gloss		3.5 lb/gal	
Jotun Hard Top Pro	High Gloss	Jotun	2.67 lb/gal	
Jotun Cleaner Degreaser	Cleaner		0.6 lb/gal	
Jotun Thinner #26	Thinner		7.34 lb/gal	
Jotun Tank Guard 412	General Use		1.16 lb/gal	

<sup>1</sup> VOHAP content calculated only for coatings with total VOC content exceeding VOHAP limits of 40 CFR 63 Subpart II

Jotun Tank Guard DW	General Use		0.02 lb/gal	
SW R1K4	Thinner	<b>Sherwin Williams</b>	6.42 lb/gal	
SW R6K30	Thinner		6.76 lb/gal	
SW Copper	General Use		2.71 lb/gal	

TABLE 2 TO SUBPART II OF PART 63--VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS

Coating category	VOHAP limits <sup>a b c</sup>		
	Grams/liter coating (minus water and exempt compounds)	Grams/liter solids <sup>d</sup>	
		$t \geq 45^{\circ} C$	$t < 45^{\circ} C$ <sup>e</sup>
General use.....	340	571	728
Specialty:			
Air flask.....	340	571	728
Antenna.....	530	1,439	
Antifoulant.....	400	765	971
Heat resistant.....	420	841	1,069
High-gloss.....	420	841	1,069
High-temperature.....	500	1,237	1,597
Inorganic zinc high-build.....	340	571	728
Military exterior.....	340	571	728
Mist.....	610	2,235	
Navigational aids.....	550	1,597	
Nonskid.....	340	571	728
Nuclear.....	420	841	1,069
Organic zinc.....	360	630	802
Pretreatment wash primer.....	780	11,095	
Repair and maint. of thermoplastics.....	550	1,597	
Rubber camouflage.....	340	571	728
Sealant for thermal spray aluminum....	610	2,235	
Special marking.....	490	1,178	
Specialty interior.....	340	571	728
Tack coat.....	610	2,235	
Undersea weapons systems.....	340	571	728
Weld-through precon. primer.....	650	2,885	

## Recommendations

Pollutant	Emissions Limitation
VOCs (minus water and exempt compounds)	<ul style="list-style-type: none"> <li>VOC content limit of 3.3 lbs per gallon of antifouling coating applied</li> <li>VOC content of 3.5 lbs per gallon of heat resistant and high-gloss coating applied</li> <li>VOC content of 3.92 lbs per gallon of organic zinc high-build coating</li> </ul>
Volatile TAPs	<ul style="list-style-type: none"> <li>Volatile TAP content limit of 2.9 lbs per gallon of general use, organic zinc high-build or nonskid coating applied</li> <li>Volatile TAP VOC content limit of 3.3 lbs per gallon of antifouling coating applied</li> <li>Volatile TAP VOC content of 3.5 lbs per gallon of heat resistant or high-gloss coating applied</li> </ul>

## **G. EMISSION ESTIMATES**

### **Proposed Project Emissions**

#### Actual Emissions

The following emission estimate was provided by the applicant and saved with the application.

Surface Coating Example Emissions Estimate - Everett Ship Repair

Material	Color	Type	Quantity	VOCs (Total)	Xylenes	Ethyl Benzene	n-Butyl Alcohol	Toluene	MBK	Cumene	1,2-Ethanediol	Propylene glycol monomethyl ether	Phenol	Methanol	n-Butyl Acetate	1,2,4-Trimethyl Benzene	1,3,5-Trimethyl Benzene	Isopropyl Alcohol	Ethylene glycol monobutyl ether	Solids (assumes all non-VOC solid)	PM
			gallons	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	
<b>PRIMARY VOC EMISSIONS</b>																					
INTERTRAC 665	GREEN	Finish Coat	2000	7200.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.4%	
INTERTRAC 665	BLACK	Finish Coat	2000	7204.48	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.6%	
INTERTRAC 665	LIGHT BASE	Finish Coat	2000	7202.00	0.03	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.7%	
INTERTRAC 579	ALL COLORS	Finish Coat	2000	3628.76	0.03	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	2296.00	420.00	0.00	0.00	0.00	0.00	83.4%	
INTERTRAC 5905	LIGHT BASE	Finish Coat	500	1361.70	10.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	503.00	10.00	5.00	0.00	0.00	79.6%	
INTERTRAC 5905	ULTIMATE BASE	Finish Coat	500	1361.70	10.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.5%	
INTERTRAC 9905	WHITE	Finish Coat	500	1361.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	410.00	60.00	0.00	0.00	0.00	0.00	
INTERTRAC 262	BLACK	AC	5000	11897.40	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2000.00	1100.00	0.00	0.00	0.00	79.9%
INTERTRAC 262	WHITE	AC	5000	11897.40	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2000.00	1100.00	0.00	0.00	0.00	77.9%
INTERTRAC 767	OFF WHITE	AC	5000	11900.35	0.00	0.00	4150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2150.00	900.00	0.00	0.00	0.00	80.3%
INTERTRAC 22	GREENISH GREY	AC	500	2042.40	330.00	80.00	70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.00	0.00	80.8%	
John																					
Hardtop Pro	All Colors	Finish Coat	1000	2670.00	270.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1810.00	0.00	0.00	0.00	0.00	77.6%		
Tanklined DW	All Colors	Tank Lining	500	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.4%	
Tanklined DW	All Colors	Tank Lining	500	637.80	13.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.0%	
Shawin-Williams																					
Seaguard 5000 HS Epoxy	AC	AF	10000	20468.80	0.03	0.00	10467.00	0.00	0.00	465.20	0.00	0.00	0.00	3489.00	8000.00	0.00	0.00	0.00	0.00	82.6%	
Seaguard P50 Red	AF	AF	500	336.01	815.85	181.30	362.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.6%	
Seaguard P50 Black	AF	AF	500	336.01	815.85	181.30	362.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.6%	
5-W Vinyl Copper	AF	AF	10000	2712.30	0.00	0.00	9855.00	0.00	0.00	0.00	0.00	0.00	0.00	55412.00	0.00	0.00	0.00	0.00	86.3%		
Thinner/Solvents/Cleaners																					
International GT-2207-10	Thinner	Thinner	5000	14178.00	249.46	0.00	421.40	0.00	0.00	139.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
International GT-2207-10	Cleaner	Cleaner	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
John Thinner #26	Thinner	Thinner	500	3649.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3649.60	0.00	0.00	0.00	0.00	0.00	
Shawin Williams F14C	Reducer for Vinyl Copper AF	Thinner	1000	6420.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Shawin Williams R1033	Reducer for Seaguard 5000 HS	Thinner	1000	6760.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Cleaner Degreaser (150L)	Solvent	Thinner	400	240.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL (gallons)			52,400	15212.47	2544.51	559.90	8750.50	4.00	0.00	605.18	0.00	0.00	0.00	2296.00	66252.60	38980.50	4189.81	3580.00	419.82		
TOTAL Primary (lbs/yr)				75.6	1.3	0.3	4.8	0.2	0.0	0.3	0.0	0.0	0.0	1.1	33.7	18.9	2.1	1.8	0.4		
TOTAL Limited Use (gallons)				5,600	14833.36	9507.42	3008.25	2941.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TOTAL All (lbs/yr)				58,000	166,046	12,052	6,128	41,692	4	0	605	0	0	0	2,296	66,251	40,002	4,140	3,580	820	
TOTAL All (tpy)					83	6	1	21	0	0	0	0	0	1	33	20	2	2	0	302.0 lbs PM 0.15 tons PM	
MAX SINGLE HAP (tpy)					6.0																
TOTAL HAP (tpy)					8.3																

## Potential Emissions

The permitted potential to emit calculations are based on operating at 100% rated capacity and 7,300 hour per year, 20 hours per day and no more than 58,000 gallons of VOC containing material per year.

## Facility-wide Emissions

### Actual Emissions and Potential Emissions

For the flexibility of work, the project emissions were evaluated on a site wide basis, and assumes that all the emissions could come out of any stack. The facility wide emission cap was previously analyzed for NOC 12245. Dry dock 1, the 'Faithful Servant', was evaluated with a stack height of 65 feet. Dry dock 2, the 'Emerald Lifter', was evaluated with a stack height of 38 feet. Dry Dock 3, the Hercules, was evaluated with a stack height of 75 feet. The upland enclosure was evaluated with a stack of 35 feet. Stack heights, expected fan speeds and workloads are shown in the table below.

	Dry Dock 1	Dry Dock 2	Dry Dock 3	Painting/Abrasive Blasting Tent
Stack Height (ft)	65	38	75	35
Stack Exit Diameter (ft)	3	2.33	3	2.33
Stack Flow Rate (CFM)	20,000 min 40,000 max	20,000 min 40,000 max	40,000 min 80,000 max	20,000 min 40,000 max
Stack Exit Temperature (°F)	68	68	68	68
Percentage of Emissions (%)	22.5	22.5	45	10

The Previously reported emissions are shown below.

Reporting Source? Yes. Past emissions are below:

Emission Summary (30287 - Everett Ship Repair)																
Show Emission Totals in: <input checked="" type="checkbox"/> Pounds <input type="checkbox"/> Tons																
Search																
Reg	VOC	TAC	HAP	CAS	Chemical Name	ASIL	2024 lbs	2024 tons	2023 lbs	2023 tons	2022 lbs	2022 tons	2021 lbs	2021 tons	2020 lbs	2020 tons
30287	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	43207	Other Volatile Organic Compounds (VOC)	0.00000000										
30287	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1330-20-7	Xylenes	1500.00000000	3694	1.85	7211	3.61	3126	1.56	5728	2.86	7095	3.55
30287	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		HAP Total		3694	1.85	7211	3.61	3126	1.56	5728	2.86	7095	3.55
30287	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		TAC Total		3694	1.85	7211	3.61	3126	1.56	5728	2.86	7095	3.55
30287	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		VOC Total		3694	1.85	7211	3.61	3126	1.56	5728	2.86	7095	3.55

## H. 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. The source is considered a “**natural minor**”.

## I. AMBIENT TOXICS IMPACT ANALYSIS

The estimated potential toxic air pollutant (TAP) emissions at operating at 100% rated capacity and 8760 hour per year for each new or modified emission unit (*or based on limit in permit*). 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.

Emission estimates were supplied by the applicants. The spray coating emissions are included below, as well as included with the application. Paints included with expected quantities for each were provided, for a total of 52,400 gallons per year of coatings. These same emissions and emission rates were analyzed and compared to SQER's for NOC 12445. A summary of all TAPs is included in the folder with this worksheet. Xylene, ethyl benzene, 1,3,5-trimethylbenzene and hexavalent chromium are above the SQER and were modelled plant wide, with the stack heights and expected through put shown below:

	Dry Dock 1	Dry Dock 2	Dry Dock 3	Painting/Abrasive Blasting Tent
Stack Height (ft)	65	38	75	35
Stack Exit Diameter (ft)	3	2.33	3	2.33
Stack Flow Rate (CFM)	20,000 min 40,000 max	20,000 min 40,000 max	40,000 min 80,000 max	20,000 min 40,000 max
Stack Exit Temperature (°F)	68	68	68	68
Percentage of Emissions (%)	22.5	22.5	45	10

A summary of emission estimates and modelling results are shown below:

	Xylenes	Ethyl Benzene	Toluene	MIBK	Cumene	Propylene glycol monomethyl ether	Phenol	Methanol	Isopropyl Alcohol	Ethylene glycol monobutyl ether	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
1330207	100414	108883	108101	98828	107982	108952	67561	67630	111762	95-63-6	108-67-8	
HAP?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	
TAP?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
SQER	16	65	370	220	30	520	15	1500	5.9	6.1	4.40E+00	4.40E+00
ASIL	220	0.4	5000	3000	400	7000	200	20000	3200	82	6.00E+01	6.00E+01
Avg Period	24-hr	year	24-hr	24-hr	24-hr	24-hr	24-hr	24-hr	1-hr	24-hr	24-hr	24-hr
Lb/Avg Period	33	1600	0.01	0.00	0.7	0.00	0.00	3.15	0.11	0.84	51.4	4.3
Lb/hr	1.37E+00	1.83E-01	0.00	0.00	0.03	0.00	0.00	0.13	0.11	0.04	2.14	0.18
Above SQER?	yes	yes	no	no	no	no	no	no	no	yes	no	
Model Conc.	10.48	0.37								16.39	1.38	

While this is not an increase in emissions, it shows compliance with the new stack height and filter system. The stack parameters used are also shown below:

	Dry Dock 1	Dry Dock 2	Dry Dock 3	Painting/Abrasive Blasting Tent
Stack Height (ft)	65	38	75	35
Stack Exit Diameter (ft)	3	2.33	3	2.33
Stack Flow Rate (CFM)	20,000 min 40,000 max	20,000 min 40,000 max	40,000 min 80,000 max	20,000 min 40,000 max
Stack Exit Temperature (°F)	68	68	68	68
Percentage of Emissions (%)	22.5	22.5	45	10

If we apply the percentage expected of the total throughput of the facility for each section we get the following table showing the per booth limits.

Location	Dry Dock 1	Dry Dock 2	Dry Dock 3	Blasting Tent	Plant limit per year
Percentage of Throughput Modelled	22.5	22.5	45	10	100
Per location Abrasive blasting (tons/year)	14625	14625	29250	6500	65000
Per location Ethyl Benzene (lb/year)	360	360	720	160	1600
Per location Xylene (lb/year)	2700	2700	5400	1200	12000

The modelling was reviewed and no discrepancies were found. Modelling was included in the application.

## J. APPLICABLE RULES & REGULATIONS

### 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.

**SECTION 9.15:** It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. Reasonable precautions include, but are not limited to, the following:

- (1) The use of control equipment, enclosures, and wet (or chemical) suppression techniques, as practical, and curtailment during high winds;
- (2) Surfacing roadways and parking areas with asphalt, concrete, or gravel;
- (3) Treating temporary, low-traffic areas (e.g., construction sites) with water or chemical stabilizers, reducing vehicle speeds, constructing pavement or rip rap exit aprons, and cleaning vehicle undercarriages before they exit to prevent the track-out of mud or dirt onto paved public roadways; or

(4) Covering or wetting truck loads or allowing adequate freeboard to prevent the escape of dust-bearing materials.

**SECTION 9.16(c):** General Requirements for Indoor Spray-Coating Operations. It shall be unlawful for any person subject to the provisions of this section to cause or allow spray-coating inside a structure, or spray-coating of any motor vehicles or motor vehicle components, unless all of the following requirements are met:

- (1) Spray-coating is conducted inside an enclosed spray area;
- (2) The enclosed spray area employs either properly seated paint arresters, or water-wash curtains with a continuous water curtain to control the overspray; and
- (3) All emissions from the spray-coating operation are vented to the atmosphere through an unobstructed vertical exhaust vent.

**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.

#### 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.

WAC 173-400-111(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.

#### Federal N/A

#### K. PUBLIC NOTICE

The Agency has determined that the project has significant public interest, and will conduct a public comment period on a draft Order of Approval, pursuant to 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 NO<sub>x</sub>, VOC, or SO<sub>2</sub>, 100 tpy CO, 15 tpy PM<sub>10</sub>, 10 tpy PM<sub>2.5</sub>, 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:

## New Construction Projects

Company	Address	Project Description	Date Posted	Contact Engineer
Everett Ship Repair	<a href="#">2730 Federal Ave, Everett, WA 98201</a>	Addition of third dry dock and an uplands paint/abrasive blasting enclosure.	10/2/25	<a href="#">Carl Slimp</a>

## L. 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.

### Specific Conditions:

#### Temporary Containment System Requirements

3. All abrasive blasting and all spray coating operations shall be conducted in a complete enclosure (e.g., tarpaulins, plastic barriers, shrink wrap, mobile enclosures, physical barriers or similar methods) that prevents the escape of abrasive blasting dust and paint overspray beyond the enclosure. Multiple enclosures may be used at the facility depending on the size of the operation. Each enclosure shall have overlapping or closed seams, and no rips, tears or gaps that may allow the abrasive blasting dust or paint overspray to escape. Each enclosure shall be designed such that the abrasive blasting or spray-coating work area is maintained under negative pressure.
4. Exhaust from abrasive blasting and spray coating in each temporary enclosure on Dock 1 ('Faithful Servant' dry dock) shall be routed through a vertical unobstructed stack with exhaust height of 65 feet.
5. Exhaust from abrasive blasting and spray coating in each temporary enclosure on Dry Dock 2 ('Emerald Lifter' dry dock) shall be routed through a vertical unobstructed stack with exhaust height of 38 feet.

6. Exhaust from abrasive blasting and spray coating in each temporary enclosure on Dry Dock 3 ('Hercules' dry dock) shall be routed through a vertical unobstructed stack with exhaust height of 75 feet.
7. Exhaust from abrasive blasting and spray coating for the upper land spray and abrasive blasting booths shall be routed through a vertical unobstructed stack with exhaust height of 35 feet.

#### **Abrasive Blasting Operational Requirements**

8. Abrasive blast grit usage at the facility shall be limited to 65,000 tons over any consecutive 12-month period. The owner or operator shall maintain records of the estimated usage of blast grit on a monthly basis. Estimates can be made based on expended grit (single use media), hopper fills and refills (reusable grit), or based on total hours of operation. Each location in the facility shall be further limited:
  - a. Dry Dock 1: 14,625 tons abrasive blast grit over any consecutive 12-month period
  - b. Dry Dock 2: 14,625 tons abrasive blast grit over any consecutive 12-month period
  - c. Dry Dock 3: 29,250 tons abrasive blast grit over any consecutive 12-month period
  - d. Upper land abrasive blasing booth: 6,500 tons abrasive blast grit over any consecutive 12-month period
9. During the abrasive blasting operation, all exhaust from each temporary enclosure shall be exhausted to a dust collector with 100% capture equipped with filters that meet one of the following requirements:
  - a. A system that meets a minimum of 99.97% particulate control efficiency for particles  $0.05 \mu\text{m}$  and larger as determined using ASHRAE 52.2-2007 or equivalent; or
  - b. A system that meets a minimum initial efficiency reporting value (MERV) of 16 as determined by ASHRAE Method 52.2-2007.

The owner or operator shall maintain records provided by the filter manufacturer or supplier demonstrating compliance with one of the filter standards above.
10. There shall not be any visible emissions from the temporary enclosure, ductwork or dust collectors.
11. Each dust collector shall be equipped with a gauge to measure the pressure drop across the dust collector. The acceptable pressure drop range shall be clearly marked on or near the gauge and documented in the facility Operation and Maintenance Plan.
12. At least once each day when abrasive blasting operations occur in the temporary enclosure, the owner or operator shall inspect the system to verify the following conditions are met:
  - a. The enclosure has overlapping seams and is free of rips, tears or gaps that may allow the particulate matter to escape;
  - b. There are no visible emissions from the enclosure, ductwork and dust;
  - c. There is no particulate fallout in the area around the dust collector; and
  - d. The pressure drop measurement gauge is operating and the pressure drop across the dust collector system is within the operating range.

If requirements described above are not met, the owner or operator shall take corrective action or discontinue abrasive blasting operations until corrective action is taken. The owner or operator shall document inspection findings and any corrective action taken.

13. The abrasive blasting material shall not contain manganese in amounts greater than 1.35 percent by weight; arsenic, cadmium, or lead in amounts greater than 0.1 percent by weight; or total chromium in amounts greater than 0.08 percent by weight. Stainless steel blasting material shall not be used. The owner or operator shall maintain copies of Safety Data Sheets (SDS), Environmental Data Sheets (EDS), Product Data Sheets (PDS), manufacturer specific formulation data or analytical data to demonstrate compliance with this requirement.
14. Dust and used abrasive shall be cleaned up daily or as soon as possible after blasting has finished (whichever is sooner).
15. Emissions from stockpiles of new and/or spent abrasive material shall be minimized. Measures shall at least include covering stockpiled material, wetting stockpiled material, or keeping stockpiled material in closed containers.

### **Spray Coating Operation Requirements**

16. The owner or operator shall not apply more than 58,000 gallon/year of VOC containing materials within any consecutive 12-month period. Orders or purchase transactions for material used, along with the associated chemical constituent compositions (VOC content), may be used in lieu of usage information.
17. The coatings applied or used must not exceed the following VOC content (minus water and exempt compounds) limits:
  - a. 3.50 lbs of VOCs per gallon of heat resistant or high-gloss coating, as applied or used;
  - b. 3.30 lbs of VOCs per gallon of antifouling coating, as applied or used;
  - c. 3.92 lbs of VOC per gallon of organic zinc coating, as applied or used; and
  - d. 2.90 lbs of VOCs per gallon of any other coating not specified above, as applied or used.
18. The owner or operator is prohibited from spray applying coatings that contain compounds of chromium, lead, manganese, nickel, or cadmium.
19. All coatings shall comply with the following Volatile Organic Hazardous Air Pollutant (VOHAP) limits. The owner or operator shall maintain records identifying each coating used (similar batches may be grouped together), the appropriate coating category, the applicable VOHAP limit, and the VOHAP content of the specific coating:
  - e. 3.3 lbs of VOHAP per gallon of antifouling coating applied;
  - f. 3.5 lbs of VOHAP per gallon of heat resistant or high-gloss coating; and
  - g. 2.9 lbs of VOHAP per gallon of any other coating not specified above.
20. Ethylbenzene emissions must not exceed 1,600 pounds during any consecutive 12-month period. Orders or purchase transactions for material used in the spray-coating operations and the chemical constituent compositions (ethylbenzene content) may be used to determine ethylbenzene emissions. The ethylbenzene content of coatings not used and disposed of as waste may be deducted from the order transactions to determine the ethylbenzene emissions. For the purposes of

this order, unused coating disposed of as waste shall be any unused coating in original container or unused mixed coating in a storage container disposed of as waste which had never been transferred to equipment for spray or hand application. Ethyl benzene usage shall be limited per location in the plant as follows:

- a. Dry Dock 1: 360 lbs of ethyl benzene over any consecutive 12-month period
- b. Dry Dock 2: 360 lbs of ethyl benzene over any consecutive 12-month period
- c. Dry Dock 3: 720 lbs of ethyl benzene over any consecutive 12-month period
- d. Upper land spray booth: 160 lbs of ethyl benzene over any consecutive 12-month period

21. Xylene emissions must not exceed 12,000 pounds during any consecutive 12-month period. Orders or purchase transactions for material used in the spray-coating operations and the chemical constituent compositions (xylene content) may be used to determine xylene emissions. The xylene content of coatings not used and disposed of as waste may be deducted from the order transactions to determine the xylene emissions. For the purposes of this order, unused coating disposed of as waste shall be any unused coating in original container or unused mixed coating in a storage container disposed of as waste which had never been transferred to equipment for spray or hand application. Xylene usage shall be limited per location in the plant as follows:

- a. Dry Dock 1: 2,700 lbs of xylene over any consecutive 12-month period
- b. Dry Dock 2: 2,700 lbs of xylene over any consecutive 12-month period
- c. Dry Dock 3: 5,400 lbs of xylene over any consecutive 12-month period
- d. Upper land spray booth: 1,200 lbs of xylene over any consecutive 12-month period

22. During spray coating operations, all exhaust from each temporary enclosure shall be exhausted with 100% capture through a dry filter system that meets one of the following standards:

- a. A minimum initial overspray arrestance of 98 percent. Overspray arrestance must be determined using the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Method 52.1 procedure and substituting the synthetic test dust feed with high solids bake enamel delivered at a rate of at least 135 grams per minute from a conventional (non-HVLP) air-atomized spray gun operating at 40 pounds per square inch (psi) air pressure with a minimum air flow rate across the filter of 150 feet per minute. A system that complies with 40 CFR Part 63, Subpart HHHHHH meets this requirement.
- b. A system that meets a minimum initial efficiency reporting value (MERV) of 13 as determined by ASHRAE Method 52.2. The dust collector used for abrasive blasting operation meets this requirement.
- c. A system that meets a minimum initial filtration efficiency of 98 percent over the particle diameter range from 0.3 to 10 microns. The particle size dependent filtration efficiencies must be determined using either Environmental Protection Agency (EPA) Method 319 or an Agency approved method.

Documentation demonstrating compliance with one of the filter standards listed above shall be available for inspection upon request.

23. A gauge (manometer or magnehelic) shall be installed and maintained that measures pressure drop across each dry filter system or portable dust collector. The acceptable pressure drop range shall be

clearly marked on or near the gauge and documented in the facility Operation and Maintenance Plan.

24. All spray application of material must be applied with an air-assisted airless spray gun, electrostatic applicator, or high-volume low-pressure (HVL) spray gun. Airless spray guns may be used for high viscosity high solids coatings for which airless application is recommended by the manufacturer. Alternative spray technology must meet a minimum transfer efficiency of 65 percent. The procedure used to demonstrate a spray technology's transfer efficiency must be equivalent to South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989" and "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns, September 26, 2002." A plan describing the test procedure must be developed and submitted to the Agency 30 days prior to conducting any spray technology transfer efficiency test.
25. At least once each day when spray coating operations occur in the temporary containment system, the owner or operator shall inspect the system to verify the following conditions are met:
  - a. The pressure drop across the exhaust filter system is within the acceptable range;
  - b. The enclosure is free of rips, tears or gaps that may allow overspray to leave the enclosure; and
  - c. There is no evidence of paint overspray from previous activities.If requirements described above are not met, the owner or operator shall take corrective action. The owner or operator shall only start spray coating operations after the requirements described above are met. The owner or operator shall document inspection findings and all corrective action taken.
26. Best management practices shall be used in all coating operations, including the collection of VOC containing materials used for cleanup of equipment to minimize evaporation to the atmosphere, keeping containers used for the storage and disposal of VOC containing materials closed except when these containers are being cleaned or when materials are being added, mixed or removed; and storing solvent rags and paper for disposal in closed containers.

#### **Recordkeeping and Reporting Requirements**

27. The following records shall be kept onsite and up-to-date, and be made readily available to Agency personnel upon request:
  - a. The VOC (minus water and exempt compounds) content in lb/gallon of each material used and applied in order to demonstrate compliance with Conditions 16, 17, and 19. Safety Data Sheets (SDS), Environmental Data Sheets (EDS), Product Data Sheets (PDS) or manufacturer specific formulation data may be used to document the contents.
  - b. Copies of SDS, EDS, PDS or manufacturer specific formulation data to demonstrate compliance with Condition 17, 18, 19, 20 and 21.
  - c. Documentation to demonstrate compliance with the abrasive blasting filter requirements of Condition 9.
  - d. Documentation to demonstrate compliance with the spray coating filter requirements of Condition 22.

- e. Documentation to demonstrate compliance with the spray gun requirements of Condition 24.
- f. The Operation and Maintenance (O&M) plan. The O&M plan shall be developed and implemented per Agency's Regulation I. The O&M plan shall include filter maintenance, filter inspection procedures, and corrective action procedures for when the pressure drop falls outside of acceptable range.

28. The following records shall be kept onsite, updated within 30 days at the end of each month for at least two years from the date of generation, and be made readily available to Agency personnel upon request:

- a. Documentation of the total amount in gallons of all VOC-containing (minus water and exempt compounds) materials applied and used per month and during any consecutive 12-month period in order to demonstrate compliance with Condition 16. Order and purchase records may be used to estimate usage.
- b. Documentation of the total amount in tons of all abrasive blasting media used per month and during any consecutive 12-month period in order to demonstrate compliance with Condition 8.
- c. Documentation of the total amount of ethylbenzene applied or used in pounds for each month and during any consecutive 12-month period in order to demonstrate compliance with Condition 20. Order and purchase records may be used to estimate usage.
- d. Documentation of the total amount of xylene applied or used in pounds for each month and during any consecutive 12-month period in order to demonstrate compliance with Condition 21. Order and purchase records may be used to estimate usage.
- e. A written log documenting inspection findings and corrective action as required by Conditions 12 and 25.
- f. Documentation verifying any corrective action taken to maintain compliance with this Order of Approval, if any, and the date and time it was conducted.

29. The Agency shall be notified, in writing, within 30 days of discovering an exceedance of any limitations identified in Conditions 8, 16, 20, or 21.

30. Upon approval, this permit shall cancel and supersede NOC 12245 approved 1/20/2023.

#### **M. CORRESPONDENCE AND SUPPORTING DOCUMENTS**

**N. REVIEWS**

<b>Reviews</b>	<b>Name</b>	<b>Date</b>
Engineer:	Carl Slimp	12/9/2025
Inspector:	Rain Yates	12/12/2025
Second Review:	John Dawson	12/19/2025
Applicant Name:	<b>Jon Shaton</b>	