



Level II Source Control Report- Copper

Seattle Yachts- North Yard- BYGP#: WAG994608

For 3 Benchmark Exceedances in 2024

Report Date: November 12, 2024

Prepared by: Dave Habenicht, Seattle Yachts Facilities Manager

Introduction

This report serves as a Level Two Source Control Report in accordance with the conditions of the Boatyard General Permit (Permit) issued by the Washington State Department of Ecology (Ecology). The Permit is issued by Ecology in accordance with the federal National Pollutant Discharge Elimination System (NPDES). Stormwater discharge from the facility is covered under the NPDES Boatyard Permit No. WAG994480. This "Level Two Response" is required by the Permit because 3 stormwater samples from 2024 from the Anacortes boatyard exceeded the copper benchmark concentration.

This Level Two Source Control Report provides a summary of the investigation of all reasonable, available, and applicable stormwater treatment best management practices (BMPs) to reduce stormwater contaminant levels below Permit benchmark values.

Background

Seattle Yachts- North Yard is located at 2417 T Avenue in Anacortes, Washington, and a vicinity map is provided as Figure 1. As described in Seattle Yachts Stormwater Pollution Prevention Plan (SWPPP), The facility falls under Standard Industrial Code (SIC) No. 3732, Boat Building and Repairing. The facility falls under North American Industrial Classification Schedule (NAICS) code 336612, Boat Building. Activities conducted at the facility include:

- Pressure washing
- Bottom and top side painting
- Engine, prop, shaft, and rudder repair
- Hull welding and grinding
- Hull repair, joinery, and bilge cleaning
- Fuel and lubrication repair and replacement
- Buffing and waxing
- Marine sanitation device (MSD) repair and replacement
- Other activities necessary to maintain or construct a vessel

The yard has capacity of up to 18 vessels at any given time. Numerous vessels are hauled out of the water per year, and many of those vessels are pressure washed. While this activity is conducted year-round, the majority of the work takes place in the spring, summer, and fall. The boat maintenance and repair area is separate from the boat pressure wash area. The facility and the stormwater drainage features are shown on Figure 2.

Facility Stormwater Drainage

The boat maintenance and repair area is located at 2417 T Ave, Anacortes (see attached Figure 2) and consists of asphalt and concrete paved surfaces and the facility's main building with an area of approximately 0.78 acres, including the wash pad area. Most of the stormwater runoff from the boat maintenance and repair area drains into catch basins that connect into one discharge conveyance pipe that leaves the facility to eventually discharge into surface waters. The stormwater collected from the boat maintenance and repair area is sampled as part of the facility's monitoring program at a catch basin on the east side of the facility (sampling point SW-1) before leaving Seattle Yachts property.

The boat pressure wash area is located just east of the facility's main building and consists of a concrete paved drainage area with dimensions of approximately 83 ft by 51 ft (4,300 ft² or 0.10 acres; Figure 2). When vessel washing is occurring, the pressure wash area drains east to a trench drain located on the east side of the boat pressure wash area. Water collected in the trench drain is pumped to the pressure wash wastewater tank for pretreatment prior to discharge to the sanitary sewer. Outside of the wash pad area, the ground is sloped so that clean stormwater drains to separate storm drain catch basins.

Stormwater Sampling Results

In 2024, facility stormwater discharge at designated monitoring point SW-1 exceeded the copper benchmark during the permit-required sampling months of **April, May, and October**. Therefore, the facility has exceeded permitted benchmarks for a monitoring period for copper on three occasions, thereby triggering a Level Two Response investigation and the need for this Level Two Source Control Report.

Applicable Stormwater Source Control Best Management Practices

Several applicable source control measures (e.g., use of plastic or tarpaulin barriers beneath boat hulls, use of vacuum sanders, and daily or more frequent removal of accumulated solids) have already been implemented. Additional actions to eliminate old sources, such as pressure washing storm drain trenches/pipes/vaults have been added to BMP's to further reduce copper and zinc runoff. Seal coating the existing asphalt was performed less than 10 years ago.

To further reduce the presence of copper, all storm drain pipes and collection vaults were cleaned by removing all collected sediment from collection vaults and then cleaning using a pressure washer and jetted drain cleaning snake on September 4, 2024.

Paved surfaces of boat yard were pressure washed in an approximate 30ft radius surrounding each storm drain vault to reduce and remove older lodged copper sediments from the asphalt surface.

While still in the summer dry season (September), and with a **dry** boatyard, we noticed ground water seeping into the storm drain vaults thru the vault seams and also thru cracks in the grouting around the drain pipes entering/exiting the vaults. We noticed **greenish-tinged stains** in these damp areas where the water was seeping into the vaults- evidence of the presence of copper in the

groundwater. This groundwater is very likely contributing to the presence of copper in our storm water samples. When weather becomes dry enough to adequately dry the interior surfaces of the vaults, we will seal the interior surfaces of the vaults with **Cem-Kote- Flexible Cementitious Waterproofing** and re-grout pipes with **Blue Line Speed Crete Grouting** to stop the intrusion of the groundwater into the storm drain vaults.

Source control measures are generally the most cost-effective, involving relatively low cost for the level of water quality improvement that is possible. However, because past source control efforts have not been able to consistently achieve the benchmark values for copper, Seattle Yachts may still need to install stormwater treatment options, as listed in the following section. These proposed additional treatments provide future contingency options for the facility if stormwater treatment on its own is not adequate to consistently meet the copper benchmark values.

Stormwater Treatment Best Management Practices

Catch basin insert filters stormwater have been added to treatment BMPs and implemented as solutions to assist in reducing Seattle Yachts's copper levels to below Permit benchmark values. Constructed wetlands, StormwaterRx AQUIP treatment, detention pond/wet pond installation, bioswale installation, infiltration, and discharge to the sanitary sewer have been proposed as additional potential solutions.

Discharge of Stormwater to the Sanitary Sewer

Seattle Yachts currently sends treated pressure wash wastewater and stormwater that falls onto the pressure wash pad to the City of Anacortes' wastewater treatment plant but does not discharge stormwater from the wash pad to the sanitary sewer during times when no washing activity is occurring and does not discharge stormwater from the rest of the boat maintenance and repair area to the sanitary sewer.

Report prepared by: Dave Habenicht, Seattle Yachts Facilities Manager

Date: December 27, 2024, 2024

Signature:  _____

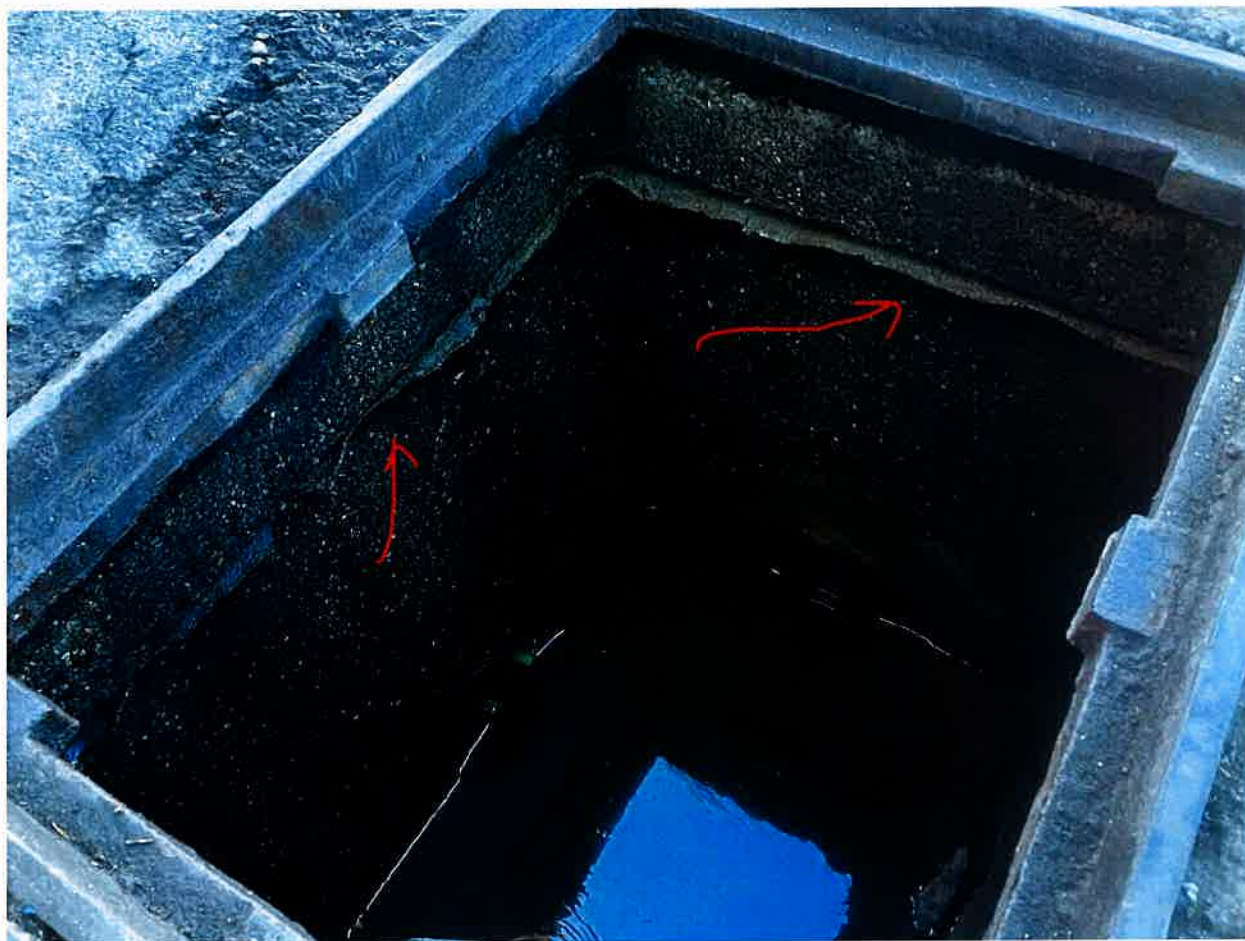
Attachments: Figure 1. Vicinity Map

Figure 2. Stormwater Drainage in Boat Maintenance and Repair Area

Figure 3. Storm Drain Vault Photos

Figure 3.

North Yard Storm Drain Vault Photos- Evidence of copper from groundwater under paved yard surface leaching into vault through poorly sealed seams and pipe grouting. Notice green-tinged stains on concrete below seams and around cracked pipe grouting.



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