Fact Sheet for
NPDES and State Waste Discharge
General Permit for Boatyards

July 6, 2016

Purpose of this fact sheet

This fact sheet is a companion document to the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Boatyards (boatyard general permit). It explains the nature of the proposed discharges, summarizes the history of the permit, documents the Washington State Department of Ecology's (Ecology's) decisions for limiting the pollutants in the wastewater discharges, provides the regulatory and technical bases for those decisions, and fulfills the requirements of Washington Administrative Code (WAC) Section 173-226-110.

On March 16, 2016, Ecology prepared and made available a draft permit for boatyards and this accompanying fact sheet for public evaluation during a minimum 30-day review period (WAC 173-226-130). Copies of the draft general permit and this fact sheet were available at Ecology regional offices and via the Internet for public review and comment from March 16, 2016, through April 29, 2016. Details about how to prepare and submit comments are in Appendix D (Public Involvement Information).

After the public comment period closed, Ecology made changes to the draft NPDES general permit, summarized substantive comments, and provided responses to them in Appendix E (Responses to Comments) of this fact sheet. Ecology will maintain the final fact sheet and permit in the permit file as part of the legal history.

Summary

The boatyard general permit provides coverage for discharges of treated pressure-wash wastewater and stormwater runoff from certain boatyards to waters of the State. The general permit provides coverage for boatyards that:

1. Engage in the construction, repair, or maintenance of small vessels (boats or ships), where 85% of those vessels are 65 feet or less in length; or

2. Generate more than 85% of their gross receipts from revenues returned from the construction, repair, or maintenance of those small vessels.

The boatyard general permit includes both technology-based and water quality-based limits or benchmarks depending on the source of the wastewater and the receiving water.

This fact sheet reviews the monitoring data reported during the previous permit cycle and certain ambient receiving water data for a similar time period. Based on those data, a reassessment of the potential to pollute found that a lower discharge limit for acute exposure to total lead was warranted for boatyards that discharged stormwater runoff to Lake Union and the Lake Washington Ship Canal.

Aside from numerous clarifying and typographical changes, the boatyard general permit contains the following changes from the current permit (effective June 1, 2011, through May 31, 2016).

1. Addition of a Conditional No Exposure Exemption from the permit for facilities or Permittees that provide certification and that receive Ecology's written approval. (Permit Section S1.C)

2. Decrease in the maximum daily limit for total lead discharged to Lake Union or the Lake Washington Ship Canal from 185 ug/L to 78 ug/L. (Permit Section S2.D.3)

3. Addition of a maximum daily limit of 30 mg/L for total suspended solids discharged in stormwater runoff to waterbody segments identified on the 303(d) list as Category 5-impaired due to sediment contaminated with boatyard pollutants. (Permit Section S2.D.3)

4. Addition of a mandatory best management practice to address the Permittee's oversight of do-it-yourselfers and other non-boatyard contractors who conduct boatyard activities at the Permittee's facility. (Permit Sections S3.L and S8.B.3(h))

5. Significant rewrite of Permit Section S7 to clarify the requirements of Permittees that obtain monitoring results that exceed benchmarks. These clarifications involved no policy or practical changes for Ecology or Permittees. (Permit Section S7)

6. Deletion of economic waivers, which were incorrectly included in the current permit. (Former Permit Section S7.A.3.d)

7. Requirement that Permittees provide all permit-required monitoring and other reports to Ecology in an electronic form, unless Ecology has issued a written Permittee-specific waiver. (Permit Section S9)

As a consequence of these changes and other comments that Ecology received from the public concerning the draft versions of the permit and this fact sheet, Ecology renumbered some of the page and section numbers. Ecology has also placed its responses to the public comments into Appendix E of this fact sheet.

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INTRODUCTION

The Federal Clean Water Act (CWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the CWA is the National Pollutant Discharge Elimination System (NPDES) permit program, administered by the U.S. Environmental Protection Agency (EPA). The U.S. EPA has delegated the administration of the NPDES permit program to the State of Washington. The Washington State Legislature accepted the delegation and assigned the power and duty for conducting NPDES permitting and enforcement to the Washington State Department of Ecology (Ecology). The Legislature defined Ecology's authority and obligations for the wastewater discharge permit program in Chapter 90.48 of the Revised Code of Washington (RCW).

The Washington Administrative Code (WAC) requires that boatyards obtain coverage under an NPDES general permit before discharging wastewater to the waters of the State. The following regulations apply to NPDES general permits:

- Water quality criteria for groundwaters, bases for effluent limits, and other requirements (Chapter 173-200 WAC)
- Water quality criteria for surface waters, bases for effluent limits, and other requirements (Chapter 173-201A WAC)
- Sediment management standards, bases for effluent limits, and other requirements (Chapter 173-204 WAC)
- Whole effluent toxicity testing and limits (Chapter 173-205 WAC)
- Procedures for NPDES permits (Chapter 173-220 WAC)
- Determination and payment of fees (Chapter 173-224 WAC)
- Procedures for issuing and administering NPDES general permits (Chapter 173-226 WAC)
- Plans and reports for construction of wastewater facilities (Chapter 173-240 WAC)

A general permit is designed to provide environmental protection under conditions typical for the covered industrial group. This permit regulates pollutant discharge primarily through best management practices (BMPs) designed to minimize or eliminate the discharge of pollutants, stormwater treatment, numeric benchmarks or limits to assure pollutant control, and prohibition

of all pressure-wash wastewater discharges to surface water. This permit may not be appropriate for every situation. When site-specific conditions at a facility are not typical of the industrial group or they are beyond the scope of the general permit, an individual permit may be required. The establishment of a general permit for the small shipyard industry is appropriate because:

- The wastewater characteristics among facilities are similar.
- A standard set of permit requirements can effectively provide environmental protection.
- Facilities in compliance with permit conditions will be in compliance with water quality standards.

Appendix C of this fact sheet identifies the legal or technical bases underlying each of the special and general conditions of the proposed boatyard general permit.

ACTIVITIES, DISCHARGES, AND FACILITIES THAT REQUIRE THIS PERMIT

The discharge of wastewater from boatyards to surface water requires an NPDES permit. Also, no pollutants may be discharged from any commercial or industrial operation into waters of the State except as authorized under a wastewater discharge permit. Boatyards meet the legal definition of commercial or industrial operation, the process wastewater contains pollutants, and boatyards are point source dischargers. This general permit satisfies the legal requirement for an NPDES permit for boatyards that employ pressure washing to clean boats, particularly their hulls, and that produce stormwater runoff from areas where industrial activities occur which then discharges to waters of the State.

Both the current boatyard general permit (effective June 1, 2011, through May 31, 2016) and the boatyard general permit for the subsequent term (issued July 6, 2016; to be effective August 8, 2016, through July 31, 2021) provide coverage for facilities that:

1. Engage in the construction, repair, or maintenance of small vessels (boats or ships), where 85% of those vessels are 65 feet or less in length; or
2. Generate more than 85% of their gross receipts from revenues returned from the construction, repair, or maintenance of those small vessels.

ACTIVITIES, DISCHARGES, AND FACILITIES EXCLUDED FROM COVERAGE UNDER THIS PERMIT

Facilities that provide only the following boatyard services, whether conducted by the vessel's owner or by an agent or contractor hired by the owner, do not require coverage under this permit:

- Use of tidal grids solely for emergency repair or for inspection by marine surveyors.

- Minor engine repair or maintenance within the engine space without vessel haul-out.
- Topsides cleaning, detailing, and bright work.
- Electronics servicing and maintenance.
- Marine sanitation device (MSD) servicing and maintenance that does not require haul-out.
- Minor repairs or modifications to the vessel rigging or superstructure (topside).

These activities, which do not require coverage under this permit, are often conducted in marinas. Marinas or boat owners conducting boatyard activities may be subject to penalty for discharging pollutants without a permit. In addition, marinas must follow the in-water hull cleaning instructions in the Ecology divers advisory (Ecology, 1999). Marinas on aquatic lands leased from the Washington Department of Natural Resources must, in accordance with RCW 90.48.386, maintain and follow a plan of operations detailing how all water pollution control requirements of State law will be met or risk losing the lease.

The permit does not provide coverage for related or ancillary industrial or commercial facilities, such as a repair shop for marine engines. Those facilities may qualify for coverage under the industrial stormwater general permit, if necessary. Ecology has issued guidelines for this type of work to prevent water pollution.

Discharges from facilities located on "Indian Country" as defined in 18 U.S.C. §1151, except portions of the Puyallup Reservation as noted in the permit, are not covered by the boatyard permit.

The following "federal facility" discharges are not covered by this permit:

- Discharges from activities operated by any department, agency, or instrumentality of the Federal Government of the United States.

- Discharges from activities (i) Located on federally-owned sites; and (ii) Operated by an entity, such as a private contractor~~,~~ performing industrial activity on behalf of or under the direction of any department, agency, or instrumentality of the Federal Government of the United States.

This general permit does **not** cover vessel deconstruction activities that take place in the water or on a floating drydock or barge. For these situations, the boatyard must obtain either an individual permit or the vessel deconstruction general permit.

BACKGROUND INFORMATION

HISTORY

Under Task P-20 of the Puget Sound Water Quality Authority Plan (1989), Ecology was directed to carry out a program for detection and identification of unpermitted discharge sources. One of

the significant unpermitted point source discharge groups found by the Elliott Bay and Lake Union Urban Bay Action Teams was the boatyard industry.

Ecology signed a Memorandum of Agreement with the U.S. EPA for development and issuance of a general permit for small shipyards. During the development of the permit it was decided to describe facilities in this segment of the Ship and Boat Building and Repairing industry as boatyards. A general permit was issued in 1992, reissued in 1997, and again in December 2005. The 2005 permit was modified in 2006 to correct an error. The 2005 permit and 2006 modification were appealed by the Northwest Marine Trade Association (NMTA) and the Puget Soundkeeper Alliance (PSA). The appeal was heard by the Pollution Control Hearings Board in July 2006, and the Board issued a decision in January 2007 (PCHB, 2007). That decision was appealed to Superior Court by NMTA and PSA. The appeal to Superior Court was conditionally settled by incorporating some of the PCHB judgment orders into a second permit modification (January 2008) and conducting a pilot test of three stormwater treatment devices during the winter of 2007-2008. The pilot test was funded by PSA, NMTA, and Ecology. A Settlement Steering Committee (steering committee) consisting of NMTA, PSA, their technical consultants, and Ecology directed the study. A project manager was hired to oversee day-to-day operation of the pilot test. A contractor was hired to conduct the sampling of the pilot treatment apparatus. The pilot test was conducted for seven storm events, and the contractor presented the data in a report to the steering committee (Taylor Associates, Inc. 2008). An order-of-magnitude economic analysis was conducted by the NMTA technical consultant to estimate cost of installing treatment at a typical boatyard (Arcadis, 2008).

A draft permit modification produced by PSA and NMTA was conveyed to Ecology August 2008 as an agreement between those two parties. Ecology released the draft modification for public comment November 2008. The draft contained benchmarks based on the pilot stormwater treatment data. Based on the comments received, Ecology determined a small business and AKART economic analysis was required to proceed with the permit. That analysis showed some boatyards could not install stormwater treatment and remain in business (Ecology, 2010). The economic analysis was released as a separate but supporting document. Based on the economic analysis, Ecology imposed technology-based limits on boatyards that could afford it and water quality-based limits with a compliance schedule for the others to allow time to fund installation of treatment systems. Those boatyards with water quality-based limits had performance-based limits during the compliance period until treatment system(s) were to be installed. This third iteration of the boatyard general permit was to expire on November 2, 2010, but Ecology extended its coverage until Ecology could complete the next version (the current version), which became effective on June 1, 2011.

By the end of the term of the current boatyard general permit, in early 2016, Ecology had issued coverage to approximately 70 boatyards. A list of the boatyards currently covered under this general permit is provided in Table 1, after Page 29 of this fact sheet.

The draft permit published March 16, 2016, is the fifth version of the boatyard general permit. The proposed substantive changes from the current general permit were:

- Electronic reporting to Ecology of monitoring data and various applications, plans, and reports.

- Decrease of the water quality-based effluent limit for total lead in stormwater runoff discharges from boatyards to Lake Union and the Lake Washington Ship Canal.

Following the public comment period, Ecology prepared the final boatyard general permit which contains seven substantive changes from the current permit. These changes are:

1. Addition of a Conditional No Exposure Exemption from the permit for facilities or Permittees that provide certification and that receive Ecology's written approval. (Permit Section S1.C)

2. Decrease in the maximum daily limit for total lead discharged to Lake Union or the Lake Washington Ship Canal from 185 ug/L to 78 ug/L. (Permit Section S2.D.3)

3. Addition of a maximum daily limit of 30 mg/L for total suspended solids discharged in stormwater runoff to waterbody segments identified on the 303(d) list as Category 5-impaired due to sediment contaminated with boatyard pollutants. (Permit Section S2.D.3)

4. Addition of a mandatory best management practice to address the Permittee's oversight of do-it-yourselfers and other non-boatyard contractors who conduct boatyard activities at the Permittee's facility. (Permit Sections S3.L and S8.B.3(h))

5. Significant rewrite of Permit Section S7 to clarify the requirements of Permittees that obtain monitoring results that exceed benchmarks. These clarifications involved no policy or practical changes for Ecology or Permittees. (Permit Section S7)

6. Deletion of economic waivers, which were incorrectly included in the current permit. (Former Permit Section S7.A.3.d)

7. Requirement that Permittees provide all permit-required monitoring and other reports to Ecology in an electronic form, unless Ecology has issued a written Permittee-specific waiver. (Permit Section S9)

This draft permit continues the requirement for certain best management practices and the prohibition of direct discharge of pressure-wash wastewater to surface waters.

DESCRIPTION OF THE INDUSTRY

Industry Processes

The applicable Standard Industrial Classifications (SICs) are:

> SIC No. 3731 (NAICS No. 336611) Ship Building and Repairing: "Establishments primarily engaged in building and repairing all types of ships, barges, and lighters,

whether propelled by sail or motor power or towed by other craft. This industry also includes the conversion and alteration of ships."

SIC No. 3732 (NAICS No. 336612) Boat Building and Repairing: "Establishments primarily engaged in building and repairing all types of boats."

A boatyard, as defined for the purpose of this permit, is a facility engaged in the construction, repair, and maintenance of small vessels, where 85% of those vessels are 65 feet or less in length, or the boatyard generates more than 85% of its gross receipts working on those vessels. Services provided may include, but are not limited to: pressure washing; bottom and topside painting; engine, prop, shaft, and rudder repair and replacement; hull repair; joinery; bilge cleaning; fuel and lubrication system repair or replacement; welding and grinding on the hull; buffing and waxing; topside cleaning; MSD repair or replacement; and other activities necessary to maintain a vessel. This document will use the generic terms pressure washing and pressure-wash wastewater for all pressure-washing activities at boatyards.

A boatyard may employ one or more of the following to remove or return a vessel to the water: marine railway, drydock, crane, hoist, ramp, or vertical lift. Some yards may build a limited number of custom boats usually constructed of fiberglass or aluminum. Permanent moorage facilities are not usually a feature of a boatyard although a few boatyards do have such facilities.

Historically, boat repair has been done outdoors on the waterfront. The vessel was supported in a cradle, on barrels, or in a sling while work was done on the hull. Some boatyard facilities are endeavoring to change operations in order to do the boat repair under cover. This will contribute to quality control, reduce or eliminate discharges, and improve worker safety. If all activities are performed indoors, under cover, with no outside activities or exposure except haul-out, coverage under this permit may not be required.

WASTEWATER TREATMENT PROCESSES

Boatyards covered by this general permit are prohibited from discharging pressure-wash wastewater directly to waters of the State. Permittees must discharge their pressure-wash wastewater, whether pretreated or not, to a municipal sanitary sewer system.

While this general permit does not explicitly require treatment of stormwater runoff from boatyards, some treatment may be necessary to comply with discharge limits and to ensure that pollutant concentrations in the runoff do not exceed benchmark concentrations. The permit also requires the implementation of several best management practices (BMPs) to prevent violation of water quality standards.

DISCHARGE OUTFALL

Typically, the outfalls through which boatyards discharge their stormwater runoff to the environment discharge to either the nearby or adjacent surface waterbody or to an infiltration area that must be located at least 200 feet from the edge of the nearest surface waterbody.

SOLID WASTES

Boatyards that accumulate solid wastes from treatment of pressure-wash wastewater or stormwater runoff must handle and dispose of those wastes in compliance with relevant solid waste regulations. Boatyards covered by this general permit generally employ the local municipality or a local contractor to haul solid wastes offsite and dispose of them properly.

DESCRIPTION OF THE RECEIVING WATERS

Boatyards covered by this permit may discharge stormwater runoff to the following three different types of receiving waters: fresh water, marine water, and groundwater. Some of these waterbodies may be impaired by specific pollutants. The type and condition of the particular receiving water to which a given boatyard discharges constitute the bases for permit-specified limits, benchmarks, and required BMPs. A summary of historical total hardness, copper, lead, and zinc concentrations in fresh and marine receiving waters in Western Washington is provided in Table 2.

Ecology conducted a receiving water study during the winter of 2008 and 2009 in Lake Union and Puget Sound (Ecology, 2009). The study was mandated by the PCHB in its 2007 decision. The study parameters, sample sizes, and locations were determined by the steering committee. The study focused on copper, zinc, and lead in the receiving water (total and dissolved), total suspended solids, and hardness (fresh water). The results from all Lake Union and Lake Washington Ship Canal samples were below the acute and chronic criteria for copper, lead, and zinc. Lake Union and Lake Washington Ship Canal sampling stations yielded equivalent concentrations for the parameters measured. The marine stations in Puget Sound showed some differences, with urban bay stations typically showing the highest concentration of metals. All sampling locations met water quality criteria for the three metals, and lead was typically below detection or quantitation levels.

WASTEWATER CHARACTERIZATION

Wastes generated by boatyard activities include spent abrasive grit, spent solvent, spent oil, pressure-wash wastewater, paint over-spray, paint drips, various cleaners and anti-corrosive compounds, paint chips, scrap metal, welding rods, wood, plastic, resin, glass fibers, and miscellaneous trash such as paper and glass. If not adequately controlled, these pollutants can enter the wastewater stream through the application and preparation of paints and the painted surface; the handling, storage, and accidental spills of chemicals, leaks, or drips of paints, solvents, or thinners; the fracturing and breakdown of abrasive grits; and the repair and maintenance of mechanical equipment. Hull preparation for painting is commonly done by pressure washing, sanding, grinding or scraping, and some abrasive blasting.

The two main wastewater streams from boatyards are: (1) Pressure-wash wastewater; and (2) Stormwater runoff. Other minor potential sources are cooling water, pump testing, gray

water, sanitary waste, wash-down of the work area, and engine bilge water. Gray water and sanitary waste go to municipal treatment or on-site treatment. Engine room bilge water and oily wastes are typically collected and disposed of through a licensed contracted disposal company.

PRESSURE-WASH WASTEWATER

In 1992, raw pressure-wash wastewaters were sampled by Ecology, local shipyards, boatyards, and the Municipality of Metropolitan Seattle (METRO) (Hart Crowser, 1997). The METRO data, summarized in Table 3, showed that the concentrations of copper, lead, and zinc in the untreated pressure-wash wastewater exceeded the typical standards for discharge to sanitary sewer systems by about a factor of 10, and exceeded surface water quality ambient standards by factors of about 9,000; 30; and 80, respectively.

During the current term of the boatyard general permit (2011-2016), permittees provided to Ecology discharge monitoring reports (DMRs) that characterized the pressure-wash wastewater that they discharged to their local publicly-owned treatment works (POTWs). The data on this treated wastewater are summarized in Table 4, for total copper, lead, and zinc, and pH for each season (June through September) from 2011 through 2014. The data showed median pH values ranging from 7.1 to 7.5 standard units (S.U.), with only four permittees reporting values greater than 9.0 S.U. All the seasonal median concentrations for each of the metals were less than their respective allowed limits. In 2011 and 2012, the seasonal average concentrations of copper and zinc exceeded their respective allowed limits, while the seasonal average concentration of lead exceeded its allowed limit in only 2012. In 2014 and 2015, none of the seasonal averages for the three monitored metals were reported in the treated pressure-wash wastewater discharges at concentrations that exceeded their respective limits.

STORMWATER RUNOFF

The 2005 permit required monitoring of stormwater runoff from boatyards for copper, oil & grease, and total suspended solids (TSS). These monitoring data are given in Table 5. Based on these data, Ecology removed the monitoring requirements for oil & grease and TSS in the 2008 permit modification.

The permit modification in 2008 required additional monitoring of stormwater for lead and zinc. These monitoring data are for stormwater runoff controlled solely by best management practices (BMPs). A summary of some of the monitoring data reported by the boatyards on their discharge monitoring reports from 1998 through 2014 is presented in Table 5.

The median reported copper value for the period of 1998 to 2002 was 410 ug/L, which is about four times higher than the median value reported between 2006 and 2008 (Table 5). These results showed a continued reduction in copper concentration (not tested for statistical significance).

A full characterization of toxic pollutants in stormwater runoff from three representative boatyards in the spring of 2006 is summarized in Table 6 (Ecology, 2006). The freshwater and marine water quality criteria (if available) are shown after the name of the pollutants.

The results of analyzing organotins in boatyard stormwater runoff collected during April and May of 2006 is summarized in Table 7. The U.S. EPA-recommended acute criteria for tributyltin are 0.46 µg/L for fresh water and 0.37 µg/L for marine water. Except for the April sampling at the Seaview Boatyard East (6.0 ug/L), the concentrations of all tributyltin results were less than the criteria.

During the current term of the boatyard general permit (2011-2016), permittees provided to Ecology discharge monitoring reports that characterized the stormwater runoff that they discharged to either the ground or the nearby surface waterbody. The data on this treated stormwater runoff are presented in Tables 8a, 8b, and 8c for total copper, lead, and zinc for each season (October through May) from 2011 through 2015. Table 8a addresses stormwater runoff discharged to all waterbodies; Table 8b addresses discharges to only fresh waterbodies; and Table 8c addresses discharges to only marine waters. The reported average seasonal results (and, to a lesser degree, the seasonal median results) appeared to decrease over the 4-year period. This apparent trend was not evaluated for statistical significance.

SUMMARY OF COMPLIANCE WITH PREVIOUSLY ISSUED PERMIT

The data showed that all the seasonal median values for total copper, lead, and zinc were less than their respective benchmarks or limit. In the 2011/2012 and 2012/2013 seasons, the seasonal average concentrations of copper exceeded the copper benchmark concentration, while the seasonal average concentration of zinc exceeded its benchmark in all four seasons. None of the seasonal average lead concentrations exceeded the lead limit. While the rates of compliance generally appeared to improve over the course of these four years (October 2011 through May 2015) (not tested for statistical significance), the total number of monitoring results submitted by the permittees was low, only about two-thirds of the total expected number.

COMPLIANCE WITH STATE ENVIRONMENTAL POLICY ACT

State law exempts the issuance, reissuance, or modification of any wastewater discharge permit from the State Environmental Policy Act (SEPA) process as long as the permit contains conditions that are no less stringent than Federal and State rules and regulations (RCW 43.21C.0383 and WAC 197-11-855). This exemption applies only to existing discharges, not to new discharges. New facilities must demonstrate compliance with SEPA as part of project authorization and approval in order to be eligible for coverage under the boatyard general permit.

PROPOSED PERMIT LIMITS

Federal and State regulations require that effluent limits set forth in an NPDES permit must be either technology- or water quality-based. Technology-based limits are based upon the treatment methods available to treat specific pollutants and are cost modified. Technology-based limits are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). State laws (RCW 90.48.010; 90.52.040; and 90.54.020) require the use of all known, available, and reasonable methods (AKART) to prevent and control the pollution of waters of the State.

Water quality-based limits are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (40 CFR 131.36). The more stringent of these two limits (technology or water quality-based) must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

Technology-based effluent limits for discharges consisting of process wastewater typically are based on some type of treatment technology to reduce the pollutants in that wastewater. Stormwater differs from process wastewater in that it is not a continuous discharge, the pollutant sources are not continuous, and the pollutant concentrations are highly variable. The U.S. EPA, in their stormwater permits, has determined that the use of structural controls and best management practices (BMPs) to prevent the discharge of pollutants via stormwater runoff may be equivalent to the "best conventional pollutant control technology" (BCT) and the "best available technology economically achievable" (BAT), which are the federally mandated technology-based treatment levels.

Title 40 CFR 122.2 defines BMPs as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution of waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs are techniques for pollution prevention or, in other words, preventing the pollutants from getting into the wastewater (e.g., stormwater runoff).

The U.S. EPA has defined shipyards as a point source category. This category includes the facilities that Ecology has separated out and calls "boatyards." The U.S. EPA draft document "Development Document for Shipbuilding and Repair" (U.S. EPA, 1978) recommended BMPs as the primary method of controlling waste discharges from shipyards to waters of the State. BMPs achieve pollution control through careful management of the product streams, segregation of potential pollutants in waste streams, and preventing or minimizing contact between water and waste material. Shipyards and boatyards have similar operations.

The Development Document for Shipbuilding and Repair also determined that BMPs constitute the "best practicable control technology currently available" (BPT) for the shipyard industry. Ecology concluded that BMPs constituted BCT for stormwater discharges in the boatyard industry and that collection, recycling, and treatment of pressure-wash wastewaters constituted BAT.

METRO Treatment Study
METRO (Municipality of Metropolitan Seattle) received a National Estuary Grant to do a treatment study of Puget Sound shipyard and boatyard wastewater and storm water. The study involved sampling of pressure-washing wastewater from a number of these facilities, and testing prototype collection and treatment systems to determine which methods could consistently meet state and local water quality standards.

METRO produced an analytical report of their findings and developed a guidance manual which was distributed to shipyards, boatyards, and publicly-owned treatment works (POTW). The manual includes options for treatment and discharge of pressure-wash wastewater, bilge and ballast water, and contaminated stormwater to receiving waters, municipal treatment plants, or off-site treatment facilities.

BMPs to collect and contain wastes and minimize waste generation during vessel repair and maintenance work have been researched, compiled, and distributed in Washington by Ecology, the Lake Union Association Water Quality Committee, and the Puget Sound Shipbuilders Association (1990), with funding assistance from the Puget Sound Water Quality Authority.

Many of the sources discussed in the Wastewater Characterization section of this fact sheet can be contained, controlled, or substantially reduced by the implementation of BMPs. BMPs are an essential component of this proposed NPDES general permit. BMPs include structural controls, such as catch basins and drains, berms, dikes, and appropriate containment for oils, chemicals, and wastes; roofed storage areas; and wastewater treatment facilities. Facilities covered by this general permit are required to implement the BMPs described in Special Condition S3 (Mandatory Best Management Practices) of the permit.

TECHNOLOGY-BASED LIMITS FOR PRESSURE-WASH WASTEWATER

The primary source of the heavy metals in pressure-wash wastewater is from paint removed from boat hulls. As noted previously, the copper concentration in this untreated wastewater exceeded the water quality criteria by several orders of magnitude. The next most common metals, by frequency and in magnitude, in boatyard and shipyard wastewater (or contaminated stormwater), were zinc and lead.

METRO's work clarified and expanded the list of options for treatment and disposal of boatyard wastewaters. The treatment study project was closely aligned with the initial development of the first general NPDES permit for boatyards. The study's project manager and project coordinator made valuable contributions to the general permit development by assisting Ecology in establishing standards for best available technology practices for boatyards.

More specifically, the alternatives for managing pressure-wash wastewater are:

(1) Recycling it and conserving its use.

(2) Collection and discharge (with pretreatment as necessary) of the wastewater to the sanitary sewer, which may include chemical addition followed by sedimentation and possibly evaporation.

Option 1 - Recycle/Conservation
The preferred means of preventing pollution from pressure washing hulls is recycling the pressure-wash wastewater. The typical configuration is multi-stage filtration with some storage capacity. Water lost from evaporation during pressure washing can be made up from rain water falling on the wash pad or from tap water. The solids collected from the filters or from sedimentation in the storage tank are air-dried under cover and handled as solid waste. The recycled water may eventually become contaminated, requiring disposal or treatment. In that case the wastewater may be collected by a licensed waste hauler and treated off-site.

Option 2 - Discharge to a Publicly-Owned Treatment Works
For boatyard facilities which have the ability to connect to a publicly-owned treatment works (POTW), recycling, with occasional discharge of contaminated recycle water to the POTW, is the best treatment method. The recycled water may have to be treated with a polymer and settled before discharge in order to meet the discharge limits of the permit.

For facilities with excess contaminated water, the contaminated water must be hauled to a treatment facility for proper treatment and disposal. METRO's guidance manual gives a more detailed discussion of recycling options for pressure-wash wastewaters.

Since all boatyards have eliminated direct discharges of pressure-wash wastewater to surface water, Ecology has determined that AKART for pressure-wash wastewater is recycling, evaporation, or treatment and discharge to the sanitary sewer. Discharges to the sanitary sewer must meet the discharge requirements included in this permit for non-delegated POTWs or the requirements specified by delegated POTWs. Delegated POTWs are municipal wastewater treatment systems that have received Federal pretreatment delegation by a permit system through Ecology, to restrict the pollutant loading or concentration of pollutants to their system.

TECHNOLOGY-BASED LIMITS FOR STORMWATER RUNOFF

As previously noted, the U.S. EPA has determined that BMPs are BPT for stormwater discharges under the U.S. EPA multi-sector stormwater general permit and in their draft effluent guidelines for shipyards. Ecology required BMPs beginning in 2005 and incorporated a process for additional BMPs when benchmarks were exceeded.

The Northwest Marine Trade Association, Puget Soundkeeper Alliance, and Ecology conducted a pilot treatment study at several boatyards during the October-May season. Three different types of treatment devices were installed at three boatyards in the Seattle area, and multiple storm events were sampled. The results of the study are in a report entitled *Boatyard Stormwater Treatment Technology Study* – final report dated March 2008, and is available on the Ecology web site at: http://www.ecy.wa.gov/programs/wq/permits/boatyard/index.html. The cost of installing and operating each of the three treatment devices was estimated for the three model boatyards. The net present value of the most cost-effective treatment device of the three pilot

treatment devices was $255,000 per acre (Arcadis, 2008). The estimated cost for treatment and the preparation work (grading and repaving) for a 2-acre boatyard was $400,000 to $900,000. This document is available at: http://www.nmta.net/PDF/BoatyardCostAnalysis_051908.pdf.

The 2005 permit was modified as required by the settlement agreement in 2008 to incorporate PCHB orders numbered 2, 3, 7, and 8. This permit modification, as noted above, was appealed by the PSA (appeal 2). The appeal was on the permit modification Section S3.C *Receiving Water Studies*. This section was added according to the PCHB order 7.

Annual monitoring of stormwater was required in the first issuance of the Boatyard Permit (1992) to verify the effectiveness of best management practices. Compliance with the monitoring requirement was poor. The few discharges sampled at each boatyard failed to provide the feedback necessary to verify the effectiveness of best management practices or to characterize discharges. Ecology then determined that more than one sample per year was necessary. Therefore, Ecology required four samples per year in the 1997 permit. The 2005 permit required five samples per year. Four samples were required during the times the boatyard activity was highest (spring and fall) and one sample was required in January, the time of highest rainfall. Ecology has determined that five samples collected from fall to spring are adequate to characterize pollutant control activities for stormwater.

Boatyards covered under this permit are required to adopt the BMPs listed in the permit if appropriate for their facility. Other BMPs which are specific for the facility are expected to be developed as required by the facility to meet the permit benchmark values. Special condition S8 (Stormwater Pollution Prevention Plan) of the permit requires these BMPs be listed in a facility-specific document called the Stormwater Pollution Prevention Plan (SWPPP). This plan is expected to be updated as necessary, and it is a public document. The SWPPP also incorporates a monitoring plan, a spill plan, and weekly visual monitoring, as required in the previous permit.

The draft permit released for public comment in November 2008 contained benchmarks of 14.7 and 29 µg/L copper based on the demonstrated average concentration and variance observed during the pilot study of multimedia filtration. Comments received on these benchmarks disputed that they represented the performance expected when the apparatus was in actual operation as opposed to a test situation. In the period since the release of the 2008 draft, several boatyards have installed multimedia filtration stormwater treatment devices. The data from these were combined with the pilot test data from the boatyards and Pacific Fishermen pilot test (CH2M Hill, 2008) to derive new benchmarks. The data are presented in Appendix C of the April 21, 2010, fact sheet, which is available on the Ecology boatyard web site at: http://www.ecy.wa.gov/programs/wq/permits/boatyard/index.html. The benchmarks were calculated in the same manner as the effluent limit derivation presented in the U.S. EPA Technical Support Document, (U.S. EPA, 1991). The copper data were not normally distributed, so they were transformed by the log normal transformation to derive benchmarks. The zinc data were normally distributed after removal of the outliers.

Since lead in treated effluent was typically at or below a measureable concentration, no benchmarks were calculated. The 2011 permit did continue to require monitoring for lead.

Beginning in 2005, copper and zinc limits were imposed in the permit as benchmarks. Benchmarks have been used instead of limits because adaptive management has been a useful process in stormwater management. This is evident in the declining copper concentrations in the boatyard data. Some boatyards may be able to consistently meet the current benchmarks with source control BMPs or with additional alternative treatment devices. Effluent limits, as used in this permit, consist of benchmarks plus adaptive management. In this permit, any exceedance of a benchmark requires a Level 1 response. This response is an examination by the boatyard of the probable cause of the exceedance and an action to be instituted that will cause the stormwater runoff to meet the benchmark in the next monitoring period. After four exceedances of a benchmark, the boatyard must submit a Level 2 Source Control Report.

After six exceedances, the boatyard must begin its Level 3 Response. Within 3 months of reporting the sixth benchmark exceedance, the Permittee must install additional treatment unless that treatment is either not feasible or not necessary. For installing new treatment, the Permittee must submit an engineering report to Ecology within 3 months of reporting the sixth benchmark exceedance. In most cases, if the Level 2 Source Control Report had been done correctly, then the Level 3 Response will include an analysis of the design of possible treatment device(s), the grading of the yard, and the pumps and stormwater collection system. The Level Three Engineering Report must also include an analysis of how the treated wastewater will be conveyed to the receiving water or sanitary system, and the characteristics of the receiving water. If the Permittee believes that additional treatment is not feasible or not necessary, the Permittee must request a permit modification, fulfill all the requirements in Condition S1.C (Modification of Permit Coverage), and convince Ecology that either:

1. Installation of necessary treatment BMPs is not feasible by the Level 3 deadline, up to a maximum of 15 months following reporting the sixth benchmark exceedance; or

2. Installation of treatment BMPs is not feasible or not necessary to prevent discharges that may cause or contribute to violation of a water quality standard.

The determination that a treatment BMP is "not feasible" may <u>not</u> be based on financial limitations or distress. Examples of situations where the installation of treatment BMPs may actually be "not feasible" are where the requirements of a local permitting authority delay or prevent the installation, where the local fire marshal has imposed land or building use restrictions, or where the Permittee's lease agreement with the site owner precludes the installation.

The permit also contains sections addressing the circumstance of boatyards currently at the Level Two or Three Response stages.

WATER QUALITY-BASED EFFLUENT LIMITS

In order to protect existing water quality and preserve the designated beneficial uses of Washington surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will not cause a violation of Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the State. Surface water

quality-based effluent limits may be based on an individual wasteload allocation (WLA) or on a WLA developed during a basin-wide total maximum daily load (TMDL) study. General permits may use a risk-based analysis to develop limits.

The benchmarks and limits for copper, lead, and zinc in the proposed permit (version 5) remained the same as those in the current permit (effective June 1, 2011) except for lead in discharges to Lake Union or the Lake Washington Ship Canal. Those benchmarks and limits were formulated as: (water quality criteria) times (dilution factor) times (translator: a conversion factor to convert total metal to dissolved metal in the receiving water).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the maximum levels of pollutants allowed in receiving waters to be protective of aquatic life. Numerical criteria set forth in the water quality standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limits, they must be used in a permit.

The State water quality criteria, WAC 173-201A, for acute toxic effects due to copper in marine water is 4.8 µg/L (dissolved) and in fresh water is 7.2 µg/L (dissolved) at a receiving water hardness of 40 mg/L, which is a typical hardness for Lake Union.

The State water quality criterion, WAC 173-201A, for acute toxic effects due to lead in marine water is 210 µg/L (dissolved), and the fresh water acute criterion is 24 µg/L (dissolved) at a receiving water hardness of 40 mg/L.

The State water quality criteria, WAC 173-201A, for acute toxic effects due to zinc in marine water is 90.0 µg/L (dissolved), and the fresh water acute criterion is 53 µg/L (dissolved) at a receiving water hardness of 40 mg/L.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (40 CFR Part 131). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to consumption of fish and shellfish and to drinking water obtained from surface waters.

Discharges to Non-Impaired Surface Waters
Ecology determined water quality-based limits using a risk based model and the U.S. EPA Technical Support Document (TSD) method (U.S. EPA, 1991), illustrated in Tables 10 and 11. Discharges to non-impaired freshwaters were addressed as shown in Table 10, and discharges to non-impaired marine waters were addressed as shown in Table 11. Calculations employed: (a) The available effluent data reported for total copper, lead, and zinc in stormwater runoff discharges during the current permit term; (b) The receiving water data for the same parameters

plus the total hardness in freshwater; (c) The U.S. EPA acute water quality criteria for human health and aquatic life; and (d) The value of 5.0 as a reasonable dilution factor. A Permittee must be operating at AKART to be eligible for a dilution factor.

To prepare the Industrial Stormwater General Permit (effective January 1, 2010), Ecology worked with an external stakeholder workgroup who explored a number of permit issues, including the derivation of metals benchmarks. During the stakeholder process, Ecology hired Herrera Environmental Consultants (Herrera) to perform analyses to determine the risk of exceeding acute water quality standards given a range of benchmarks. Since this analysis must take into account the broad range of facility types and receiving waters that would be covered under the ISGP, compliance with water quality standards cannot be evaluated based solely on site-specific information. Therefore, this analysis utilized simple dilution models to evaluate the potential for exceeding water quality standards given the following model inputs:

- Representative receiving water data for western and eastern Washington,
- Representative dilution factors, and
- The proposed permit targets.

To provide some basis for assessing uncertainty in these analyses, a Monte Carlo simulation was employed in running the dilution models to determine the probability of exceeding water quality standards based on the receiving water conditions having the highest potential for occurrence. This methodology is similar to the Monte Carlo simulation described in the U.S. Environmental Protection Agency's "Technical Support Document for Water Quality-Based Toxics Control" (1991), which was adapted from similar analyses performed by Herrera in association with the "6415 report" (EnviroVision and Herrera, 2006) that examined an alternative suite of proposed metals benchmarks. The results of the 2009 Herrera analysis, hereby incorporated into this fact sheet by reference, were submitted to Ecology and titled: "Water Quality Risk Evaluation for Proposed Benchmarks/Action Levels in the Industrial Stormwater General Permit," dated February 9, 2009. Based on the 2009 Herrera Evaluation, Ecology set the ISGP benchmark values for copper and zinc on values that correspond to a 90% probability of meeting water quality standards in the receiving water, with an assumed dilution factor of 5.0.

Ecology believes that a dilution factor of 5.0 is reasonable and appropriate for application to stormwater runoff from boatyards. It is the same factor used to determine the benchmarks in the current Boatyard General Permit, and it is the same factor used in the current ISGP. The use of a dilution factor in deriving the benchmark is not considered the authorization of a mixing zone, but Ecology has determined that a modest dilution factor 5.0 is consistent with WAC 173-201A-400. Based upon Ecology's best professional judgment, experience under previous permit cycles, the available science, and the "Boatyard Stormwater Treatment Study" (Taylor Associates, Inc., 2008), Ecology has determined that in order to meet the proposed benchmarks, permittees will be required to fully apply AKART, and many will be required to install active stormwater treatment systems.

Since discharges of stormwater runoff are short-term and episodic, Ecology judged that chronic exposure scenarios were not relevant and that a moderate dilution factor of 5.0 was reasonable. The calculations underlying Tables 10 and 11 indicated that only total copper and total zinc in

the anticipated stormwater discharges posed reasonable potentials for causing a violation of water quality standards.

Permittees who meet all the other conditions of this general permit are assigned an effluent dilution factor of 5.0 based upon a maximum 20-foot distance from the point of discharge into the receiving surface water. If 20 feet is insufficient to produce a dilution factor of 5.0, then the allowed dilution factor is correspondingly reduced to ensure compliance with surface water quality standards at that 20-foot distance.

Ecology retained from the current permit the benchmarks for total copper and zinc. The maximum daily benchmarks for total copper and total zinc in discharges of stormwater runoff to both fresh and marine waters were 147 and 90 ug/L, respectively. A summary of the proposed benchmarks alongside the current benchmarks is provided in Table 13.

Discharges to Impaired Surface Waters

Section 303(d) of the Federal Clean Water Act requires Washington State periodically to prepare a list of all surface waters in the State for which beneficial uses of the water – such as for drinking, recreation, aquatic habitat, and industrial use – are impaired by pollutants. These waterbodies are water quality-limited estuaries, lakes, and streams that fall short of State surface water quality standards, and are not expected to improve within the next 2 years.

Waters placed on the 303(d) list require the preparation of total maximum daily loads (TMDLs), a key tool in the work to clean up polluted waters. TMDLs identify the maximum amount of a pollutant to be allowed to be released into a waterbody so as not to impair uses of the water, and allocate that amount among various sources.

Ecology's assessment of which waters to place on the 303(d) list is guided by Federal laws, State water quality standards, and the State 303(d) policy. This policy describes how the standards are applied, requirements for the data used, and how to prioritize TMDLs, among other issues. The goal is to make the best possible decisions on whether each body of water is impaired by pollutants, to ensure that all impaired waters are identified and that no waters are mistakenly identified.

Lake Union and the Lake Washington Ship Canal are still on the Ecology 303(d) list for impairment by lead in the water column. Therefore, the limit for total lead was calculated using the U.S. EPA TSD with a dilution factor of 1.0. The reasonable potential determination and limit calculation for lead discharged to Lake Union or the Lake Washington Ship Canal are shown in Table 12. Based on the conditions of the receiving water and new monitoring data reported during the current permit term, the numeric value for this limit changed from 185 µg/L to 78 ug/L. This value was used as the daily maximum limit. The maximum daily benchmarks for total copper and total zinc were the same as for non-impaired fresh waterbodies, i.e., 147 and 90 ug/L, respectively. A summary of the proposed benchmarks alongside the current benchmarks is provided in Table 13.

To address sediment impairment, Ecology is assigning an effluent limit for total suspended solids where sediments are named on the Ecology 303(d) list for Category 5 impairment by copper,

lead, or zinc. The only sediments associated with permitted boatyard discharges that are so listed occur in a portion of Bellingham Bay. The Industrial Stormwater General Permit assigns Permittees a discharge limit for total suspended solids of 30 mg/L, as a surrogate for site-specific contaminants (Ecology, 2008, draft). Similarly, Ecology will employ total suspended solids as a discharge limit for Permittees that discharge stormwater runoff from industrial areas to waterbody segments listed as Category 5-impaired by any boatyard pollutants (copper, lead and zinc).

No other waters receiving boatyard stormwater runoff were listed as impaired for metals on the current 303(d) list. If additional waterbodies become listed in the future, Ecology will, as needed, issue new limits to individual permittees as administrative orders and revised coverages.

Discharges to the Ground

A treatment technology identified as an economical treatment method in an engineering report for shipyard stormwater was discharging to an infiltration basin or trench lined with metal-absorbent material. This treatment was called "enhanced filtration" (Hart Crowser, 1997). Any discharge to an infiltration basin or trench must be located far enough from surface water so as not to be deemed a surface discharge due to hydraulic continuity. In addition, the discharge must comply with the groundwater standards. This permit continues to require that this type of discharge be at least 200 feet from the nearest surface water and meet maximum daily limits of 1,000 µg/L for total copper; and 1,020 ug/L for total zinc. The limit for copper is the groundwater criterion for copper, and the limit for zinc is technology-based. Both limits should be obtainable with proper BMPs at the facility. Meeting the limits at the point of discharge to the infiltration basin or trench (the treatment device) eliminates the need for groundwater sampling. This condition is continued from the current permit. A summary of the proposed benchmarks alongside the current benchmarks is provided in Table 13.

Sediment Quality Criteria

There is little data to judge the impact of boatyard activity on sediment quality. One study found that sediment quality in two Puget Sound boatyard/marinas was well below current sediment quality criteria for copper, lead, and zinc (Crecelius, E. et al, 1989). Ecology collected sediment samples at three boatyards in 2006 to determine the impact of boatyard stormwater runoff to sediment quality (Ecology, 2006). Sediment contamination appeared to correlate with stormwater runoff contamination. Ecology believes that controlling the sources of the pollutants in stormwater will cause a reduction of pollutants in the sediments.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

COMPARISON OF PROPOSED EFFLUENT LIMITS AND BENCHMARKS WITH RECENT MONITORING DATA

A comparison between the proposed limits and benchmarks for stormwater runoff and the numerical monitoring data reported during the first four years of the current permit term is presented in Table 14. The average percentages of reported numerical results for total copper and zinc that would have achieved the proposed benchmarks were about 79% and 64%, respectively. All of the total lead results reported for Lake Union and the Lake Washington Ship Canal would have complied with the new proposed limit. The fractions of permittees who did not exceed the proposed total copper and zinc benchmarks compared with all those permittees who had reported numerical results were about one-half to two-thirds for copper, and one-fourth to one-half for zinc.

MONITORING REQUIREMENTS

DISCHARGES OF PRESSURE-WASH WASTEWATER

Discharges of pressure-wash wastewater are restricted to discharges to POTWs. Ecology requires monitoring by those boatyards that discharge to non-delegated POTWs. The monitoring schedule for discharges of pressure-wash wastewater will be the same as the schedule in the current permit: Once monthly in June, July, August, and September. The POTW limits and monitoring frequency in this permit were adopted from METRO's pretreatment limits. Pretreatment limits established by delegated POTWs have similar limits and monitoring requirements for discharge into their systems.

Samples and measurements taken to meet the requirements of this general permit must represent the volume and nature of the monitored discharge within the monthly monitoring period, including representative sampling of any unusual discharge or discharge condition such as bypasses, upsets, and maintenance-related conditions affecting effluent quality.

DISCHARGES OF STORMWATER RUNOFF TO WATERS OF THE STATE

The Permittee must monitor discharges of stormwater runoff from the areas of the facility where industrial activity occurs. The Permittee must collect samples from a location or locations affected by boatyard-related activities and as noted on the application for coverage. If stormwater runoff from the industrial areas of a facility occurs as sheet flow, then the Permittee must construct a collection point to collect an adequate sample volume. If stormwater runoff discharges do not occur during a monthly sampling period, then the Permittee must indicate that on the discharge monitoring report (DMR) for that monitoring period. Stormwater runoff must be monitored in accordance with the monitoring schedule shown in Table 15.

ANALYTICAL PROCEDURES

Sampling and analytical methods used to meet the monitoring requirements specified in this general permit must conform to the latest revision of the "Guidelines Establishing Test Procedures

for the Analysis of Pollutants" contained in 40 CFR Part 136. The required analytical methods and detection and quantitation levels are provided in Table 16. The Permittee must ensure laboratory results comply with the detection limit and quantitation level specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternate method, it must report the test method and quantitation level on the DMR. If the Permittee is unable to obtain the required quantitation level due to matrix effects, the Permittee must report the matrix-specific method detection limit and quantitation level on the DMR.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

Ecology based Special Condition S9 (Reporting and Recordkeeping Requirements) on its authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210). Permittees must submit discharge monitoring reports (DMRs) to Ecology by the 28th day of the month immediately following every month during which monitoring is required. Unless authorized by a written waiver from Ecology, Permittees must submit their DMRs electronically using the online Ecology WebDMR program, which is accessible at: http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html. Their data will then be automatically stored in Ecology's Permitting and Reporting Information System (PARIS). Permittees unable to submit electronically (e.g., those who do not have an Internet connection) must contact their Ecology regional permit administrator to request a waiver and to obtain instructions on how to provide hardcopy paper versions of the required reports and documentation. Since about the year 2010, Ecology has been asking NPDES and state waste discharge Permittees to provide their monitoring data electronically to expedite their required reporting and minimize errors in the transfer of their data into PARIS.

NON-ROUTINE AND UNANTICIPATED WASTEWATER

Non-routine and unanticipated wastewater consists of process wastewater not identified in Special Condition S1 (Permit Coverage Required), not routinely discharged, and not anticipated at the time of permit application, such as waters used to pressure-test storage tanks or fire water systems or of leaks from drinking water systems. The Permittee must address any such wastewaters in accordance with the terms of Special Condition S5 (Non-Stormwater Miscellaneous Discharges).

STORMWATER POLLUTION PREVENTION PLAN

In accordance with 40 CFR 122.44(k) and (s), the reissued permit includes requirements for the development and implementation of a stormwater pollution prevention plan (SWPPP) along with best management practices (BMPs) to minimize or prevent the discharge of pollutants via stormwater discharged from areas associated with industrial activity to waters of the State. BMPs constitute best conventional pollutant control technology (BCT) and best available

technology economically achievable (BAT) for stormwater discharges. Facilities that discharge stormwater from their site to a surface waterbody or to a stormwater conveyance system that discharges to a surface waterbody must prepare a SWPPP. Ecology has determined that each Permittee must develop a SWPPP and implement adequate BMPs in order to meet the requirements of "all known, available, and reasonable methods of prevention, control, and treatment" (AKART).

The purpose of a SWPPP is to prevent the contamination of stormwater to the maximum extent practical. The SWPPP must identify the potential contaminants to stormwater, the potential sources of stormwater contamination from industrial activities, and the actions that the facility must implement to manage stormwater and the sources of contamination to comply with the requirement under Chapter 90.48 RCW to prevent or minimize contamination of stormwater to protect the beneficial uses of waters of the State.

Each Permittee must continuously review and revise its SWPPP as necessary to assure that stormwater discharges do not degrade water quality. Each Permittee must retain the SWPPP on site or within reasonable access to the site and make it available for review by Ecology when requested.

Best Management Practices

Best management practices (BMPs) are the actions identified to manage, prevent contamination of, and treat stormwater. BMPs identify schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs also identify treatment systems, operating procedures, and practices used to control plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage. Permittees must ensure that their SWPPP includes the operational and structural source control BMPs listed as "applicable" in the applicable Ecology stormwater management manual.

While Permittees that provide areas at their facilities for individual boat owners and operators to service their own vessels themselves ("do-it-yourselfers" or their independent contractors) may not be held directly responsible for the bad practices of those individuals, Permittees remain liable for the water quality of discharges of stormwater runoff from those do-it-yourself areas. Therefore, Permittees should require do-it-yourselfers and independent contractors to adhere to the same BMPs as those required for boatyards by the general permit. Do-it-yourselfers and independent contractors who fail to implement all the required or appropriate BMPs must be prohibited from working at the boatyard. The Permittee may document its compliance with this BMP by (1) Maintaining written agreements with those non-boatyard individuals that they will implement all of the mandatory BMPs, and (2) Excluding repeat offenders from its facilities.

Operational Source Control BMPs

Operational source control BMPs include a schedule of activities, prohibition of practices, maintenance procedures, employee training, good housekeeping, and other managerial practices to prevent or reduce the pollution of waters of the State. These activities do not require construction of pollution control devices but are very important components of a successful SWPPP. Employee training, for instance, is critical to achieving timely and consistent spill

response. Pollution prevention is likely to fail if employees do not understand the importance and objectives of BMPs. Prohibitions might include eliminating outdoor repair work on equipment and certainly would include the elimination of intentional draining of crankcase oil onto the ground. Good housekeeping and maintenance schedules help prevent incidents that could result in the release of pollutants. Operational BMPs are cost-effective methods to control pollutants and protect the environment. The SWPPP must identify all the operational BMPs and how and where they are to be implemented. For example, the SWPPP must identify the subject matter of applicable training, when training will take place, and who is responsible to assure that employee training occurs.

Structural Source Control BMPs
Structural source control BMPs include physical, structural, or mechanical devices or facilities intended to prevent pollutants from entering stormwater. Examples of structural source control BMPs include erosion control practices, maintenance of stormwater facilities (e.g., cleaning out sediment traps), construction of roofs over storage and working areas, and direction of equipment wash water and similar discharges to the sanitary sewer or a dead end sump. Structural source control BMPs likely include a capital investment but are cost effective compared to cleaning up pollutants after they have entered stormwater.

Treatment BMPs
Operational and structural source control BMPs are designed to prevent pollutants from entering stormwater. However, even with an aggressive and successful program, stormwater may still require treatment to achieve compliance with water quality standards. Treatment BMPs remove pollutants from stormwater. Examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

Volume and Flow Control BMPs
Ecology recognizes the need to include specific BMP requirements for stormwater runoff quantity control to protect beneficial water uses, including fish habitat. Controlling the rate and volume of stormwater discharge maintains the health of the watershed. New facilities and existing facilities undergoing redevelopment must implement the requirements for peak runoff rate and volume control identified in the applicable "Stormwater Management Manual for Western [or Eastern] Washington," or any revisions thereof. Permittees should identify volume and flow control measures that they can implement over time to reduce the impact of uncontrolled release of stormwater.

Ecology-Approved Stormwater Management Manuals
Consistent with RCW 90.48.555(5) and (6), the reissued permit requires each Permittee to implement BMPs described in the applicable "Stormwater Management Manual for Western [or Eastern] Washington," or any revisions thereof, or practices that are demonstrably equivalent to practices contained in stormwater technical manuals approved by Ecology. The SWPPP must document that the BMPs not selected from Ecology-approved manuals provide an equivalent level of pollution prevention, compared to the applicable stormwater management manuals, including the technical basis for the selection of the stormwater BMPs (scientific, technical studies, and/or modeling) which supports the performance claims for the selected BMPs.

PERMIT TERM

Ecology is issuing this permit for a term of 5 years, as allowed by WAC 173-226-220.

ECONOMIC IMPACT ANALYSIS

Ecology's Waste Discharge General Permit Program rule (WAC 173-226-120) requires an economic impact analysis (EIA) of any draft wastewater general permit intended to directly cover small businesses. The analysis is required to serve the following purposes:

- A brief description of the compliance requirements of the draft general permit.
- The estimated costs for complying with the permit, based on existing data for facilities to be covered under the general permit.
- A comparison, to the greatest extent possible, of the cost of compliance for small businesses with the cost of compliance for the largest ten percent of the facilities to be covered under the general permit.
- A discussion of what mitigation the permit provides to reduce the effect on small businesses (if a disproportionate impact is expected), without compromising the mandated intent of the permit.

RCW 19.85.020(4) defines a small business as any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees.

In 2010, Ecology deemed the level of performance from multimedia filtration as AKART. The term AKART has been defined as an engineering and economic decision process which is equivalent to the Federal BCT, BAT determination. (Chapter 4 in Ecology, 2015). Therefore, Ecology combined the EIA with an economic evaluation of AKART and summarized the evaluations in Ecology Publication Number 10-10-018, in April 2010.

The 2010 EIA determined the general permit had a disproportionate impact on small business, but there were no opportunities for mitigation without compromising the mandated intent of the permit.

The November 2015 EIA (Ecology, 2015a) again determined the general permit had a disproportionate impact on small business, but there were no opportunities for mitigation without compromising the mandated intent of the permit.

ZEBRA MUSSELS

The proposed permit contains reporting and treatment requirements for zebra mussels. Zebra mussels (*Dreissena polymorpha*) have spread throughout the Great Lakes and other waterways in 18 states. Two Canadian provinces believe they were accidentally introduced into Lakes Erie and St. Clair in the 1980s. This introduction has been attributed to a discharge of ballast water from a commercial freighter, but other introductions are known to have come from hull biofouling.

Zebra mussels will continue to expand their range as naturally flowing water carries their young, known as veligers, downstream. Commercial and recreational vessels and equipment can also spread zebra mussels when they move from infested waters to uninfested waters. Adult mussels may attach to any hard surface and the veligers may be transported in water.

A list of potential carriers includes:

* Boats, trailers and other equipment
* Scientific equipment
* SCUBA and snorkel gear
* Live wells
* Raw water
* Plants and animals

Placing these items in uninfested waters without following precautions may lead to an accidental introduction of mussels. Any boats or vessels from outside the State of Washington should be carefully examined, and all boats or vessels from east of the Rocky Mountains should be considered infected.

Water hotter than 110 degrees F will kill veligers and 140 degrees F will kill adult mussels.

Therefore, the permit contains inspection, reporting, and quarantine requirements to minimize the potential for infestation of zebra mussels.

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TABLES

Table 1. Facilities Currently Covered under this Permit.

Facility Name	Permit Number	Receiving Waterbody (specific to general)	Waterbody Type
Albert Jensen & Sons, Inc.	WAG030001	Friday Harbor, San Juan Channel	Marine
Anacortes Rigging & Yacht Services, LLC	WAG031051	Fidalgo Bay	Marine
Blaine Marine Services, LLC	WAG030119	Drayton Harbor, Semiahmoo Bay, Strait of Georgia	Marine
Bremerton Yacht Club	WAG030011	Phinney Bay, Dyes Inlet, Port Washington Narrows	Marine
Cap Sante Marine South Yard	WAG030022	Fidalgo Bay	Marine
CJ Marine	WAG994264	Puget Sound (South-Central)	Marine
CSR Marine East - Shilshole; Seaview East Boatyard	WAG031052	Salmon Bay, Lake Washington Ship Canal	Fresh
CSR Marine South	WAG030009	Puget Sound (Central)	Marine
CSR Marine West	WAG030100	Salmon Bay, Lake Washington Ship Canal	Fresh
Dagmars Marina	WAG030059	Snohomish River, Possession Sound (North), Puget Sound	Fresh
Deer Harbor Boatworks	WAG030103	N/A	N/A
Delta Marine Industries, Inc.	WAG030091	Duwamish Waterway	Fresh
Endor Marine, LLC	WAG030047	Salmon Bay, Lake Washington Ship Canal	Fresh
Gig Harbor Boat Yard, Inc.	WAG031009	Gig Harbor, Colvos Passage, Puget Sound	Marine
Hilton Harbor Marina	WAG030024	I and J Street Waterway, Bellingham Bay (Inner)	Marine
Howard Moe Enterprises	WAG031048	Hoquiam River, Grays Harbor (Inner)	Fresh
Hylebos Marina	WAG031020	Hylebos Waterway, Commencement Bay (Inner)	Marine
Islands Marine Center	WAG030072	Fisherman Bay, San Juan Channel	Marine
Jensen Motor Boat Company	WAG030088	Portage Bay, Lake Union / Lake Washington Ship Canal	Fresh
John Dunato & Company, Inc.	WAG030025	Lake Union / Lake Washington Ship Canal	Fresh
Keyport Undersea Charter & Salvage	WAG030073	Liberty Bay, Puget Sound	Marine
Kitsap Marine Industries, Inc.	WAG030027	Sinclair Inlet	Marine

Table 1. Facilities Currently Covered under this Permit (continued).

Facility Name	Permit Number	Receiving Waterbody (specific to general)	Waterbody Type
La Conner Marina, Port of Skagit County	WAG030036	Swinomish Channel, Padilla Bay, Skagit Bay	Marine
La Conner Maritime Services	WAG030074	Swinomish Channel, Padilla Bay, Skagit Bay	Marine
Larsson Marine, LLC	WAG030004	Portage Bay, Lake Union / Lake Washington Ship Canal	Fresh
Lovrics Sea-Craft (Individual Permit: April 2016)	WAG030090	Guemes Channel, Rosario Strait	Marine
Marine Servicenter	WAG030095	Flounder Bay, Burrows Bay, Rosario Strait	Marine
Marine Services & Assist	WAG030083	Cornet Bay, Puget Sound	Marine
Mariners Haven	WAG030070	Oak Harbor, Saratoga Passage, Skagit Bay	Marine
Maritime Commerce Center	WAG030084	Salmon Bay, Lake Washington Ship Canal	Fresh
McNeil Island Boatyard, DOC	WAG031038	Balch Passage, Puget Sound (South)	Marine
Modutech Marine, Inc.	WAG031016	Hylebos Waterway, Commencement Bay (Inner)	Marine
Morris & Company, DBA Ocean Alexander Marine Yacht Sales	WAG031053	Portage Bay, Lake Union / Lake Washington Ship Canal	Fresh
Nordlund Boat Company, Inc.	WAG031025	Upper Turning Basin, Hylebos Waterway, Commencement Bay (Inner)	Marine
North Harbor Diesel, Inc.	WAG030123	Fidalgo Bay, Guemes Channel, Rosario Strait	Marine
North Island Boat Company	WAG030139	Flounder Bay, Burrows Bay, Rosario Strait	Marine
North Lake Marina	WAG030014	Lake Washington	Fresh
Citadel Marine Center Holdings	WAG031056	Blair Waterway, Commencement Bay (Inner), Puget Sound	Marine
Northern Marine Industries, Inc.	WAG030135	Salmon Bay, Lake Washington Ship Canal	Fresh
Platypus Marine, Inc.	WAG031047	Port Angeles Harbor, Strait of Juan de Fuca (Central)	Marine
Point Roberts Resort, LP	WAG030037	Strait of Georgia	Marine
Port of Edmonds	WAG030034	Puget Sound (North Central)	Marine
Port of Everett Marina West	WAG030131	Possession Sound (North), Puget Sound	Marine
Port of Ilwaco Boatyard & Marina	WAG031017	Baker Bay, Columbia River	Fresh
Port of Port Angeles Boatyard	WAG031027	Port Angeles Harbor, Strait of Juan de Fuca (Central)	Marine

Table 1. Facilities Currently Covered under this Permit (continued).

Facility Name	Permit Number	Receiving Waterbody (specific to general)	Waterbody Type
Port of Port Townsend	WAG031006	Port Townsend Bay, Admiralty Inlet, Puget Sound (North)	Marine
Reed Brothers Shipyard	WAG030038	Reads Bay, Lopez Sound, Rosario Strait	Marine
Roche Harbor Marine, Inc.	WAG994262	Roche Harbor, Haro Strait	Marine
Sea Marine	WAG031003	Admiralty Inlet, Puget Sound (North)	Marine
Seattle Boat Company (Terminated: March 2015)	WAG030071	Lake Washington	Fresh
Seattle Mobile Marine Fisherman's Terminal	WAG994251	Salmon Bay, Lake Washington Ship Canal	Fresh
Seaview Boatyard, Inc. East	WAG030042	Salmon Bay, Lake Washington Ship Canal	Fresh
Seaview Boatyard, Inc. North	WAG030118	Squalicum Harbor, Bellingham Bay (Inner)	Marine
Seaview Boatyard, Inc. West	WAG030043	Shilshole Bay, Puget Sound (Central)	Marine
Seaview Yacht Service Fairhaven	WAG030137	Bellingham Bay (Inner)	Marine
Shelton Yacht Club	WAG031010	Oakland Bay	Marine
Skyline Marina	WAG030039	Flounder Bay, Burrows Bay, Rosario Strait, Strait of Georgia	Marine
South Bend Boat, LLC	WAG031000	Willapa River	Fresh
South Park Marina	WAG030045	Duwamish Waterway	Fresh
Suldans Boat Works, Inc.	WAG030046	Sinclair Inlet	Marine
Swantown Boatyard	WAG031043	East Bay, Budd Inlet, Puget Sound	Marine
Swegle Boatworks	WAG031042	Willapa River	Fresh
Tacoma Marine Services	WAG031026	Thea Foss Waterway, Commencement Bay, Puget Sound	Marine
The Landings at Colony Wharf	WAG030006	Whatcom Creek Waterway, Bellingham Bay	Marine
The Shipyard, LLC	WAG031039	Hoquiam River	Fresh
Walsh Marine	WAG030053	Drayton Harbor, Strait of Georgia	Marine
West Sound Marina, Inc.	WAG030054	West Sound	Marine

Table 1. Facilities Currently Covered under this Permit (continued).

Facility Name	Permit Number	Receiving Waterbody (specific to general)	Waterbody Type
Yacht Performance Center	WAG030106	Portage Bay, Lake Union / Lake Washington Ship Canal	Fresh
Yachtfish Marine Port Orchard	WAG030016	Sinclair Inlet	Marine
Yachtfish Marine Seattle	WAG030076	Lake Union	Fresh
Yardarm Knot, Inc.	WAG031055	Salmon Bay, Lake Washington Ship Canal	Fresh
Zittels Marina, Inc.	WAG031012	Baird Cove, Nisqually Reach, Puget Sound	Marine

Table 2. Characteristics of Receiving Waters

	Total Hardness (mg/L as CaCO3)	Total Copper (ug/L)	Dissolved Copper (ug/L)	Total Lead (ug/L)	Dissolved Lead (ug/L)	Total Zinc (ug/L)	Dissolved Zinc (ug/L)
Marine Waters							
Number of Results (2011-2015)	NA	44 pairs		40 pairs		40 pairs	
Average	NA	4.07	0.70	0.027	0.004	0.54	0.49
Standard Deviation	NA	21.1	1.36	0.02	0.004	0.16	0.2
Geometric Mean	NA	0.55	0.40	0.02	0.003	0.52	0.45
95th Percentile	NA	7.78	4.41	0.06	0.008	0.89	0.87
90th Percentile	NA	1.18	0.63	0.05	0.005	0.85	0.72
Median	NA	0.38	0.32	0.02	0.003	0.50	0.43
Average Diss/Total Ratio	NA	0.782		0.501		0.914	
Lake Union and Lake Washington Ship Canal							
Number of Results (2006, 2007, and 2008)	35	NL		45 pairs		NL	
Average	40.3	NL	NL	0.11	0.03	NL	NL
Standard Deviation	2.7	NL	NL	0.05	0.01	NL	NL
Geometric Mean	NA	NL	NL	0.10	0.03	NL	NL
95th Percentile	45.7	NL	NL	0.20	0.04	NL	NL
90th Percentile	NA	NL	NL	0.18	0.03	NL	NL
Median	39.7	NL	NL	0.10	0.03	NL	NL
Average Diss/Total Ratio	NA	NL		0.305		NL	
Fresh Surface Water Bodies	**(a, b)**	**(a)**		**(a, b)**		**(a, b)**	
Number of Results (2011-2015)	374	537 pairs		10 pairs		134 pairs	
Average	57.0	3.90	2.82	0.20	0.06	30.4	25.4
Standard Deviation	25.8	27.9	26.0	0.17	0.04	262	251
Geometric Mean	NA	1.11	0.75	0.14	0.06	3.30	2.13
95th Percentile	102	5.30	2.68	0.50	0.11	14.3	11.7
90th Percentile	NA	3.24	2.09	0.49	0.06	10.7	6.38
Median	50.6	1.07	0.71	0.17	0.05	2.50	2.00
Average Diss/Total Ratio	NA	0.340		0.216		0.752	

The source of these data was the Ecology Environmental Information Management database.

(a) = In Western Washington only.

(b) = Excluding Lake Union and Lake Washington Ship Canal.

mg/L = Milligrams per liter.

ug/L = Micrograms per liter.

NA = Not applicable

NL = Not impaired per the current 303(d) list.

Table 3. Characteristics of Untreated Boatyard Pressure-Washing Wastewater (1992)

Parameter	Average Concentration	Greatest Reported Value or Range
Arsenic (µg/L)	80	100
Copper (µg/L)	55,000	190,000
Lead (µg/L)	1,700	14,000
Tin (µg/L)	490	1,400
Zinc (µg/L)	6,000	22,000
Oil and grease (mg/L)	None visible	None visible
pH (S.U.)	7.2	6.7 to 8.2
Total Suspended Solids (mg/L)	800	3,100
Turbidity (NTU)	469	1,700

The source of these data was the study conducted by METRO (1992).

µg/L = Micrograms per liter.

mg/L = Milligrams per liter.

NTU = Nephelometric turbidity units.

S.U. = Standard units.

Table 4. Summary of Seasonal Pressure-Washing Wastewater Monitoring Data for the Boatyard General Permit, 2011 through 2014

	June through Sept 2011				June through Sept 2012				June through Sept 2013				June through Sept 2014			
	Copper (Lim=2.4)	**Lead (Lim=1.2)**	**Zinc (Lim=3.3))**	**pH (5.0-11.0)**	**Copper (Lim=2.4)**	**Lead (Lim=1.2)**	**Zinc (Lim=3.3)**	**pH (5.0-11.0)**	**Copper (Lim=2.4)**	**Lead (Lim=1.2)**	**Zinc (Lim=3.3)**	**pH (5.0-11.0)**	**Copper (Lim=2.4)**	**Lead (Lim=1.2)**	**Zinc (Lim=3.3))**	**pH (5.0-11.0)**
Number of Permittees with Monitoring Data	12	12	12	12	13	13	13	13	12	12	12	12	12	12	12	12
Number of Maximum and Single Sample Values	42	41	42	40	44	44	44	48	43	44	43	46	42	42	42	43
Median of Maximum and Single Sample Values **(mg/L or S.U.)**	0.58	0.0030	0.10	7.4	0.64	0.0020	0.12	7.1	0.27	0.0021	0.15	7.5	0.53	0.0033	0.16	7.1
Average of Maximum and Single Sample Values **(mg/L or S.U.)**	1.9	0.064	36	NA	183	9.8	50	NA	0.77	0.023	0.42	NA	0.76	0.043	0.63	NA
Number of Discharge Limit Excursions	4	0	2	3	7	2	4	1	4	0	1	0	1	0	1	1
Number of Permittees Who Exceeded the Limit	3	0	2	3	3	1	3	1	2	0	1	0	1	0	1	1
Number of pH Values Greater than 9.0	---	---	---	8	---	---	---	10	---	---	---	4	---	---	---	6
Number of Permittees with pH Values Greater than 9.0 (a)	---	---	---	3	---	---	---	3	---	---	---	3	---	---	---	3

Lim = Discharge Limit.
mg/L = Milligrams per liter.
S.U. = Standard units.
NA = Not applicable.

(a) = Only the following four Permittees reported pH values greater than 9.0:
WAG031047 = Platypus Marine, Inc.
WAG031027 = Port of Port Angeles Boatyard
WAG031006 = Port of Port Townsend
WAG030039 = Skyline Marina

Table 5. Selected Statistics for Pollutants in Stormwater Runoff from Boatyards Reported in Discharge Monitoring Reports

Monitoring Period Date Range (Notes)	Parameter	Number of Results	Average (ug/L)	Median (ug/L)	Maximum (ug/L)
1998 - 2002	Total Copper	na	na	410	na
2006 - 2008 (Excluding all values <1.0)	Total Copper	381	492	110	29,100
2006 - 2008	Oil & Grease	200	4,710	5,000	31,000
2006 - 2008	TSS	403	26,400	10,000	1,200,000
2008 - 2010 (Only boatyards without treatment)	Total Copper	239	192	72	5,650
2008 - 2010	Total Lead	133	20.6	4.0	550
2008 - 2010	Total Zinc	206	344	140	6,000
2011 - 2014	Total Copper	844	143	31.1	5,770
2011 - 2014	Total Lead	816	10.9	1.0	1,045
2011 - 2014 (Fresh waters only)	Total Lead	167	11.6	1.0	806
2011 - 2014	Total Zinc	845	157	49.0	5,100

na = Data are not available.
ug/L = Micrograms per liter.
TSS = Total suspended solids.

Table 6. Toxic Pollutants in Stormwater Runoff from Selected Boatyards, April and May 2006

Parameter (ug/L)	Water Quality Criteria (fresh water / marine)	Swantown (marine)		Port Townsend (marine)	Seaview (fresh water)
		04/08/06	04/13/06	05/23/06	04/08/06
1-Methylnaphthalene	na	0.06 U	2.9	0.06 U	0.19
2,4-Dimethylphenol	(380 / 850)	0.16	3	0.06 U	1.1
2-Methylnaphthalene	na	0.06 U	3.3	0.06 U	0.27
2-Methylphenol	na	0.19	0.54	0.07	1
2-Nitrophenol	na	0.25 J	0.25 U	0.26 U	0.26 U
4,6-Dinitro-2-methylphenol	na	0.59 J	0.63 U	0.64 U	0.64 U
4-Chloro-3-methylphenol	na	0.12 U	0.13 U	8.4	0.13 U
4-Methylphenol	na	0.85	0.06 U	1.2	3.1
Acenaphthene	(670 / 990)	0.06 U	0.11	0.06 U	0.22
Acenaphthylene	na	0.06 U	3.9	0.06 U	0.42
Anthracene	(9,600 / 110,000)	0.06 U	0.07	0.06 U	0.58
Benzo(a)anthracene	(0.0028 / 0.031)	0.06 U	0.05 J	0.14	0.24
Benzo(a)pyrene	(0.0028 / 0.031)	0.06 U	0.06 U	0.04 J	0.26
Benzo(b)fluoranthene	(0.0028 / 0.031)	0.06 U	0.05 J	0.2	0.39
Benzo(g,h,i)perylene	na	0.06 U	0.08	0.06 J	0.16
Benzo(k)fluoranthene	(0.0028 / 0.031)	0.06 U	0.07	0.15	0.4
Benzoic acid	na	5.8	1.3 U	0.74 J	1.3 U
Benzyl alcohol	na	0.64	0.13 U	0.13 UJ	4.5
bis(2-Ethylhexyl) phthalate	(1.8 / 5.9)	2.8	1.3 UJ	2.1	15
Butylbenzylphthalate	na	0.39	0.14	0.03 J	2.1
Caffeine	na	2.7	0.61	0.46	15
Carbazole	na	0.06 UJ	0.06 UJ	0.06 UJ	1.2 J
Chrysene	(0.0028 / 0.031)	0.07 J	0.08	0.26	0.82
Dibenzofuran	na	0.06 U	0.08	0.06 U	0.29
Diethylphthalate	na	0.28 J	0.05 J	0.09 J	1.2
Dimethylphthalate	(313,000 / 2,900,000)	1	0.22	0.68	13 E
di-N-Butylphthalate	na	2.6	0.54	0.16 J	4.3
Fluoranthene	(300 / 370)	0.12	0.35	0.42	2.4
Fluorene	(1,300 / 1,400)	0.06 U	0.29	0.06 U	0.33
Indeno(1,2,3-cd)pyrene	(0.0028 / 0.031)	0.06 U	0.06 U	0.05 J	0.12
Isophorone	(8.4 / 600)	0.06 U	0.06 U	0.06 U	0.35
Naphthalene	na	0.06 U	2.6	0.06 U	0.32
Phenanthrene	na	0.13	0.12	0.15	2.1
Phenol	(21,000 / 4,600,000	0.84	0.55	0.29	4.6
Pyrene	(960 / 11,000)	0.1	0.63	0.38 J	1.3
Retene	na	0.08	0.06 U	0.06 U	0.58

The source of these data was the study conducted by Ecology in 2006 (Ecology Pub. No. 06-03-041).

E = Exceeds calibration range.
J = Estimated concentration.
na = None available.
U = Not detected at or above the reported value.
UJ = Not detected at or above the reported estimated value.

Table 7. Organotin in Stormwater Runoff from Selected Boatyards, April and May 2006

Parameter (ug/L)	Water Quality Criteria (freshwater / marine)	Swantown (marine)			Port Townsend (marine)	Seaview (freshwater)	
		04/08/06	04/13/06	05/31/06	05/23/06	04/08/06	05/23/06
Dibutyltin	na	0.041 J	0.002 UJ	0.033 J	0.010	0.064 J	0.10
Monobutyltin	na	0.001 UJ	0.001 UJ	0.012 J	0.006 J	0.001 UJ	0.014
Tributyltin	(0.460 / 0.37)	0.22	0.13	0.010 J	0.18 J	6.0	0.36

The source of these data was the study conducted by Ecology in 2006 (Ecology Pub. No. 06-03-041).

J = Estimated concentration.

na = None available.

UJ = Not detected at or above the reported estimated value.

Table 8a. Summary of Stormwater Runoff Monitoring Data for the Boatyard General Permit, To Fresh and Marine Waters, 2011 through 2015

	Oct 2011 through May 2012			Oct 2012 through May 2013			Oct 2013 through May 2014			Oct 2014 through May 2015			Four-Year Summary		
	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)
Number of Permittees with Numeric Monitoring Data	43	41	45	51	49	52	46	46	49	45	45	48	54	55	54
Number of Maximum or Single Sample Values	191	184	190	213	206	214	244	235	244	196	191	197	844	816	845
Median of Maximum and Single Sample Values **(ug/L)**	42.0	1.0	78	33.0	1.0	56	26.0	1.0	38	26.0	1.0	28	31.1	1.0	49.0
95th Percentile of Maximum and Single Sample Values **(ug/L)**	857	44	963	589	43	674	499	22	636	379	23	521	567	32	679
Average of Maximum and Single Sample Values **(ug/L)**	182	12	194	174	14	172	118	9.6	156	101	7.2	107	143	10.9	157
Number of Benchmark or Limit Excursions	49	3	85	45	3	79	49	1	84	34	1	56	177	8	304
Number of Permittees Who Exceeded the Benchmark or Limit	18	3	30	22	3	35	21	1	32	13	1	20	35	7	43
Percent of Values that Achieved the Benchmark or Limit	74%	98%	55%	79%	99%	63%	80%	100%	66%	83%	99%	72%	79%	99%	64%
Percent of Permittees that Achieved the Benchmark or Limit	58%	93%	33%	57%	94%	33%	54%	98%	35%	71%	98%	58%	35%	87%	20%
Number of Permittees Who Reported Seasonal Average Values	27	NA	27	31	NA	31	33	NA	33	13	NA	13	---	---	---
Correctly	4	NA	4	6	NA	5	4	NA	4	3	NA	2	---	---	---
Incorrectly	23	NA	23	25	NA	26	29	NA	29	10	NA	11	---	---	---
												Coefficient of Variation =	2.75	5.30	2.11

Table 8b. Summary of Stormwater Runoff Monitoring Data for the Boatyard General Permit, To Fresh Waters, 2011 through 2015

	Oct 2011 through May 2012			Oct 2012 through May 2013			Oct 2013 through May 2014			Oct 2014 through May 2015			Four-Year Summary		
	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)
Number of Permittees with Numeric Monitoring Data	10	9	12	12	11	14	11	10	13	10	10	12	13	11	15
Number of Maximum or Single Sample Values	43	39	50	50	47	57	49	46	56	35	35	40	177	167	203
Median of Maximum and Single Sample Values **(ug/L)**	50	0.80	52.6	26.7	1.29	61.4	17.9	1.0	20.2	23.7	1.5	14.6	22.8	1.0	31.5
95th Percentile of Maximum and Single Sample Values **(ug/L)**	1,485	34	514	1,064	81	483	109	19	461	106	10	450	386	30	511
Average of Maximum and Single Sample Values **(ug/L)**	239	7.6	155	225	26	182	45.4	6.5	93.2	31.6	3.4	68.7	140	11.6	128
Number of Benchmark or Limit Excursions	10	0	20	8	1	19	2	0	14	0	0	7	20	1	60
Number of Permittees Who Exceeded the Benchmark or Limit	3	0	7	3	1	6	2	0	6	0	0	2	6	1	9
Percent of Values that Achieved the Benchmark or Limit	77%	100%	60%	84%	98%	67%	96%	100%	75%	100%	100%	83%	89%	99%	70%
Percent of Permittees that Achieved the Benchmark or Limit	70%	100%	42%	75%	91%	57%	82%	100%	54%	100%	100%	83%	54%	91%	40%
												Coefficient of Variation =	3.87	5.59	2.15

Table 8c. Summary of Stormwater Runoff Monitoring Data for the Boatyard General Permit, To Marine Waters, 2011 through 2015

	Oct 2011 through May 2012			Oct 2012 through May 2013			Oct 2013 through May 2014			Oct 2014 through May 2015			Four-Year Summary		
	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)	Copper (BM=147)	Lead (Lim=185)	Zinc (BM=90)
Number of Permittees with Numeric Monitoring Data	33	32	32	39	38	38	35	36	36	35	35	36	40	41	41
Number of Maximum or Single Sample Values	144	139	143	160	158	161	190	189	190	158	156	159	652	642	653
Median of Maximum and Single Sample Values **(ug/L)**	38	1.0	81.0	34.2	1.0	57.0	34.1	1.0	48.0	27.8	0.80	34.0	33.3	1.0	53.4
95th Percentile of Maximum and Single Sample Values **(ug/L)**	656	48	999	551	41	682	542	22	701	449	29	538	558	35	717
Average of Maximum and Single Sample Values **(ug/L)**	148	14.2	215	157	10.9	173	134	10.3	177	113	8.1	116	138	10.8	169
Number of Benchmark or Limit Excursions	36	3	68	34	2	64	44	1	72	31	1	49	145	7	253
Number of Permittees Who Exceeded the Benchmark or Limit	15	3	23	19	2	29	19	1	26	13	1	18	28	6	36
Percent of Values that Achieved the Benchmark or Limit	75%	98%	52%	79%	99%	60%	77%	99%	62%	80%	99%	69%	78%	99%	61%
Percent of Permittees that Achieved the Benchmark or Limit	55%	91%	28%	51%	95%	24%	46%	97%	28%	63%	97%	50%	30%	85%	12%
												Coefficient of Variation =	2.43	5.20	2.05

BM = Benchmark.

Lim = Discharge Limit.

ug/L = Micrograms per liter.

The total numbers of permittees and results were low because only about two-thirds of the permittees submitted monitoring data. Therefore, the percentages of permittees and results that achieved their benchmark or limit may be biased high.

Table 9. Waterbodies in Western Washington Impaired by Boatyard-Related Pollutants [303(d) List, Category 5]

Water Resources Inventory Area	Waterbody Name	Pollutant (in water or sediment)
1 - Nooksack	Bellingham Bay (Inner)	Copper, Lead, Zinc
1 - Nooksack	Fever Creek	Zinc
3 - Lower Skagit-Samish	Padilla Bay, Fidalgo Bay, and Guemes Channel	Copper, Lead, Zinc
3 - Lower Skagit-Samish	Rosario Strait	Copper
8 - Cedar-Sammamish	Lake Union / Lake Washington Ship Canal	Lead
9 - Duwamish-Green	Des Moines Creek	Copper, Zinc
9 - Duwamish-Green	Des Moines Creek, East Tributary	Copper
9 - Duwamish-Green	Duwamish Waterway	Copper, Lead, Zinc
9 - Duwamish-Green	Hill (Mill) Creek	Copper
9 - Duwamish-Green	Massey Creek	Copper, Zinc
9 - Duwamish-Green	McSorley Creek	Copper
9 - Duwamish-Green	Newaukum Creek	Copper
10 - Puyallup-White	Hylebos Creek, East Fork	Copper
12 - Chambers-Clover	Dalco Passage and East Passage	Copper, Lead, Zinc
13 - Deschutes	Budd Inlet (Inner)	Copper, Lead, Zinc
15 - Kitsap	Hood Canal (North)	Copper, Lead, Zinc
15 - Kitsap	Port Gamble Bay	Copper, Lead, Zinc
15 - Kitsap	Sinclair Inlet	Zinc
15 - Kitsap	Unnamed Creek (Trib to North Creek)	Lead
18 - Elwha-Dungeness	Port Angeles Harbor	Copper, Lead, Zinc
26 - Cowlitz	Unnamed Creek (Trib to Green River)	Copper

This list is based on the Washington State 303(d) List, approved by the U.S. EPA in 2012, available at: http://www.ecy.wa.gov/programs/wq/303d/currentassessmt.html.

Note that often only portions of the named waterbody have been designated as impaired.

Table 10. Reasonable Potential Calculation for Stormwater Runoff Discharges to Fresh Waterbodies in Western Washington, and Excluding Lake Union and the Lake Washington Ship Canal

Facility	
Water Body Type	Freshwater
Rec. Water Hardness	57 mg/L

Dilution Factors:	Acute	Chronic
Aquatic Life	5.0	5.0
Human Health Carcinogenic		5.0
Human Health Non-Carcinogenic		5.0

			All Western WA		Not . . .				. . . Lk Union or ShipCanal
			10-Yr	5-Yr	10-Yr	5-Yr	10-Yr	5-Yr	
Pollutant, CAS No. & NPDES Application Ref. No.			COPPER - 744058 6M Hardness dependent	**COPPER - 744058 6M Hardness dependent**	LEAD - 7439921 7M Dependent on hardness	**LEAD - 7439921 7M Dependent on hardness**	ZINC- 7440666 13M hardness dependent	**ZINC- 7440666 13M hardness dependent**	
Effluent Data	# of Samples (n)		177	**177**	167	**167**	203	**203**	
	Coeff of Variation (Cv)		3.87	**3.87**	5.59	**5.59**	2.15	**2.15**	
	Effluent Concentration, ug/L (Max. or 95th Percentile)		386	**386**	30	**30**	511	**511**	
	Calculated 50th percentile Effluent Conc. (when n>10)		22.8	**22.8**	1.0	**1.0**	31.5	**31.5**	
Receiving Water Data	90th Percentile Conc., ug/L		3.34	**2.09**	0.19	**0.06**	17.6	**6.38**	
	Geo Mean, ug/L		1.10	**0.75**	0.06	**0.06**	2.91	**2.13**	
Water Quality Criteria	Aquatic Life Criteria, ug/L	Acute	10.0196	10.0196	34.844	34.844	71.0818	71.0818	
		Chronic	7.02142	7.02142	1.35782	1.35782	64.9085	64.9085	
	WQ Criteria for Protection of Human Health, ug/L		1300	1300	-	**-**	-	-	
	Metal Criteria Translator, decimal	Acute	0.681	**0.340**	0.233	**0.216**	0.613	**0.752**	
		Chronic	0.681	**0.340**	0.233	**0.216**	0.613	**0.752**	
	Carcinogen?		N	N	N	**N**	N	N	

Aquatic Life Reasonable Potential

Effluent percentile value			0.950	0.950	0.950	0.950	0.950	0.950
s	$s^2=\ln(CV^2+1)$		1.665	1.665	1.864	1.864	1.314	1.314
Pn	$Pn=(1\text{-confidence level})^{1/n}$		0.983	0.983	0.982	0.982	0.985	0.985
Multiplier			1.00	1.00	1.00	1.00	1.00	1.00
Max concentration (ug/L) at edge of…		Acute	55.245	27.920	1.550	1.344	76.729	81.958
		Chronic	55.245	27.920	1.550	1.344	76.729	81.958
Reasonable Potential? Limit Required?			YES	YES	YES	NO	YES	YES

Aquatic Life Limit Calculation

# of Compliance Samples Expected per month		4	4	4		4	4
LTA Coeff. Var. (CV), decimal		3.87	3.87	5.59		2.15	2.15
Permit Limit Coeff. Var. (CV), decimal		3.87	3.87	5.59		2.15	2.15
Waste Load Allocations, ug/L	Acute	36.7379	41.7379	173.46		285.009	329.889
	Chronic	21.7471	26.7471	6.0291		254.142	299.022
Long Term Averages, ug/L	**Acute**	3.05673	**3.47275**	12.9056		31.7974	36.8045
	Chronic	2.60032	3.19817	0.57893		48.5903	57.171
Limiting LTA, ug/L		2.60032	**3.47275**	0.57893		31.7974	36.8045
Metal Translator or 1?		0.68	0.34	0.23		0.61	0.75
Average Monthly Limit (AML), ug/L		13.7	**36.5**	9.5		149.4	**140.9**
Maximum Daily Limit (MDL), ug/L		45.9	122.8	33.4	**No MDL**	464.9	**438.7**

Human Health Reasonable Potential

s	$s^2=\ln(CV^2+1)$	1.66468	1.66468
Pn	Pn=(1-confidence level)1/n	0.983	0.983
Multiplier		0.02908	0.02908
Dilution Factor		5	5
Max Conc. at edge of Chronic Zone, ug/L		5.44	5.16
Reasonable Potential? Limit Required?		**NO**	**NO**

Human Health Limit Calculation

# of Compliance Samples Expected per month	
Average Monthly Effluent Limit, ug/L	
Maximum Daily Effluent Limit, ug/L	

References: WAC 173-201A,
Technical Support Document for Water Quality-based Toxics Control, US EPA, March 1991, EPA/505/2-90-001, pages 56/99

Table 11. Reasonable Potential Calculation for Stormwater Runoff Discharges to Marine Waterbodies

			Dilution Factors:	Acute	Chronic
Facility			**Aquatic Life**	**5.0**	**5.0**
Water Body Type	**Marine**		**Human Health Carcinogenic**		**5.0**
Rec. Water Hardness	mg/L		**Human Health Non-Carcinogenic**		**5.0**

Pollutant, CAS No. & NPDES Application Ref. No.			10-Yr COPPER - 744058 6M Hardness dependent	**5-Yr COPPER - 744058 6M Hardness dependent**	10-Yr LEAD - 7439921 7M Dependent on hardness	**5-Yr LEAD - 7439921 7M Dependent on hardness**	10-Yr ZINC- 7440666 13M hardness dependent	**5-Yr ZINC- 7440666 13M hardness dependent**
Effluent Data	# of Samples (n)		652	**652**	642	**642**	653	**653**
	Coeff of Variation (Cv)		2.43	**2.43**	5.20	**5.20**	2.05	**2.05**
	Effluent Concentration, ug/L (Max. or 95th Percentile)		558	**558**	35	**35**	717	**717**
	Calculated 50th percentile Effluent Conc. (when n>10)		33.3	**33.3**	1.0	**1.0**	53.4	**53.4**
Receiving Water Data	90th Percentile Conc., ug/L		3.00	**0.63**	0.50	**0.01**	10.0	**0.72**
	Geo Mean, ug/L		0.67	**0.40**	0.029	**0.003**	1.65	**0.45**
Water Quality Criteria	Aquatic Life Criteria, ug/L	Acute	4.8	**4.8**	210	210	90	**90**
		Chronic	3.1	3.1	8.1	8.1	81	81
	WQ Criteria for Protection of Human Health, ug/L		-	-	-	**-**	-	-
	Metal Criteria Translator, decimal	Acute	0.767	**0.782**	0.442	**0.501**	0.863	**0.914**
		Chronic	0.767	**0.782**	0.442	**0.501**	0.863	**0.914**
	Carcinogen?		N	N	N	**N**	N	N

Aquatic Life Reasonable Potential

Effluent percentile value			0.950	0.950	0.950	0.950	0.950	0.950
s	$s^2=\ln(CV^2+1)$		1.390	1.390	1.826	1.826	1.284	1.284
Pn	$Pn=(1\text{-confidence level})^{1/n}$		0.995	0.995	0.995	0.995	0.995	0.995
Multiplier			1.00	1.00	1.00	1.00	1.00	1.00
Max concentration (ug/L) at edge of…		Acute	87.997	87.775	3.494	3.511	131.754	131.644
		Chronic	87.997	87.775	3.494	3.511	131.754	131.644
Reasonable Potential? Limit Required?			**YES**	**YES**	**NO**	**NO**	**YES**	**YES**

Aquatic Life Limit Calculation

# of Compliance Samples Expected per month			4	4			4	4
LTA Coeff. Var. (CV), decimal			2.43	2.43	5.2	5.2	2.05	2.05
Permit Limit Coeff. Var. (CV), decimal			2.43	2.43	5.2	5.2	2.05	2.05
Waste Load Allocations, ug/L		Acute	12	21.48	1048	1049.98	410	447.12
		Chronic	3.5	12.98	38.5	40.48	365	402.12
Long Term Averages, ug/L		Acute	1.2433	**2.22551**	79.4072	79.5572	47.1675	51.43788
		Chronic	0.60125	2.22977	3.84069	4.03821	72.8089	80.21344
Limiting LTA, ug/L			0.60125	**2.22551**	3.84069	4.03821	47.1675	51.43788
Metal Translator or 1?			0.77	0.78	0.44	0.50	0.86	0.91
Average Monthly Limit (AML), ug/L			2.4	**8.7**			153.9	**158.4**
Maximum Daily Limit (MDL), ug/L			7.6	**27.5**		**No MDL**	475.1	**489.2**

Human Health Reasonable Potential

s	$s^2=\ln(CV^2+1)$	
Pn	Pn=(1-confidence level)1/n	
Multiplier		
Dilution Factor		
Max Conc. at edge of Chronic Zone, ug/L		
Reasonable Potential? Limit Required?		

Human Health Limit Calculation

# of Compliance Samples Expected per month	
Average Monthly Effluent Limit, ug/L	
Maximum Daily Effluent Limit, ug/L	

References: WAC 173-201A,
Technical Support Document for Water Quality-based Toxics Control, US EPA, March 1991, EPA/505/2-90-001, pages 56/99

Table 12. Reasonable Potential Calculation for Stormwater Runoff Discharges to Lake Union and the Lake Washington Ship Canal

				Dilution Factors:	Acute	Chronic
Facility				Aquatic Life	1.0	1.0
Water Body Type	Freshwater			Human Health Carcinogenic		1.0
Rec. Water Hardness	40.3 mg/L	Lk Union & Ship Canal		Human Health Non-Carcinogenic		1.0
			3 Years	Dilution Factors are 1.0 due to 303(d) impaired listing.		

Pollutant, CAS No. & NPDES Application Ref. No.			LEAD - 7439921 7M Dependent on hardness
Effluent Data	# of Samples (n)		167
	Coeff of Variation (Cv)		5.59
	Effluent Concentration, ug/L (Max. or 95th Percentile)		30
	Calculated 50th percentile Effluent Conc. (when n>10)		1.0
Receiving Water Data	90th Percentile Conc., ug/L		0.03
	Geo Mean, ug/L		0.03
Water Quality Criteria	Aquatic Life Criteria, ug/L	Acute	23.7075
		Chronic	0.92385
	WQ Criteria for Protection of Human Health, ug/L		-
	Metal Criteria Translator, decimal	Acute	0.305
		Chronic	0.305
	Carcinogen?		N

Aquatic Life Reasonable Potential

Effluent percentile value			0.950
s	$s^2=\ln(CV^2+1)$		1.864
Pn	$Pn=(1\text{-confidence level})^{1/n}$		0.982
Multiplier			1.00
Max concentration (ug/L) at edge of…		Acute	9.150
		Chronic	9.150
Reasonable Potential? Limit Required?			YES

Aquatic Life Limit Calculation

# of Compliance Samples Expected per month			4
LTA Coeff. Var. (CV), decimal			5.59
Permit Limit Coeff. Var. (CV), decimal			5.59
Waste Load Allocations, ug/L		Acute	23.7075
		Chronic	0.92385
Long Term Averages, ug/L		**Acute**	**1.76386**
		Chronic	0.08871
Limiting LTA, ug/L			**1.76386**
Metal Translator or 1?			0.31
Average Monthly Limit (AML), ug/L			**22.1**
Maximum Daily Limit (MDL), ug/L			77.7

Human Health Reasonable Potential

s	$s^2=\ln(CV^2+1)$	
Pn	Pn=(1-confidence level)1/n	
Multiplier		
Dilution Factor		
Max Conc. at edge of Chronic Zone, ug/L		
Reasonable Potential? Limit Required?		

Human Health Limit Calculation

# of Compliance Samples Expected per month	
Average Monthly Effluent Limit, ug/L	
Maximum Daily Effluent Limit, ug/L	

References: WAC 173-201A.

Table 13. Comparison of Current Limits and Benchmarks for Stormwater Runoff with Proposed Limits and Benchmarks . . .

. . . To Lake Union or the Lake Washington Ship Canal (a)

Parameter	303(d) Listed?	Current Version		Proposed Version		
		Seasonal Average Benchmark (b)	Maximum Daily Limit or Benchmark	Bases for Proposed Limit or Benchmark	Seasonal Average Benchmark (b)	Maximum Daily Limit or Benchmark
Copper, Total (ug/L)	no	50	147 (benchmark)	Technology / Technology	50	147 (benchmark)
Lead, Total (ug/L)	YES	not applicable	185 (limit)	NA / Water quality	not applicable	78 (limit)
Zinc, Total (ug/L)	no	85	90 (benchmark)	Technology / Technology	85	90 (benchmark)

. . . To All Other Freshwater Bodies (c)

Parameter	303(d) Listed?	Current Version		Proposed Version		
		Seasonal Average Benchmark (b)	Maximum Daily Benchmark	Bases for Proposed Benchmark	Seasonal Average Benchmark (b)	Maximum Daily Benchmark
Copper, Total (ug/L)	verify	50	147	Technology / Technology	50	147
Lead, Total (ug/L)	verify	not applicable	not applicable	NA / NA	not applicable	not applicable
Zinc, Total (ug/L)	verify	85	90	Technology / Technology	85	90

. . . To Marine Waters

Parameter	303(d) Listed?	Current Version		Proposed Version		
		Seasonal Average Benchmark (b)	Maximum Daily Benchmark	Bases for Proposed Benchmark	Seasonal Average Benchmark (b)	Maximum Daily Benchmark
Copper, Total (ug/L)	no	50	147	Technology / Technology	50	147
Lead, Total (ug/L)	no	not applicable	not applicable	NA / NA	not applicable	not applicable
Zinc, Total (ug/L)	no	85	90	Technology / Technology	85	90

Table 13. Comparison of Current Limits and Benchmarks for Stormwater Runoff with Proposed Limits and Benchmarks . . .

. . . To Groundwater

Parameter	303(d) Listed?	Current Version		Proposed Version		
		Seasonal Average Limit (b)	Maximum Daily Limit	Bases for Proposed Limit	Seasonal Average Limit (b)	Maximum Daily Limit
Copper, Total (ug/L)	NA	1,000	1,000	Water quality / Water quality	1,000	1,000
Zinc, Total (ug/L)	NA	1,020	1,020	Technology / Technology	1,020	1,020

. . . To Non-Delegated Publicly-Owned Treatment Works

Parameter	303(d) Listed?	Current Version		Proposed Version		
		Seasonal Average Limit (b)	Maximum Daily Limit (d)	Bases for Proposed Limit	Seasonal Average Limit (b)	Maximum Daily Limit (d)
Copper, Total (ug/L)	NA	not applicable	2,400	Technology / Technology	not applicable	2,400
Lead, Total (ug/L)	NA	not applicable	1,200	NA / Technology	not applicable	1,200
Zinc, Total (ug/L)	NA	not applicable	3,300	Technology / Technology	not applicable	3,300
pH (S.U.)	NA	not applicable	5.0 to 11.0	Technology / Technology	not applicable	5.0 to 11.0

(a) Lake Union and the Lake Washington Ship Canal consist of the surface waters between the Fremont Avenue bridge on the west and the eastern end of the Montlake Cut, about 50 meters west of the University of Washington Canoe House.

(b) To determine the "seasonal average" for the purposes of only this general permit, calculate the arithmetic average of all the daily discharge concentrations determined during the entire wet season (October through May). The daily discharge is the arithmetic average measurement of the pollutant over a day. Averaging does not apply to pH, which must be reported as the highest and lowest values if more than one sample is taken in a day.

(c) "All Other Freshwater Bodies" excludes Lake Union and the Lake Washington Ship Canal.

(d) If the treatment works has more stringent limits, the more stringent limits apply.

ug/L = Micrograms per liter.

NA = Not applicable.

S.U. = Standard units.

Table 14. Comparison of Proposed Discharge Limits and Benchmarks for Stormwater Runoff Discharges to Surface Waters with Recent Monitoring Data, 2011 through 2015

Type of Receiving Water and Parameter with the Proposed Maximum Daily Benchmark or Limit		Numerical Results						Permitted Boatyards . . .								
		October - May 2011 - 2013			October - May 2013 - 2015			October - May 2011 - 2015			October - May 2011 - 2013			October - May 2013 - 2015		
		Total	Greater than the Proposed Benchmark or Limit		Total	Greater than the Proposed Benchmark or Limit		Total	. . . Who Reported Numerical Results		Total	. . . Who Reported Numerical Results Greater than the Proposed Benchmark or Limit		Total	. . . Who Reported Numerical Results Greater than the Proposed Benchmark or Limit	
			Number	Percentage		Number	Percentage		Number	Percentage		Number	Percentage		Number	Percentage
Lake Union and the Lake Washington Ship Canal (a)	Copper, BM = 147 ug/L	20	3	15%	10	0	0%	6	2	33%	2	1	50%	1	0	0%
	Lead, Limit = 78 ug/L	10	0	0%	9	0	0%	6	1	17%	1	0	0%	1	0	0%
	Zinc, BM = 90 ug/L	11	9	82%	9	7	78%	6	2	33%	2	1	50%	1	1	100%
All Other Freshwater Bodies (b)	Copper, BM = 147 ug/L	82	15	18%	75	3	4%	18	11	61%	10	4	40%	10	3	30%
	Zinc, BM = 90 ug/L	96	30	31%	87	21	24%	18	13	72%	12	6	50%	12	5	42%
Marine Waters (c)	Copper, BM = 147 ug/L	304	70	23%	348	75	22%	47	41	87%	36	24	67%	38	21	55%
	Zinc, BM = 90 ug/L	304	132	43%	349	121	35%	47	41	87%	38	32	84%	38	27	71%

(a) = "Lake Union and the Lake Washington Ship Canal" includes all surface water bodies between the Fremont Avenue bridge on the west and the eastern end of the Montlake Cut, about 50 meters west of the University of Washington Canoe House.

(b) = "All other freshwater bodies" includes all freshwater bodies in Western Washington except Lake Union and the Lake Washington Ship Canal. To date, only boatyards located in Western Washington have applied for and received coverage under the boatyard general permit.

(c) = Permittees identified the type of water body to which they discharged (fresh water or marine).

BM = Benchmark.

Table 15. Schedule for Monitoring Stormwater Runoff Discharges

Parameter	Units	Sampling Point	Minimum Sampling Frequency	Sample Type
Total Copper	µg/L	Consistent Location	One sample in October, November, January, April, and May	Grab or composite
Total Lead	µg/L	Consistent Location	One sample in October, November, January, April, and May	Grab or composite
Total Zinc	µg/L	Consistent Location	One sample in October, November, January, April, and May	Grab or composite
Visual Monitoring	na	Facility	Weekly	Visual

ug/L = Micrograms per liter.

na = Not applicable.

Table 16. Analytical Methods and Specifications

Parameter	Analytical Method (Accuracy)	Detection Limit (a)	Quantitation Level (b)
Total Copper	EPA 200.8 – ICP/MS (±0.1 mg/L)	0.4	2.0
Total Zinc	EPA 200.8 – ICP/MS (±0.1 mg/L)	0.5	2.5
Total Lead	EPA 200.8 – ICP/MS (±0.1 mg/L)	0.1	0.5
pH	SM 4500-H^+ B – Meter (±0.02 standard units)	na	na

Analytical methods are from "Methods for Chemical Analysis of Water and Wastes," U.S. EPA, Environmental Monitoring Systems Laboratory – Cincinnati, EPA-600/4-020, Revised March 1983 and 1979; and "Precision and Recovery Statements for Methods for Measuring Metals," Appendix D of 40 CFR Part 136.

(a) Detection Limit:
The minimum concentration of an analyte that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR Part 136, Appendix B.

(b) Quantitation Level (the minimum level of quantitation or practical quantitation level):

(1) The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the laboratory has used all method-specified sample weights, volumes, and cleanup procedures. The quantitation level is calculated by multiplying the method detection limit by 3.18 and rounding the result to the number nearest to (1, 2, or 5) x 10^n, where n is an integer. (64 FR 30417)

(2) The smallest detectable concentration of analyte greater than the method detection limit where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs, Submitted to the U.S. EPA December 2007)

APPENDIX A

ACRONYMS AND UNITS OF MEASURE

Acronym	Meaning
AKART	All known, available, and reasonable methods of prevention, control, and treatment
BAT	Best available technology economically achievable
BCT	Best conventional pollutant control technology
BMP	Best management practice
BPT	Best practicable control technology currently available
CFR	Code of Federal Regulations
CWA	Clean Water Act
DMR	Discharge monitoring report
Ecology	Washington State Department of Ecology
EIA	Economic Impact Analysis
EPA	Environmental Protection Agency
METRO	Municipality of Metropolitan Seattle
MSD	Marine sanitation device
NAICS	North American Industry Classification System
NMTA	Northwest Marine Trade Association
NPDES	National Pollutant Discharge Elimination System
PCHB	Pollution Control Hearings Board
POTW	Publicly-owned treatment works
PSA	Puget Soundkeeper Alliance
RCW	Revised Code of Washington State
SEPA	State Environmental Policy Act, RCW 43.21C
SIC	Standard Industrial Classification
SWPPP	Stormwater pollution prevention plan
TMDL	Total maximum daily load
TSD	Technical Support Document
TSS	Total suspended solids
WAC	Washington Administrative Code
WLA	Wasteload allocation

Unit of Measure	Meaning
cfm	Cubic feet per minute
Degree F	Degree Fahrenheit
mg/L	Milligrams per liter
µg/L	Micrograms per liter
S.U.	Standard units

APPENDIX B

(Reserved)

APPENDIX C

LEGAL BASES FOR BOATYARD PERMIT CONDITIONS

Ecology bases the terms and conditions of its NPDES general permits on State and Federal law and regulations. The summary below identifies each of the conditions in the boatyard general permit, describes their content, and cites the laws and regulations upon which they are based.

Special Condition S1 Permit Coverage Required

Identifies the activities, discharges, and facilities that require coverage by the permit; the discharges that are authorized or conditionally authorized under the permit; the geographic area covered by the permit; discharges and facilities excluded from coverage under the permit; and conditions and requirements for permit modification.

40 CFR 122.26 (g)
40 CFR Part 122.41 (f)
RCW 90.48.195
WAC 173-226-050 (2), (3), and (4)
WAC 173-226-070 (1) (d)
WAC 173-226-080 (1) (a), (d), and (j)
WAC 173-226-100 (2)
WAC 173-226-130 (5)

Special Condition S2 Discharge Limits

Identifies the standards and requirements for compliance with the permit, including discharge limits and other requirements for impaired waterbodies.

40 CFR Part 125.3
40 CFR Part 403
Chapter 173-201A WAC
WAC 173-226-070 (1), (2), (3), and (6) (a) and (c)
Chapter 173-303 WAC

Special Condition S3 Mandatory Best Management Practices

Identifies requirements for facility operation and maintenance, including operational restrictions that support compliance with the permit. This condition describes the 13 mandatory BMPs that are required at permitted boatyards for demonstrating that those boatyards have complied with AKART. These BMPs address the use of vacuum sanders, tidal grids, and paints and solvents; in-water maintenance and repair of vessels; management of solid residues, sacrificial anodes, chemicals, oils, and bilge water; decontamination of washing pads; discharge of sewage and gray water; and oversight of do-it-yourselfers.

40 CFR Part 122.2
40 CFR Part 122.41 (e)
RCW 90.48.555 (5) and (6)
WAC 173-201A-110
WAC 173-226-070 (1) (d) and (3) (d)

Special Condition S4 Compliance with Water Quality Standards

Identifies the applicable State standards for compliance with the permit, including those for surface and groundwater quality and sediment management.

40 CFR Part 131.36
RCW 90.48.010
Chapter 173-200 WAC
Chapter 173-201A WAC
Chapter 173-204 WAC

Special Condition S5 Non-Stormwater Miscellaneous Discharges

Identifies those non-stormwater discharges conditionally approved and the requirements for that approval.

WAC 173-226-070 (1) (d)
WAC 173-226-100 (2)

Special Condition S6 Monitoring Requirements

Identifies the required sampling and analytical procedures for monitoring the characteristics and toxicity of discharges; and requirements for effectiveness monitoring, visual inspections, and operational recordkeeping.

40 CFR Part 122.22
40 CFR Part 122.41 (j) (1) and (4)
40 CFR Part 136
Chapter 173-50 WAC
Chapter 173-205 WAC
WAC 173-226-090 (1) (a), (b), (c), (d), and (e); (4); and (5)

Special Condition S7 Response to Monitoring Results that Exceed Benchmarks

Identifies the required reporting and corrective actions to respond to benchmark exceedances.

40 CFR Part 122.41 (e) and (l) (5)
WAC 173-226-070
WAC 173-226-080 (1) (i) and (4)

Special Condition S8 Stormwater Pollution Prevention Plan

Identifies the requirement for and elements of a facility-specific stormwater pollution prevention plan.

40 CFR Part 122.26 (b) (14)
40 CFR Part 122.44 (k) and (s)
40 CFR Part 125.3
Chapter 90.48 RCW
WAC 173-226-070

Special Condition S9 Reporting and Recordkeeping Requirements

Identifies the results that the Permittee must record; and the requirements for engineering documentation, notification and posting, reporting, records retention, public access to information, coordination of inspections, and other reporting.

40 CFR Part 122.41(j) (2) and (3); (k); and (l) (1), (2), (4), (5), (6), and (7)
WAC 173-226-080 (1) (b) and (4)
WAC 173-226-090 (2) and (3) (a) and (b)
WAC 173-226-180 (4)
WAC 173-226-200 (3) (d)

Special Condition S10 Bypass

Identifies the types of permitted bypasses, the procedures that permittees must follow to maintain compliance with this permit, and Ecology's possible responses to a bypass event.

40 CFR Part 122.41 (m)
RCW 90.48.120
WAC 173-201A-410

Special Condition S11 Solid Waste Management

Identifies the requirement for the permittee to properly manage solid wastes and prevent the release of leachate.

WAC 173-226-070 (3) (d)
WAC 173-226-100

Special Condition S12 Reporting for Zebra Mussel Control

Identifies notification, quarantine, and pump-out requirements for vessels carrying zebra mussels.

Chapter 77 RCW

Special Condition S13 Termination of Coverage under This Permit

Explains the process and requirements for a permittee to obtain approval from Ecology for terminating its coverage under this permit.

40 CFR Part 122.41 (f)
RCW 90.48.190
RCW 90.48.195
WAC 173-226-080 (3)
WAC 173-226-180 (5)
WAC 173-226-230 (1)
WAC 173-226-240

General Condition G1 Discharge Violations

Identifies the requirement that discharges and activities must comply with the terms and conditions of the permit.

WAC 173-226-080 (a), (d), and (j)

General Condition G2 Proper Operation and Maintenance

Identifies and expands on the requirement for proper operation and maintenance of treatment and control facilities.

40 CFR Part 122.41 (e)
WAC 173-226-080 (1) (i)

General Condition G3 Right of Entry

Identifies Ecology's right to enter the permittee's property to inspect, collect samples, and review documents.

40 CFR Part 122.41 (i)
RCW 90.48.090
WAC 173-226-080 (1) (h)
WAC 173-226-250 (2)

General Condition G4 Permit Coverage Revoked

Identifies the conditions when Ecology may revoke coverage under the permit.

40 CFR Part 122.41 (f)
Chapter 43.21B RCW
RCW 90.48.090
RCW 90.48.190
RCW 90.48.465
Chapter 173-224 WAC
WAC 173-226-130 (5)
WAC 173-226-240

General Condition G5 General Permit Modification and Revocation
Identifies the conditions when the permit may be modified or revoked.

40 CFR Part 122.41 (f)
RCW 90.48.190
RCW 90.48.195
Chapter 173-226 WAC

General Condition G6 Reporting a Cause for Modification
Identifies the conditions when the permit modification may be required and Ecology's subsequent requirement for a new application for coverage from the permittee.

40 CFR Part 122.41 (f), and (l) (1)
40 CFR Part 122.62
WAC 173-220-150 (1) (b)
WAC 173-226-080 (1) (a), (b), and (d)

General Condition G7 Toxic Pollutants
Identifies requirements for compliance with the Clean Water Act.

CWA Section 307(a)
WAC 173-226-070

General Condition G8 Other Requirements of 40 CFR
Incorporates other requirements from Federal regulations.

40 CFR Part 122.41
40 CFR Part 122.42

General Condition G9 Compliance with Other Laws and Statutes
Identifies the requirement for the permittee to comply with other applicable statutes, ordnances, and regulations.

40 CFR Part 122.41
40 CFR Part 122.42
WAC 173-226-070 (3) and (5)

General Condition G10 Additional Monitoring
Identifies the possibility that Ecology may assign additional monitoring requirements.

CWA Section 308
40 CFR Part 122.41 (h)

General Condition G11 Payment of Fees
Identifies the requirement for the permittee to pay fees and Ecology's ability to take actions if fees are not paid.

RCW 90.48.160
RCW 90.48.465
Chapter 173-224 WAC
WAC 173-220-150 (1) (d) (viii)

General Condition G12 Removed Substances
Prohibits the discharge of pollutants removed during treatment.

40 CFR Part 125.3 (g)
RCW 90.48.010
RCW 90.48.080
WAC 173-220-130 (a)

General Condition G13 Requests to be Excluded from Coverage under a General Permit
Identifies how the permittee may be excluded from coverage under this general permit.

WAC 173-216-070
WAC 173-220-040
WAC 173-226-080 (3) and (4)
WAC 173-226-200 (7)
WAC 173-226-240 (4)

General Condition G14 Transfer of Permit Coverage
Identifies how the permittee might transfer permit coverage to another party.

40 CFR Part 122.41 (l) (3)
40 CFR Part 122.61
40 CFR Part 122.63 (d)
WAC 173-226-210

General Condition G15 Duty to Reapply
Identifies the requirement for the permittee to reapply for permit coverage before the current coverage expires.

CWA Section 301
40 CFR Part 122.21 (d)
40 CFR Part 122.41 (b)
RCW 90.48.170
WAC 173-226-080 (2)
WAC 173-226-200 (1), (3), and (4)
WAC 173-226-220 (2)

General Condition G16 Penalties for Violating Permit Conditions
Identifies penalties for violating the terms and conditions of the permit.

40 CFR Part 122.41 (a) (2) and (3)
RCW 90.48.140
RCW 90.48.144
WAC 173-226-250 (3), (4), and (5)

General Condition G17 Signatory Requirements
Identifies the requirements for who must sign and certify applications, reports, and other information provided to Ecology.

40 CFR Part 122.22
40 CFR Part 122.41 (k)
WAC 173-226-090 (3) (b)
WAC 173-226-200 (3) (d)

General Condition G18 Appeals
Identifies the types and methods of appealing the permit and its applicability to particular facilities.

RCW 43.21(B)
WAC 173-226 190

General Condition G19 Severability
Identifies the effect of invalidation of particular terms of the permit.

RCW 90.48.904

General Condition G20 Reporting Other Information
Identifies the requirement for informing Ecology of new or corrected information.

40 CFR Part 122.41(h) and (l) (8)

General Condition G21 Duty to Comply
Identifies the requirement for the permittee to comply with all conditions of this permit, or face possible penalties for violating the Clean Water Act.

40 CFR Part 122.41 (a) and (l) (8)

APPENDIX D

PUBLIC INVOLVEMENT INFORMATION

Revising the Boatyard General Permit
The current boatyard NPDES and State waste discharge general permit was issued by the Washington State Department of Ecology (Ecology) on March 2, 2011. Ecology is now proposing to reissue the permit. This is notice of a draft permit available for public comment. The review and comment period will run from March 16, 2016, until 11:59 PM on April 29, 2016. Ecology will host two informational workshops and two public hearings on the draft permit. Oral comments may be given at the public hearing. Ecology will also accept written comments on the proposed draft permit and fact sheet.

Purpose of the Boatyard General Permit
The boatyard general permit provides coverage for industries located in Washington State that discharge stormwater from areas used to renew the bottom paint on boats. Under Federal and State water quality law (Federal Clean Water Act and State Water Pollution Control Act), a permit is required for the discharge of wastewater, including stormwater runoff. The proposed general permit addresses these legal requirements and controls the discharge of pollutants to protect surface water and groundwater quality in Washington State.

A general permit is similar to an individual wastewater discharge permit except that it covers a group of facilities with similar operations. It implements the Federal Clean Water Act and State Water Pollution Control Act in a single permit. Individual facilities that receive coverage under the general permit are required to comply with the terms and conditions of the permit. Currently, approximately 70 facilities are covered under the boatyard general permit.

Applying for a Boatyard General Permit
Facilities covered under the existing boatyard general permit and have made timely application for renewal will continue to be covered under the reissued permit.

Requesting Copies of the Draft Permit
Beginning March 16, 2016, you can request copies of the draft permit and fact sheet, or you can download copies from the following website:
http://www.ecy.wa.gov/programs/wq/permits/boatyard/index.html

Contact: Dena Jaskar
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600
Telephone: (360) 407-6401
FAX: (360) 407-6426
Email: Dena.Jaskar@ecy.wa.gov

Submitting Written and Oral Comments
Ecology will accept written and oral comments on the draft boatyard general permit and fact sheet. Written comments must be postmarked no later than 11:59 PM, April 29, 2016. Oral comments may be presented by attending and testifying at either one of the public hearings. Comments may be submitted by email if the commenter includes name, address, and telephone number in the comment email. Comments should reference specific permit text when possible.

Submit written comments, preferably by email, to:

James M. Maroncelli
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600
BoatyardGPComments@ecy.wa.gov

Public Workshops and Hearings
Two public workshops and hearings on the draft general permit are scheduled to be held in April 2016. The purpose of the workshops is to explain the general permit, explain the changes from the previous permit, and answer questions in order to facilitate meaningful testimony during the hearings. The purpose of the hearings is to provide an opportunity for people to give formal oral testimony and comments on the proposed permit. Written comments will receive the same consideration as oral testimony. The public workshops and hearings will begin at the times shown below and will conclude when public testimony is completed.

The April 19, 2016, (1:00 PM) workshop and hearing will be held at:
Everett Community College – Corporate & Continuing Education
2333 Seaway Boulevard
Everett, Washington 98203

The April 20, 2016, (1:00 PM) workshop and hearing will be held at:
Ecology Headquarters Building
300 Desmond Drive SE
Lacey, Washington 98503
(360) 407-6400
Map: http://www.ecy.wa.gov/images/offices/map_hq_swro.pdf

Issuing the Final Boatyard General Permit
The final permit will be issued after Ecology receives and considers all public comments. If public comments cause a substantial change in the permit conditions from the original draft permit, another public notice of draft and comment period may ensue.

Ecology expects to issue the general permit on or about June 1, 2016, if there is no substantial change to the draft. It will be effective 30 days later on July 2, 2016. When issued, a copy of the notice of issuance and Ecology's responses to the comments will be sent to all persons who submitted written comment or gave public testimony. The response to comments will also be

posted on Ecology's boatyard website at:
http://www.ecy.wa.gov/programs/wq/permits/boatyard/index.html.

Right to Appeal
Permittees and the public have a right to appeal this permit to the Pollution Control Hearings Board (PCHB) within 30 days of the date of issuance of the final permit. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC.

To appeal you must do the following within 30 days of the date of issuance of this permit:

- File your appeal and a copy of this permit with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this permit on Ecology in paper form by mail or in person (see addresses below). Email is not accepted.

Commenters must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	**Department of Ecology** Attn: Appeals Processing Desk P.O. Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Road SW Suite 301 Tumwater, WA 98501	**Pollution Control Hearings Board** P.O. Box 40903 Olympia, WA 98504-0903

APPENDIX E

RESPONSES TO COMMENTS

List of Commenters

A. Melissa Malott (written)
Citizens for a Healthy Bay
535 Dock Street, Suite 213
Tacoma, Washington 98402

B. Heather Gibbs (written)
Department of Natural Resources
1111 Washington Street SE
Olympia, Washington 98504

C. Karen Gale (written)
Individual
KarenGale.aloft@gmail.com

D. Peter Schrappen
(oral on 4/19/2016, and written)
Northwest Marine Trade Association
1900 North Northlake Way, Suite 233
Seattle, Washington 98103

E. Bob McChesney (written)
Port of Edmonds
336 Admiral Way
Edmonds, Washington 98020-7214

F. Larry Crockett
(oral on 4/20/2016, and written)
Port of Port Townsend
2602 Washington Street
Port Townsend, Washington 98368-4624

G. Jane Dewell (written)
Port of Seattle
Pier 69 – 2711 Alaskan Way
Seattle, Washington 98111

H. Bruce Wishart (oral on 4/20/2016)
Puget Soundkeeper Alliance
117 25th Avenue SE
Olympia, Washington

I. Chris Wilke and Richard Smith (written)
Puget Soundkeeper Alliance
130 Nickerson Street, Suite 107
Seattle, Washington 98109

J. Gerry O'Keefe
(oral on 4/20/2016, and written)
Washington Public Ports Association
1501 Capitol Way South, Suite 304
Olympia, Washington 98501

The complete comment letters and oral comments are available online at:
https://data.wa.gov/Natural-Resources-Environment/Draft-Boatyard-General-Permit-Public-Comments/gej6-ysnh

Responses to Comments

Permit language is shown below within the black boxed areas. Changes to the draft permit language are shown in underlined blue font for additions or in ~~red strike-through~~ font for deletions. Language from other documents is shown within the red boxed areas.

General

1. Comment – Citizens for a Healthy Bay

Staff has reviewed the updated Boatyard Permit and Fact Sheet. CHB is generally supportive of the permit and fact sheet, and appreciates the effort made by Ecology to provide clarifying language throughout the permit. We would like to stress the importance of making each successive permit more protective of the environment, and would like Ecology to keep this in mind as they conduct permit reviews.

Ecology Response (1)

Ecology acknowledges that the intent of the National Pollutant Discharge Elimination System is to use successive permit cycles to help drive the reduction of pollutant discharges and improvement of environmental protections.

2. Comment – Department of Natural Resources

As joint Stewards with Ecology, the Department of Natural Resources (DNR) appreciates the opportunity to review and comment on draft changes to the Boatyard General Permit. After our review, DNR did not find anything in the updates to the permit that we felt warranted a formal comment.

However, DNR would like Ecology to more diligent in requiring DMR data to be submitted and available through their permitting database.

Ecology Response (2)

Ecology appreciates your review of the draft permit. Ecology recognizes that, during this most recent permit term, tracking DMR submittal rates was not a priority. As required by the U.S. EPA, Ecology is on track to require electronic reporting from all Permittees. Ecology anticipates that electronic reporting will improve the quality and quantity of data available through its permitting database.

3. Comment – Puget Soundkeeper Alliance (page 1)

At the completion of Soundkeeper's last appeal of the BGP, Ecology committed to an increased inspection regime. Soundkeeper is disappointed by the limited collection of records available on PARIS, and what appears to be Ecology's lack of follow through on its oversight commitment. A significant complicating factor of the boatyard compliance equation is the agency's inability and unwillingness to enforce its own permits in a manner that properly incentivizes compliance.

Ecology Response (3)
Limited resources have been an agency-wide problem for several years. Ecology welcomes any suggestions for increasing our available inspection resources.

4. Comment – Puget Soundkeeper Alliance (comment 4)

The draft permit proposes that benchmarks and limits would only apply to discharges of stormwater runoff from "areas with industrial activity" (S2.D) and only requires the permittee to monitor discharges of stormwater runoff from "areas of the facility where industrial activity occurs" (S6.B). Previously, benchmarks and limits applied to all stormwater discharges from the boatyard, and permittees were required to monitor all stormwater discharges from the site. Soundkeeper strongly opposes this reduction in regulated acreage as severely detrimental to Puget Sound water quality.

The proposed change would impermissibly exclude storm water discharges associated with industrial activities from regulatory requirements. Under the federal definition of "storm water discharges associated with industrial activities," 40 C.F.R. § 122.26(b)(14), such discharges include "storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; … storage areas (including tank farms) for raw materials, and intermediate and final products …. For the purposes of this paragraph, material handing activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas." The draft permit excludes any definition of "industrial activity" or "storm water discharge associated with industrial activity" that would inform a permittee of these requirements.

The change purports to "correct the false assumption in the 2011 permit that all stormwater was a potential source of pollutants." Summary of Changes at 3. Given that this is a general permit, and that parking lots at boatyards, where non-professional boat owners are certain to handle or transport materials or wastes, or store such materials in their vehicles, may reasonably be presumed to be "material handling sites" or otherwise within the § 122.26(b)(14) definition, the assumption that all stormwater is a potential source of pollutants is correct and consistent with the federal requirements rather than "false."

The permit language should specify, consistent with § 122.26(b)(14), that the only stormwater at a boatyard that can be excluded from permit requirements is that from office buildings or office building parking lots, where no materials for boatyard work are allowed, that is not mixed with other boatyard stormwater runoff.

The proposed change also increases uncertainty for the regulated community. The proposed language restricts application of permit requirements to "stormwater runoff from areas with industrial activity" but "industrial activity" is not defined in the permit. It is not clear what activities are considered "industrial" for purposes of the BGP, which creates ambiguity in application of discharge limits, benchmarks, and other permit requirements. Ambiguity reduces protection for water quality because it is more difficult for permittees to comply with requirements that are unclear and it is more difficult to enforce compliance with requirements that are ambiguous.

Ecology released a FAQ document when this issue came up in the context of the Industrial Stormwater General Permit. http://www.ecy.wa.gov/programs/Wq/stormwater/industrial/ISGP.FAQ.04072015.pdf Ecology's sound reasoning for extending permit coverage to the entire site for industrial facilities should certainly apply to boatyards.

Soundkeeper urges Ecology to remove reference throughout the permit that suggests that the permit applies only to certain parts of the facility. Ecology must clarify that like industrial facilities, the entire footprint of a boatyard is in fact regulated by the permit.

Ecology Response (4)

Prior versions of the Boatyard General Permit and this draft permit never applied benchmarks and limits "to all stormwater discharges from the boatyard" and never required Permittees "to monitor all stormwater discharges from the site." This draft permit does not reduce the "regulated acreage."

To clarify that the draft permit does not "exclude stormwater discharges associated with industrial activities from regulatory requirements," Ecology has added the definition of "industrial activity" to the permit. This definition is essentially the same as the definition provided for the Industrial Stormwater General Permit, and is provided in Ecology's response to Comment 6.

Although the Boatyard General Permit applies to the entire boatyard facility, including all parking lots, those parking lots are not, in themselves, inherently industrial. Therefore, while Permittees must include parking lots in their self-inspections, Permittees are not necessarily required to monitor stormwater runoff from them. An example of an area of a boatyard facility where monitoring might not be required is one designated for use solely as an employee parking lot. However, if Permittees or third parties conduct boatyard activities in the parking lot of a permitted facility, the Permittee must ensure compliance with all permit requirements in that area, including monitoring of stormwater runoff from that area. Also, if any non-contaminated water mixes with potentially contaminated stormwater runoff (i.e., from an area where industrial activities occur), Ecology considers the entire mixture as potentially contaminated and requiring monitoring as described in the permit.

5. Comment – Puget Soundkeeper Alliance (comment 9)

Soundkeeper questions whether the draft permit includes WQBELs and other provisions adequate to protect sediment quality in compliance with WAC Ch. 173-204. Because of the nature of activities taking place at boatyards, particularly including the mechanical removal of copper-based bottom paint likely to contribute to solid particles in regulated discharges, Soundkeeper believes that BGP discharges are likely to adversely affect sediments. Part IV of WAC Ch. 173-204 provides a process for first identifying and then managing sources of sediment contamination through NPDES permitting. The process is to aid "the established goal … to manage source control activities to reduce and ultimately eliminate adverse effects on biological resources and significant health threats to humans from sediment contamination." WAC 173-204-410(a). Compliance is required of any existing NPDES discharger. WAC 173-204-410(6)(b).

In the sediment source control process's first step, called "screening-level evaluation of the potential for a discharge to cause sediment impacts," which assesses "the potential for a discharge to cause a violation of the applicable sediment quality standards," Ecology's rule requires consideration of "multiple factors" "including but not limited to:"

(a) discharge particulate characteristics;
(b) discharge contaminant concentrations, flow, and loading rate;
(c) sediment chemical concentration and biological effects levels;
(d) receiving water characteristics;
(e) the geomorphology of sediments;
(f) cost mitigating factors such as the available resources of the discharger; and
(g) other factors determined necessary by Ecology.

The discussion of sediment quality criteria at draft fact sheet pp. 20 – 21 is manifestly inadequate to this task and its conclusion, "that controlling the sources of the pollutants in stormwater will cause a reduction of pollutants in the sediments," is not adequate to relieve Ecology of the WAC 173-204-400 requirements to include in the BGP specific, additional controls for sediment protection.

Soundkeeper suggests both that BGP permittees be screened by location and discharge characteristics for the select imposition of additional sediment monitoring requirements, and that a total suspended solids effluent limitation be imposed on permittees, as done by the ISGP.

Ecology Response (5)

The permit prohibits Permittees who conduct activities most likely to generate particles of copper-based bottom paint (e.g., pressure-washing, hull recoating, etc.) from discharging the resulting wastewater to waters of the State. Rather, Permittees must collect, treat as necessary, and discharge that wastewater to a publicly-owned treatment works (POTW). During the third term of the Boatyard General Permit (effective November 2, 2005), after considerable discussion with various boatyards and the Puget Soundkeeper Alliance, Ecology first required the use of vacuum sanders for all antifouling paint removal in the first modification of that permit (effective May 20, 2006). In order to ensure the control of potentially polluting particulates, Ecology has kept that requirement in all later versions of the permit, including the draft of this fifth term.

According to the Fact Sheet for the fourth term of the permit (effective June 1, 2011), the results of stormwater discharge monitoring data for Permittees from January 2006 through September 2008 yielded an average value for total suspended solids (TSS) of 26.4 mg/L, with a standard deviation of 85.6 mg/L. Review of the numeric results of stormwater discharge monitoring data for Permittees from June 2010 through May 2011 yielded an apparently improved average value for TSS of 17.6 mg/L, with a standard deviation of 35.6 mg/L. Ecology has determined that these low concentrations of TSS in stormwater discharges from boatyards do not present a reasonable potential to adversely affect sediment quality, especially as the concentrations appear to have decreased due to better implementation of best management practices by the Permittees over time.

Some Permittees may discharge their stormwater runoff to a waterbody identified as impaired on the 303(d) list of Category 5 waterbody segments due to sediment contamination by copper, lead, or zinc. Ecology is assigning a surrogate water quality discharge limit of 30 mg/L total suspended solids to protect the sediment quality in those locations. This limit is the same as that

assigned by the Industrial Stormwater General Permit to dischargers to Category 5 sediment-impaired waterbody segments. This limit is based in part on the discussion in an Ecology Report to the Legislature (2008, draft).

6. Comment – Bruce Wishart (oral comment, condensed)

What is the definition of "industrial activity?

Ecology Response (6)

The definition of "industrial activity" will be added to the Definitions section in the final permit. It is essentially the same as the definition provided for the Industrial Stormwater General Permit. That definition is:

> *Industrial activity* means any of the activities among (1) The ten categories of industrial activities identified in 40 CFR 122.26 (b) (14) (i to ix; and xi); or (2) Any activities identified by Ecology as significant contributors of pollutants. Industrial activities include, but are not limited to, manufacturing; processing; and raw, intermediate, and finished materials handling and storage areas at an industrial plant.

Permit Section S1
Permit Coverage Required

7. Comment – Puget Soundkeeper Alliance (comment 1)

Soundkeeper supports the proposed change to S1 to include discharges of stormwater runoff to the ground in addition to surface waters. This issue, however, raises an important question: How does this permit distinguish between "discharge to ground" and "infiltration" (S2.D.4)?

Ecology Response (7)

See the definition of Discharge already provided on Page 49 of the Draft Boatyard General Permit. The permit does not address sheet-flow-like infiltration of stormwater. However, in Section S2.D.6 (Discharge Limits, Stormwater Runoff to Waters of the State) the permit does require that discharges of stormwater runoff from industrial areas to the ground be through a designed infiltration structure, such as a basin or trench lined with absorptive media. Ecology expects that all potentially contaminated stormwater be treated prior to discharge to ground.

Permit Section S1.B
Exemption from Coverage

8. Comment – Puget Soundkeeper Alliance (comment 2)

Soundkeeper supports the proposed change to state that the general permit does *not* cover vessel deconstruction activities that take place in the water or on a floating dry docks or barge. It is helpful to clarify that for these situations, the boatyard must obtain either an individual permit

or the vessel deconstruction general permit. Soundkeeper supports this addition because it clarifies the scope of permit coverage and increases certainty, which should lead to improved compliance.

However, the structure of S1.B is misleading. The proposed language falls under the sub-section about Indian Country and exceptions for reservations. The proposed language should not apply only on federal reserved lands or federal trust lands. To clarify, section S1.B should be divided into three numbered subsections: 1) facilities exempted based on the scope of activities conducted; 2) Indian Country; and 3) facilities that require coverage under another permit. Separating these sections would eliminate confusion about exempted facilities.

Ecology Response (8)
Ecology has restructured Section S1.B (Exemption from Coverage) into four separate subsections.

Based upon recent email communications with Region 10 of the U.S. Environmental Protection Agency (EPA), Ecology also modified the exclusion of federal sites from the Washington State requirement for a Boatyard General Permit to correspond with U.S. EPA policy. That revised subsection of the permit now reads:

> 3. Federal Facilities
>
> The following discharges are not covered by this permit:
>
> a. Discharges from activities operated by any department, agency, or instrumentality of the Federal Government of the United States.
>
> b. Discharges from activities (i) Located on federally-owned sites; and (ii) Operated by an entity, such as a private contractor performing industrial activity on behalf of or under the direction of any department, agency, or instrumentality of the Federal Government of the United States.

Permit Sections S1.B and S1.C (new)
Exemption from Coverage, Conditional No Exposure Exemption

9. Comment – Larry Crockett (oral comment, condensed)
Ecology should provide Permittees with the possibility to acquire Conditional Non-Exposure status as in the ISWGP.

10. Comment – Northwest Marine Trade Association (comment 14)
Conditional No Exposure. The Permit would be improved by clarifying how facilities may apply for and receive Conditional "No Exposure" Exemption status. Several boatyards could eliminate discharges associated with boatyard activities as a result of conducting boatyard activities indoors, including pressure washing, or conducting only permit exempt activities outdoors (pursuant to S1.B).

Ecology Response (9 and 10)
Ecology agrees: See the change to Section S1.B (Exemption from Coverage), the addition of Sections S1.C (Conditional "No Exposure" Exemption) and S1.D (Significant Contributors of Pollutants), and the additional definition below.

S1.B. Exemption from Coverage

1. Limited Services

Facilities that provide only the following services ~~or conduct boatyard activities exclusively indoors~~ do not require coverage under this permit:

S1.C. Conditional "No Exposure" Exemption

Facilities that conduct boatyard activities exclusively indoors may qualify for a conditional exemption from coverage under this permit in accordance with 40 CFR Part 122.26 (g). To acquire a Conditional No Exposure Exemption, a facility or Permittee must complete the following steps:

1. Submit a completed Request for a Conditional No Exposure Exemption form to Ecology.

2. Certify that none of the following materials or activities are, or will be in the foreseeable future, exposed to precipitation or stormwater runoff:

   a. Using, storing, or cleaning industrial machinery or equipment, and areas where residuals from using, storing, or cleaning industrial machinery or equipment remain and are exposed to stormwater.

   b. Materials or residuals from spills or leaks on the ground or in stormwater inlets.

   c. Materials or products from past industrial activity.

   d. Material handling equipment (except adequately maintained vehicles).

   e. Materials or products during loading, unloading, or transporting activities.

   f. Materials or products stored outdoors (except final products intended for outside use, e.g., new cars, where exposure to stormwater does not result in the discharge of pollutants).

   g. Materials contained in open, deteriorated, or leaking storage drums, barrels, tanks, and similar containers.

h. Materials or products handled or stored on roads or railways owned or maintained by the discharger.

i. Waste material (except waste in covered, non-leaking containers, e.g., dumpsters).

j. Application or disposal of process wastewater (unless otherwise permitted).

k. Particulate matter or visible deposits of residuals from roof stacks or vents not otherwise regulated, i.e., under an air quality control permit, and evident in the stormwater outflow.

3. Submit to on-site facility inspection(s) by Ecology to verify compliance with all "no exposure" conditions.

4. Receive from Ecology written approval of this exemption. Regardless of whether a facility meets all of the conditions to quality for a Conditional No Exposure Exemption, Ecology may require a facility to obtain coverage under this permit if Ecology determines the facility is a significant contributor of pollutants to waters of the State in accordance with Condition S1.D (Significant Contributors of Pollutants).

5. Facilities that are granted a Conditional No Exposure Exemption must submit a new completed Request for a No Exposure Exemption form to Ecology once every 5 years, and may again undergo inspection by Ecology.

6. If, during the term of this general permit, fees are established under Chapter 173-224 WAC for processing applications for this exemption or for administering this exemption, the Permittee must pay the assessed fees by the dates due.

Ecology will automatically terminate permit coverage when it grants a Conditional No Exposure Exemption to a permitted facility.

If a change occurs at an exempt facility that results in the exposure of boatyard activities or industrial materials to precipitation or stormwater runoff, the facility must immediately apply for and obtain a permit.

S1.D. Significant Contributors of Pollutants

Ecology may require a facility to obtain coverage under this permit if Ecology determines the facility:

1. Is a significant contributor of pollutants to waters of the State, including groundwater;

2. May reasonably be expected to cause a violation of any water quality standard; or

3. Conducts boatyard or other related industrial activity, or produces stormwater runoff with characteristics similar to other boatyards or related industrial activities.

Significant contributor of pollutant(s) means a facility determined by Ecology to be a contributor of a significant amount of pollutant(s) to waters of the State.

Permit Sections S1.B and S3.C
Exemption from Coverage and In-Water Maintenance

11. Comment – Puget Soundkeeper Alliance (comment 3)

The draft permit now states that facilities that provide only *minor* repairs or modifications to the vessel rigging or superstructure do not require coverage under this permit. (S1.B) The draft permit also provides that for facilities that require coverage, *minor* in-water repair, modification, surface preparation, or coating of topside or superstructure is allowed. (S3.C)

Previously, minor repairs or modifications were defined to be repairs or modifications of "25% or less" of the vessel's superstructure and in-water surface preparation or coating was limited to 25% of the topside or superstructure surface.

The change was apparently proposed because permittees had difficulty understanding how to estimate '25% or less" of the vessel's surface. However, the proposed change makes the permit even less precise. The term "minor" is subject to numerous interpretations and actually increases uncertainty about which facilities require permit coverage and which activities can take place in the water. The permit does not define "minor" and gives permittees no way to evaluate whether their facility requires coverage or an activity can be conducted in the water. In addition to creating uncertainty for permittees, the imprecise language will inhibit enforcement of the permit when needed to protect water quality.

Soundkeeper proposes that Ecology include in the permit a clear definition of the word "minor", and a list of activities that are considered "minor" to add clarity and certainty to the regulated community.

Ecology Response (11)

Ecology's sense of the meaning of the word minor regarding "repairs or modifications to the vessel rigging or superstructure" is the same as that for "minor engine repair or maintenance within the engine space without vessel haul-out," which the commenter did not question. Ecology prefers to leave the precise application of the word "minor" to its Inspectors, who will take into account the actual context of the Permittee's ongoing operations, including the location of the work, types and amounts of potential pollutants, training and experience of the worker(s), past practices, and personal observations of the ongoing work. However, since changing "25%" to "minor" would have no practical difference, Ecology will keep the 25% language from the current permit.

Permit Section S1.C
Modification of Permit Coverage

12. Comment – Port of Port Townsend (comment 1)

As I stated on the 20th, the wording of Special Condition S1 C we feel is not clear. We have a very large facility with numerous private businesses conducting marine-related activity. As a Public Port, we essentially are the landlord leasing property for private businesses to build structures and other infrastructure. All such work is within the capture footprint of our storm water system. New buildings, expansion of existing buildings, paving of existing roads, utility improvements happen all the time. What is the intent of the "60 day notice"? Does the business have to wait for an approval from DOE before moving forward with an otherwise permitted project? If so, there will be economic impacts that could be quite severe for our tenants. I would be happy to discuss this further at your pleasure.

13. Comment – Larry Crockett (oral comment, condensed)

What does "significant" mean? Must a Permittee incorporate Ecology's 60-day advance notice into its schedule of a significant process change?

Ecology Response (12 and 13)

The definition of "significant process change" is already provided on Page 52 of the Draft Boatyard General Permit.

While Ecology will endeavor to review and act on a Permittee's request for permit modification in less than 60 days of its receipt of the request, a good practice for the Permittee would be to build the entire 60-day period into its implementation plan for significant process changes or any facility expansions, production increases, or other planned changes that may result in noncompliance.

Ecology has renumbered Section S1.C (Modification of Permit Coverage) in the draft permit to Section S1.E to account for its responses to Comment 10.

Permit Section S2
Discharge Limits

14. Comment – Northwest Marine Trade Association (comment 4, bullet 2)

- *The phrase "arithmetic average" is new, and is defined in small font in S2.A.1(a) as the average of daily sample results. This description makes it unclear whether Ecology intends Permittees to average both daily monthly samples using this method.*

15. Comment – Northwest Marine Trade Association (comment 9)

Sample averaging. Ecology should replace the maximum daily benchmark with a monthly result, and therein allow Permittees to calculate a monthly sample average concentration to compare to the benchmark if multiple samples are collected during the month (using daily averages of individual grab sample results if Permittees collect more than one sample during a 24-hour period). This revision is consistent with sampling in the ISGP.

Ecology Response (14 and 15)

Ecology will include the definition of "arithmetic average" in the Definitions section of the final permit, as shown below:

> *Arithmetic average* means the sum of a list of numbers divided by the number of numbers in the list.

The permit identifies two different averages. The first is the daily discharge, which is the average of all measurements of a pollutant within a given day. The second is the seasonal average, which is the average of all daily discharges of a pollutant within the entire wet season (October through May).

Changing the benchmarks from maximum daily values to average monthly values would necessitate a recalculation and consequent numerical decrease of the benchmark values to remain equivalent to current permit requirements. Since Ecology has assumed that grab samples are representative of the sampled stormwater, collecting multiple samples within a single month is not necessary, but is allowed. If a Permittee monitors stormwater runoff on multiple days within a monitoring month, the Permittee must report a daily discharge result for each day monitored.

16. Comment – Puget Soundkeeper Alliance (comment 5)

This provision of the draft permit enables a permittee to sample its discharge of treated pressure-wash wastewater or stormwater to non-delegated POTWs either via grab or composite sample. Previously, only grab samples were allowed. A composite sample is a series of water samples taken over a given period of time. Generally composite samples are more accurate than grab samples, so this change is potentially beneficial.

However, the permit does not define a time period or instructions for compiling the results for the composite sample. Without guidelines about how to conduct and read the composite sample, permittees are free to manipulate the sampling process to achieve a desired result. For consistency and accuracy, the Boatyard General Permit must include instructions or guidelines and Ecology should consider requiring composite samples instead of giving permittees the option of using grab or composite samples. The monitoring plan portion of the SWPPP should require a detailed description of the procedures for composite sampling.

Ecology Response (16)

The current permit allows Permittees to collect grab or composite samples for stormwater monitoring, but specifies only "Grab" for the method to collect samples of discharges of pressure-wash wastewater. Allowing the Permittee to collect composite samples of pressure-wash wastewater discharges does not alter the permittee's freedom "to manipulate the sampling

process to achieve a desired result." The draft permit already specifies in Section S6 (Monitoring Requirements) that monitoring samples "must represent the volume and nature of the monitored discharge within the monthly monitoring period." Beyond complying with that requirement, Permittees may employ various Ecology-approved procedures for collecting either grab or composite samples. Available guidance concerning the collection methods for composite samples includes the following:

- "Stormwater Sampling Manual, A guide for the Industrial Stormwater General Permit." Ecology Publication number 15-03-044, December 2015. Available at: https://fortress.wa.gov/ecy/publications/documents/1503044.pdf.

- "Standard Operating Procedures for Automatic Sampling for Stormwater Monitoring." September 16, 2009. Available at: http://www.ecy.wa.gov/programs/eap/qa/Agency/ECY_WQ_SOP_AutomatedSampling_v1_0ECY002.pdf

- "Guidance for Evaluating Emerging Stormwater Treatment Technologies, Technology Assessment Protocol – Ecology (TAPE)," Department of Ecology, Lacey, January 2008.

Permit Section S2.D
Boatyards Discharging Stormwater Runoff to Waters of the State

17. Comment – Port of Edmonds (comment 1)

The Port remains concerned that the daily maximum and seasonal average benchmark values for zinc in the draft Boatyard General Permit are still lower than the zinc benchmark in the Industrial Stormwater General Permit. However, the Port appreciates that Ecology has not lowered the stormwater benchmark values for copper and zinc in the new draft Boatyard General Permit below the values in the current permit, because that consistency reduces the burden of adjusting to new permit conditions.

Ecology Response (17)

Ecology determined benchmarks for copper and zinc from the results of best available technology reviews of discharges from two different populations of Permittees (industrial facilities and boatyards) and from receiving water data and monitoring data, respectively, collected within two different time periods (prior to 2008 and from 2007 through 2010, respectively). Thus, it is not surprising that the benchmarks differ between the Boatyard General Permit and the Industrial Stormwater General Permit (ISGP). Details of the procedures used to determine the ISGP benchmarks may be found in the Fact Sheet, dated June 3, 2009, for the 2010 ISGP.

Permit Section S2.D.2
Discharge Limits, Calculating the Arithmetic Average

18. Comment – Northwest Marine Trade Association (comment 4, bullets 3 and 4, and text)

NMTA suggests Ecology eliminate this highly complex requirement and replace it with an Excel spreadsheet Permittees can use to perform the necessary calculations. Alternately, Ecology should modify its electronic reporting system to do this math.

- *S2.D.2.c asks Permittees to consider if "the same parameter was detected in another sample from the same monitoring point for the reporting period." Ecology does not explain if the reporting period is a reference to the samples taken that day, or samples taken during the months that comprise a monitoring season.*
- *Terms like "quantitative results" are not commonly understood, and imply that some lab results are not quantitative.*

NMTA further suggests that Ecology not regard results reported at less than the detection limit as one-half the reported detection limit value. The detection limit is a value at which it can be said with 99% confidence that the substance is present in the sample at an amount greater than zero.[13] Below the detection limit the very presence of a substance is speculative, particularly if the facility's data set does not include recent measurements above the detection limit value. Only when a value is above the detection limit can it be said with reasonable certainty that the pollutant parameter is present in a concentration greater than zero.

[13] 40 C.F.R. §136.2(f).

19. Comment – Port of Seattle (comment 1)

The method to calculate the arithmetic average identified above is to use one-half of the reported detection limit value for results identified in the above two situations. This will overestimate the actual average value for sample parameters without a confirmed detection, which could result in a Permittee unjustifiably triggering a Level Two or Level Three corrective action. In addition, under 2c, detection limits for a sample should not be assigned on the basis of the detection limit for a different sample, which may have no bearing on the detection limit for the sample in question. The Port recommends that the Permit instead adopt a condition similar to that in the 2015 EPA Multi-Sector General Permit:

"For averaging purposes, use a value of zero for any individual sample parameter, which is determined to be less than the method detection limit. For sample values that fall between the method detection level and the quantitation limit (i.e., a confirmed detection but below the level that can be reliably quantified), use a value halfway between zero and the quantitation limit." EPA Multi-Sector General Permit, App. B, ¶ 12.D.3.

20. Comment – Puget Soundkeeper Alliance (comment 6)

The draft permit provides values to use to calculate the "arithmetic average". This section is very unclear. For consistency and accuracy, permittees need better instructions for calculating the arithmetic average. Soundkeeper urges Ecology to revise this section to include clear instructions to increase clarity and certainty for the regulated community.

Ecology Response (18, 19, and 20)
The reporting period over which an average is determined may vary between either a day or a season. The resulting average of multiple samples collected within one day is the daily discharge value. The resulting average of all of the daily discharges within a monitoring season (i.e., October through May) is the seasonal average.

The term "quantitative result" has been changed to "numerical result." Ecology will add the definition for "arithmetic average" to the permit as shown in Ecology's response to Comments 14 and 15.

While the detection limit is the concentration at which we have 99% confidence that the analyte is present at a concentration greater than zero, a value slightly less than the detection limit is unlikely to have a 0% probability of being present at a concentration greater than zero. Ecology has chosen for the purpose of simplifying calculations with censored results (i.e., "not detected") to use values midway between zero and the detection limit. The practical difference between employing half the detection limit or zero to determine an average is almost nil, especially since the detection limits are so much less than the benchmarks.

The following table may help Permittees understand how to calculate the arithmetic average:

Permit Condition	Permit Condition S2.D.2			
	a	b	c-1	c-2
Actual or Presumed Detection Limit for Sample 3	known or unknown	0.4	unknown	unknown
Sample 1	3.5	3.5	3.5	3.5
Sample 2	2.7	2.7	<0.4	2.7
Sample 3	0.9	<0.4	ND	ND
Calculation Method	$\frac{(3.5+2.7+0.9)}{3}$	$\frac{(3.5+2.7+(0.5*0.4))}{3}$	$\frac{(3.5+(0.5*0.4)+(0.5*0.4))}{3}$	$\frac{(3.5+2.7+0)}{3}$
Daily Discharge or Seasonal Average	2.4	2.1	1.3	2.1

a	For all numerical results reported at levels equal to or greater than the specified detection limit value: ***The reported numeric value.***
b	For results reported at less than the detection limit numerically (e.g., <0.01 mg/L or "non detected" with a specified detection limit value): ***One-half the reported detection limit value.***
For results reported as less than the detection limit non-numerically (e.g., ND or "not detected") and without a specified detection limit value:	
c-1	If the same parameter was reported numerically for another sample from the same monitoring point for the reporting period: ***One-half the detection limit value reported for the other sample.***
c-2	If the same parameter was not reported numerically for another sample from the same monitoring point for the reporting period: ***Zero.***

Permit Section S2.D.3
Discharge Limits, Stormwater Runoff to Lake Union or the Lake Washington Ship Canal

21. Comment – Northwest Marine Trade Association (comment 2)

NMTA Comment. Ecology should re-perform its reasonable potential determination and, if it shows any need for lead limit, administratively modify the relevant Permits under General Condition 10. The current reasonable potential determination (Table 12)[9] relies on samples taken at boatyards that are not located in Lake Union or along the Lake Washington Ship Canal. Only facilities located on Lake Union or the Ship Canal west of the Fremont Bridge discharge to a waterbody 303(d)-listed for lead impairment.

Data collected from facilities discharging to other waterbodies, some of which may not have treatment systems installed, is not representative. According to Ecology, lead in treated effluent from boatyards is "typically at or below a measureable concentration . . . ."[10] Only if Ecology

determines that one or more of the boatyards subject to the lead limit has a reasonable potential for impacting sediment quality based on the specific facility's monitoring data should Ecology modify that facility's permit to include a lead monitoring obligation.
Ecology should also revise its Fact Sheet to remove statements describing the lead limit as a benchmark. The Fact Sheet indicates, for example, "that all the seasonal median values for total copper, lead, and zinc were less than their respective benchmarks."[11] The same paragraph states: "None of the seasonal average lead concentrations exceeded the lead benchmark." Elsewhere Ecology suggests the lead limit was a product of a dilution factor,[12] which is inaccurate.

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[9] Ecology, Draft Permit Fact Sheet for Boatyard General Permit (2016) at 20.

[10] Ecology, Draft Permit Fact Sheet for Boatyard General Permit (2016) at 17. See also Washington State Department of Ecology, Puget Sound Boatyards – Zinc, Copper, Lead and Hardness Concentrations in Receiving Waters. Ecology Publication No. 09-03-051 (2009) at 8.

[11] Ecology, Draft Permit Fact Sheet for Boatyard General Permit (2016) at 13 (first full sentence).

[12] Ecology, Draft Permit Fact Sheet for Boatyard General Permit (2016) at 18 (describing water quality-based effluent limits).

22. Comment – Puget Soundkeeper Alliance (comment 7)

The draft permit reduces the Maximum Daily Limit for Lead in runoff going to Lake Union or the Lake Washington Ship Canal from 185 to 78 µg/L.

Soundkeeper strongly supports the proposed stricter limit as more protective of water quality in these waterways.

Ecology Response (21 and 22)

Of the approximately 68 Boatyard Permittees, about 12 of them lie adjacent to freshwater, and about half of those are located beside Lake Union or the Lake Washington Ship Canal. Unfortunately, only one of the Permittees on Lake Union or the Lake Washington Ship Canal provided monitoring data for lead, consisting of 19 numerical results. Ecology believes that this very limited data set would not be representative of all of the boatyards that discharge stormwater runoff to Lake Union or the Lake Washington Ship Canal. Since the variability among the discharges of stormwater runoff from boatyards may be large irrespective of their locations, Ecology decided that for this general permit lumping together the larger number of boatyards that discharge to fresh water improved the reliability of the reasonable potential calculations.

Ecology has corrected the two misidentifications of lead limits as benchmarks in the Fact Sheet.

Table 12 in the Fact Sheet shows that the lead limit is a product of a dilution factor with a value of 1.0. Ecology has modified the confusing language on Page 18 of the Draft Fact Sheet by deleting the specific value of the dilution factor (5) which was applicable for only copper and zinc.

Permit Sections S2.D.4 and S2.D.5
Benchmarks for Stormwater Discharge to Fresh and Marine Waters

23. Comment – Puget Soundkeeper Alliance (comment 8)

Soundkeeper objects to the benchmark figures for copper and zinc in these sections. The key operative water quality based effluent limits (WQBELs) in this permit are the benchmarks combined with the adaptive response requirements. Under 40 C.F.R. § 122.44(d)(vii), WQBELs must ensure that the level of water quality to be achieved by limits on point sources is derived from and complies with all applicable water quality standards. The copper (50 ug/L seasonal average, 147 ug/L daily maximum) and zinc (85 ug/L seasonal average, 90 daily maximum) do not so ensure because they impermissibly apply a dilution factor of 5 and a water effects ratio. Under WAC Ch. 173-201A, these tools are not available in the way used to derive these figures. A mixing zone must be authorized to use a dilution factor and none is or can be authorized here. A water effects ratio can only be calculated on a site-specific basis using receiving water-specific information, not for a generalized assumption as done here.

There is also no basis to allow such high copper benchmarks in comparison to those implemented in the Industrial Stormwater General Permit (ISGP). It makes no sense to say that the ISGP copper benchmark of 14 ug/L is necessary to protect western Washington receiving waters on the basis of the scientific analysis performed by Herrera for Ecology but that far higher copper benchmarks are adequately protective for BGP discharges to these same exact waters. These are WQBELs and technological considerations are entirely inappropriate in setting them.

Soundkeeper urges Ecology include copper and zinc benchmarks in the BGP that are comparable to those in the ISGP because more stringent benchmarks are necessary to protect water quality.

Ecology Response (23)

A Permittee operating at AKART is eligible for a dilution factor. A Permittee not operating at AKART is not in compliance with this permit. Ecology's responses to Comment 17 and Comments 40 through 46 explain in detail the source and use of the dilution factor and the derivation of benchmarks. Ecology believes that its use of a dilution factor of 5.0, which was originally found adequate for industrial stormwater dischargers, who frequently discharge into small streams and ditches, is relatively conservative in light of the much larger waterbodies to which boatyards typically discharge stormwater runoff.

Ecology did not employ a water effects ratio (or, equivalently, used a value of 1.0) when developing copper or zinc benchmarks or the lead limit. Ecology has modified the confusing language in the fourth paragraph on Page 18 of the Draft Fact Sheet by deleting reference to a "receiving water effect."

Permit Sections S2.D.4, S2.D.5, and S2.D.6
Footnotes in Three Tables of Benchmarks

24. Comment – Northwest Marine Trade Association (comment 4, bullet 1)

- *In S2.D.4 the Permit states: "Averaging does not apply to pH which must be reported as the highest and lowest values if more than one sample is taken in a day." This incorrectly suggests that pH is a monthly sampling parameter.*

Ecology Response (24)
Ecology has removed this sentence from all three tables where it appeared in Sections S2.D.4, S2.D.5, and S2.D.6.

Permit Section S2.D.7
Discharge Limits, Waterbodies with TMDLs

25. Comment – Puget Soundkeeper Alliance (comment 10)

S2.D.7 requires dischargers to comply with "wasteload allocations developed from a TMDL." All wasteload allocations must be included in a TMDL, so the meaning of "wasteload allocations developed from a TMDL" is unclear. 40 C.F.R. § 130.2(i).

Furthermore, it is unclear that this provision prohibits the discharge of a pollutant from a discharger that is not provided with a wasteload allocation in a TMDL. In such a circumstance, the wasteload allocation can only be properly considered to be zero, so a zero discharge effluent limitation on the pollutant of concern must be incorporated into the permit. See 40 C.F.R. § 122.4(i) (specifically prohibiting NPDES permit issuance to a "new source" or "new discharger" that would contribute to a violation of water quality standards unless a TMDL is in place with "sufficient remaining pollutant load allocations to allow for the [new] discharge," along with appropriate compliance schedules for existing dischargers); 40 C.F.R. § 122.44(d)(1)(vii)(b).

Soundkeeper urges Ecology to revise this provision so that it is more clear and complies with applicable laws. Specifically, the provision must outright prohibit any new discharges of pollutants that are not provided in a TMDL wasteload allocation.

Permit Section S2.D.8
Discharge Limits, Impaired Waterbodies without TMDLs)

26. Comment – Puget Soundkeeper Alliance (comment 11)

S2.D.8 is an improper effluent limitation. The purpose of an NPDES permit is to convert applicable requirements, such as the prohibition on discharges described via narrative in S2.D.8, into specific, implementable terms for the authorized discharge. It is not adequate for a permit to merely specify that a permittee "must not discharge a listed pollutant at a concentration or volume that will cause or contribute to a violation of the applicable water quality standard in the receiving water." WAC 173-220-130(3)(a).

S2.D.8. should impose an effluent limitation of zero on the discharges it addresses, along with appropriate monitoring requirements. As written, the effluent limitation is unenforceable as a practical matter, unless additional monitoring requirements, including receiving water monitoring requirements, and specifics are imposed.

Soundkeeper urges Ecology to revise this provision to outright prohibit new discharges of listed pollutants to impaired water bodies. Soundkeeper also urges Ecology to revise this provision to require additional effluent monitoring requirements and receiving water monitoring requirements.

Ecology Response (25 and 26)
The U.S. EPA definition of TMDL (40 CFR Part 130.2(i)) is correct, but it implies that wasteload allocations precede TMDL determination. In actuality, the early part of the TMDL process ends with the determination of the maximum amount of pollutant that may continue to be discharged to the impaired waterbody such that the waterbody will meet water quality standards. In the subsequent later part of the TMDL process, the maximum allowed amount of pollutant (i.e., the TMDL) is portioned out and assigned to the existing (and potential future) dischargers via source-specific load and wasteload allocations (WLAs). The phrasing of Section S2.D.7 is correct.

Ecology expects that neither a TMDL nor WLAs applicable to potential boatyard pollutants will be issued prior to the planned 2016 reissuance of Boatyard General Permit coverages to current Permittees. Therefore, compliance with existing TMDLs or WLAs is not an issue for the currently-covered Permittees. For new applicants for coverage by the Boatyard General Permit, Ecology must consider the status of the proposed receiving waterbodies (e.g., whether 303(d)-listed or not) and the existence and relevance of any TMDLs or WLAs for those receiving waterbodies. At the time Ecology issues coverage to such a new applicant, Ecology must identify TMDL- or WLA-based site-specific discharge limits applicable to that Permittee.

Permit Section S3.E
Mandatory BMPs, Solids Management

27. Comment – Northwest Marine Trade Association (comment 7)

The proposed revision implies that boatyards must ask an Ecology staff person for approval to begin hull recoating work on any vessel within some distance from a waterbody. If intended to be understood this way, the revision is unnecessary and burdensome.
Ecology already requires Permittees to prevent dust, debris, and paint from being exposed to the weather and surface water. Permittees have accordingly constructed site improvements based on the former language of S3.E. and control debris. Ecology inspectors visit the state's handful of boatyards regularly. The inspectors are trained to evaluate the facility's infrastructure and the potential for hull recoating work to affect water quality. Inspectors can and do issue administrative orders if the facility's infrastructure requires further improvements. Requiring boatyards to call inspectors every day will not add helpful information.

If Ecology proceeds with this revision, Ecology should explain how to measure a "boat length", how to notify Ecology, what information must be provided with notice, the amount of advanced notice, and how to determine the high water level.

28. Comment – Peter Schrappen (oral comment, condensed)

Regarding S3.E, explain that "case-by-case" approval by Ecology could mean a one-time approval that the marine railway infrastructure is adequate to control dust. Alternately, the boatyard should obtain either an individual permit or a site-specific modification to the general permit.

29. Comment – Port of Seattle (comment 2)

This requirement creates a vague approval requirement without any timeframe or direction on how to proceed with obtaining the approval from Ecology. The requirement should be modified to clarify Ecology's response timeframe and the criteria for granting approval. The Port suggests that approval be granted on the basis of the existing Permit requirement to contain dust, debris, and paint and that such approval be deemed granted if Ecology does not respond within 30 days.

30. Comment – Puget Soundkeeper Alliance (comment 12)

The draft permit purports to invite boatyards to seek prior approval from Ecology to conduct hull recoating work for boats positioned less than one boat length from the high water level (S3.E). Previously, the permit prohibited hull recoating on a marine railway unless the boat was at least one boat length from the high water level. The new proposed language is both unnecessary and dangerously misleading.

Permittees are free to apply for an individual permit wherein Ecology can establish specific requirements on a case-by-case basis where warranted for unique site-specific circumstances. General permits are intended to cover the situations where Ecology is not establishing case-specific requirements. It is unnecessary to note in the general permit that Ecology can approve hull recoating in some cases.

The proposed language introduces a dangerous level of confusion to a provision that was previously clear. To protect water quality, the BGP simply must prohibit hull recoating on a marine railway within one boat length of the high water level. The new language invites confusion to the detriment of water quality.

Soundkeeper urges Ecology to revert to the previous language in the current permit for this provision.

Ecology Response (27, 28, 29, and 30)

Ecology believes that environmental protection is improved if boatyard operations occur farther from the water's edge rather than closer to the water. Also, whether close to or far from the water, boatyard workers who are careful to contain dust, debris, and paint and prevent their release to the environment ensure greater protection of the environment than workers who are not careful. Ecology has improved the language of the first paragraph of Section S3.E (Solids Management) as shown below.

> The Permittee must control and collect all particles, oils, grits, dusts, flakes, chips, drips, sediments, debris, and other solids from work, service, and storage areas of the

boatyard to prevent their release into the environment and entry into waters of the State. When solids-generating activity is occurring, the minimum collection frequency is once per day and prior to tidal inundation. ~~when solids-generating activity is occurring~~. The Permittee must avoid wetting the solids ~~keep solids as dry as possible~~ during collection and must not wash solids into any surface water or into a stormwater collection system. Hull recoating work ~~may be~~ conducted on a marine railway should occur only if the boat is positioned at least one boat length from the high water level. In any case, the Permittee must ensure that all debris from working on the boat while it is on the marine railway structure is contained by or at the structure and may not escape to the environment. ~~If the boat is to be positioned less than one boat length from the high water level, the Permittee must obtain prior approval from Ecology on a case-by-case basis before beginning the hull recoating work.~~

Permit Section S3.G
Mandatory BMPs, Oils and Bilge Water Management

31. Comment – Puget Soundkeeper Alliance (comment 13)

S3.G. is being revised to require the use of absorbent pads to prevent discharge of oils to waters of state prior to pumping out of bilge. Previously, use of absorbent pads was only required to prevent accidental discharge of oils. Soundkeeper supports the revision as the permit should certainly prevent all discharges of oils – whether accidental or purposeful!

Ecology Response (31)
Comment noted.

Permit Section S3.J
Mandatory BMPs, Wash Pad Decontamination

32. Comment – Bruce Wishart (oral comment, condensed)

Ecology should not allow wash pads to be located below the high tide line.

33. Comment – Puget Soundkeeper Alliance (comment 15)

Proposed revisions to S3.J provide that a permittee must its clean wash pad sump of all debris and other solids before the next high tide that would inundate any part of the wash pad or sump. This language is extremely problematic.

As Ecology must know, the wash pad is the most contaminated area in a boatyard. Permittees must be prohibited from pressure washing boats below the high tide line under any circumstances. There must never be a situation where a wash pad or sump can be inundated with surface water at a high tide. All runoff from the wash pad (process wastewater) absolutely must go to the sanitary sewer. If a facility's wash pad is located below the ordinary high water mark, it must be relocated further upland. Less stringent requirements in the BGP are impermissible as

they fail to implement AKART or ensure that discharges do not cause or contribute to violations of water quality standards (RCW 90.48).

Soundkeeper proposes that language be added to clarify that all wash pads must be located above the ordinary high water mark, and must drain inward to a central collection point for conveyance to pretreatment and sanitary sewer. Soundkeeper also urges Ecology to include wash pad sizing requirements, based on the size of the boats the facility can accommodate to mitigate overspray, and to ensure that all wash water and solid debris from pressure washing is collected in the wash pad.

Ecology Response (32 and 33)

Several currently-permitted boatyards have wash pads located at least partially below the high tide line. Relocating such wash pads to above the high tide line is a good idea if possible, but is not necessary to meet the requirement of AKART. Ecology believes that implementation of the Wash Pad Decontamination BMP (Section S3.J) as written below is sufficient to prevent boatyard wash pad contamination from escaping to the nearby surface water. Therefore, Ecology will not require at this time that boatyards relocate their wash pads to above the high tide line.

> Prior to actively pumping or passively discharging any stormwater from the pressure-wash pad to waters of the State, the Permittee must clean the pad of all debris, paint waste, sludge, and other solids. The Permittee must then pressure wash the entire pad into the collection sump and clean the pad and sump of all debris, wastewater, and other solids before the next high tide that would inundate any part of the wash pad or sump. No Permittee may construct a new wash pad in any area of the facility subject to inundation due to tides.

Permit Section S3.L
Oversight of Do-It-Yourselfers and Independent Contractors

34. Comment – Karen Gale (comment 1)

Gentlemen, I remain concerned by the conversations at Port public meetings when officials continue to express the certainty that the do-it-yourself yard must be eliminated, and imply that it is the unreasonable expectations of the DOE that makes this so.

I doubt that DOE has any such desire, however I will share the following to eliminate any possibility of omission.

Do-it -yourself is an important part of the Port of Port Townsend's appeal, especially to owners of wooden boats, whose extensive haul-outs can become very expensive if they cannot perform the work themselves, often a labor of love.

Interestingly, PoPT's website claims that PoPT operates the only diy boatyard in Washington. However, there are at least two other public Ports (Everett and Edmonds) that are environmentally compliant, and still allow do-it-yourself work. Having just visited the Port of Ilwaco, I'm not convinced that they are absolutely compliant, but obvious efforts are being made, and the Port Yard patrons are well versed on the BMPs.

If Port Townsend loses our do-it-yourselfers to these other Ports, we will lose a lot of the "accessory" income that accompanies visiting, and local, boat owners/workers while they are on the hard. This is a large economic driver in our region.

The Port of Port Townsend needs to look at ways the other Ports are accomplishing compliance. There are many strategies that have not been tried. Even a contest could be held to encourage development of innovative means for pollutant containment at the sources of boat refinish and repair work.

Further, installation of motion activated cameras to monitor "off hour" activities may be warranted, to enable enforcement of compliance to the BMPs at all times in all segments of the Yard, commercial and do-it-yourself. Conversations with workers in the Yard indicate that with few exceptions , do-it-yourselfers are no more guilty of infractions than the commercial workers. Lack of enforcement of the BMPs by the Yard manager is cited as the major challenge to our permit compliance, from work in the Yard.

If the Executive Director and commissioners choose not to enact the remedies that would allow our boatyards to continue in their traditional manner, they need to say so, not blame DOE for "forcing them" to close the Yard to do-it-yourselfers.

I remain grateful that your agency is making progress in reducing pollutants in our waters of the State.

35. Comment – Northwest Marine Trade Association (comment 5)

Under existing Special Condition S3, boatyards are required to provide copies of facility BMPs (mandatory and otherwise) to boat owners and contractors as well as post the BMPs within work areas. The Permit also already requires Permittees to implement AKART (S4), prevent non-stormwater discharges (S5), meet benchmarks (S7), inspect for, prevent and report illicit discharges (S6.D), and manage solids in upland areas and in-water (S3).

If Ecology's intent is to remind Permittees that they can require third parties to adhere to facility BMPs, we encourage that to be clearly stated. Boatyards should use contracts with do-it-yourselfers and contractors to specify required practices and allocate risks associated with providing boatyard access.

In its current form, however, S3.L is confusing. It is unclear whether the sentences modify one another. It is further unclear whether "signage and education" and "denial of access" demonstrate exercise of control and, if not, how the standard of control is met. Also, S3.L could be understood to mandate denial of access without explaining when that is appropriate or required. Public boatyards may have limitations on their ability to deny access to do-it-yourselfers and contractors.

S3.L could also be understood to imply that boatyards who implement the "signage and education, denial of access or some other means" are protected from the consequences of providing access. Also, the reference to "some other means" leaves unclear what exactly is required to demonstrate compliance with the standard of "control." NMTA recommends Ecology clarify or remove S3.L.

36. Comment – Port of Port Townsend (comment 2)

Under S3 Mandatory Best Management Practices, subsection L. Oversight of Do-It-Yourselfers (DIY) and Independent Contractors, is another section that gives us pause. There is a legal risk associated with the proposed language. We have already implemented very strong controls for this type of work. However we simply cannot afford the staff to be present every moment of the day, including weekends. We are concerned that given the pressure of third party lawsuits we may eventually be forced to deny this work. Our small community would suffer from a great loss of economic vitality. Our yard supports over 450 direct marine-related jobs, many of which are independent contractors. Our DIY directly purchase supplies, materials, eat in the local restaurants, et cetera, all of which provide for a robust local economy.

I have attached a few sections of our rules and regulations that govern this area of work. There is more, but this should suffice to show how we have been proactive in addressing DIY and independent contractors. These measures include fees (fines) and eviction if needed. We are looking at additional mechanisms as well. However we are concerned that the language currently proposed would lead to ending this type of activity. Again, we would be happy to discuss this further and perhaps reach alternative language that still gets the job done.

37. Comment – Larry Crockett, Bruce Wishart, and Gerry O'Keefe (oral comments, condensed)

It is not possible for boatyards to monitor DIYs 24/7. Ecology should provide practical methods for DIYs to protect water quality. The second sentence is problematic because the words "or some other means" seem to indicate that Permittees must exert extreme effort to control the activities of others. One commenter requested more prescriptive language.

38. Comment – Puget Soundkeeper Alliance (comment 14(a))

S3.L is being revised to require the permittee to ensure that all individuals who conduct boatyard activities at its facility, whether employed by the boatyard or not, implement all of the mandatory best management practices (BMPs) described in Condition S3 and requires the permittee to exercise control over all potential sources of pollutants at its facility.

Soundkeeper is in strong support of this revision, but urges Ecology to revise the language to add needed clarity. All activities at the permitted site must comply with permit requirements, whether or not they are conducted by boatyard employees. The proposed change removes loop hole and brings all activities at a facility under permit coverage and provides needed clarity to the regulated community on this issue.

39. Comment – Washington Public Ports Association (comment 1)

The above language in the permit establishes an automatic violation if a third party fails to use all mandatory Best Management Practices (BMPs) is unnecessarily rigid. It will bring third party use of boatyard facilities to an end in Washington. It may well cause water pollution that would not occur under the current permit as third parties move their work to more vulnerable, less accountable locations.

The legal risk created by the proposed draft permit will immediately result in the loss of access to boatyards in Washington by third parties. As a practical matter, boatyard operators cannot monitor third parties at all times. The risk of an unintentional failure to "exercise control" will force them to deny access to avoid legal liability under the Clean Water Act.

Ports request that Ecology consider alternative provisions designed to do 2 things: 1) ensure that third parties explicitly agree to implement mandatory BMPs as a condition of their use of a boatyard facility; and, 2) require permittees to evict third parties should they fail to comply with the first condition. The alternative approach establishes a clear pathway to compliance and ensures decisive action should a third party fail in its responsibilities. WPPA believes this alternative finds a middle ground that provides reasonable protection of the state's waters while allowing third party access to boatyard facilities.

Ecology Response (34, 35, 36, 37, 38, and 39)

The actions identified in that second sentence of Section S3.L are examples, and not requirements. Ecology prefers that boatyards obtain written agreements with do-it-yourselfers and independent contractors to ensure that those visitors control all their potential sources of pollutants. Even though RCW 90.48 clearly states that the individual who pollutes is, himself, responsible and liable for his actions, the Permittee is still responsible for the discharges from its facility. A suggestion to impress do-it-yourselfers and independent contractors of their responsibilities is that boatyards insert into their contracts with them that they must employ all of the mandatory BMPs as appropriate and that they may not conduct specified potentially-polluting activities.

Ecology has added the language shown below to the end of the BMP described in Section S3.L (Oversight of Do-It-Yourselfers and Independent Contractors). This new verbiage explains how the Permittee may document its own compliance with the permit regarding oversight of do-it-yourselfers and independent contractors.

Do-it-yourselfers and independent contractors who fail to implement all the required or appropriate BMPs must be prohibited from working at the boatyard. The Permittee must document its compliance with this BMP by:

1. Describing in the SWPPP the Permittee's procedures for communicating the required practices to non-boatyard individuals;

2. Describing in the SWPPP the Permittee's procedures for providing oversight of non-boatyard individuals, e.g., by conducting regularly scheduled inspections of their work area(s) and activities;

3. Maintaining written agreements with those non-boatyard individuals that they will implement all of the mandatory BMPs; and

4. Describing in the SWPPP the process for excluding repeat offenders from its facilities.

Permit Section S4
Compliance with Water Quality Standards

40. Comment – Peter Schrappen (oral); Northwest Marine Trade Association (comment 1)

NMTA Comment. NMTA strongly encourages Ecology to leave unchanged the dilution factor of 20 in the current Permit. The last Permit writer, Gary Bailey, determined that for boatyards a dilution factor of up to 20 is "easily achieved in minimal distance."[1] Mr. Bailey also determined that "the mean of acute dilution factors from individual permits" was 30.[2] Mr. Bailey further determined that the "minimal dilution allowance" provided to boatyards would result in meeting water quality criteria.[3] These conclusions emerged from a lengthy permit development process, including:

- *Four iterations of Permit development, public comment, and internal review.*
- *A pilot study of stormwater treatment systems.*
- *The Pollution Control Hearings Board's 2007 decision (PCHB Nos. 05-150, 05-151, 06-034, and 06-040) and an appeal in Thurston County Superior Court.*
- *Negotiations and a 2007 settlement agreement between Ecology, Puget Soundkeeper Alliance, and the Northwest Marine Trade Association.*
- *A receiving water study in Lake Union and Puget Sound (Ecy Pub. No. 09-03-051). This study concluded that copper in the receiving waters near boatyards was below acute and chronic criteria.[4]*
- *Consideration of dilution factors contained in individual Permits for facilities with similar discharge locations, the mean of which was 30.*
- *Analysis of stormwater runoff from representative boatyards.*
- *Analysis of state water quality criteria.*
- *Calculation of water quality-based limits using EPA's TSD method and application of principles from Ecology's Permit Writer's Manual.*
- *Public comments and Ecology responses thereto on the 2010 draft Permit.*
- *An appeal to and hearing before the Pollution Control Hearings Board of the 2010 Permit.*
- *Negotiations between Puget Soundkeeper Alliance, Ecology and the boatyard community prior to the current Permit.*

The Fact Sheet and Response to Comments for the 2010 Permit demonstrate Mr. Gary Bailey based the Permit on conditions at discharge locations similar to those used by boatyards. Mr. Bailey was an expert in water quality standards, described by Ecology as having "profoundly" contributed to Ecology's Water Quality Program Permit Writer's Manual.[5] Mr. Bailey was a recognized expert in EPA's TSD method, was the project lead for the Manual's development, and for 25 years coordinated updates to the Manual. The dilution factor he selected was not appealed. There is simply no basis for disregarding his analysis and expertise.

Moreover, the best available science suggests a dilution factor of 20 is conservative. Dilution factors from example facilities with discharge locations similar and applicable to boatyards are presented in Table 1. The acute dilution factors at these facilities, which are conservative, range from 14 to 89.

Table 1 - Example Acute Dilution Factors for Discharge Locations Applicable to Boatyards			
Facility	Discharge Location	Acute Dilution Factor	Reference
Fairhaven Shipyard	Bellingham Bay	85	FS for NPDES Permit (12/28/09) at 19
Foss Shipyard	Lake Washington Ship Canal	14 to 66	FS for NPDES General (2005) at 64–65
Georgia Pacific West	Bellingham Bay	57 - 89	FS for NPDES Permit (11/14/06) at 8
Ambrosia Technology	Willapa Bay	43	FS for NPDES Permit (11/14/06) at 8
General Metals of Tacoma	Hylebos/Commencement Bay	31	Mixing Zone Study Approval (5/18/15)
Seattle Int'l Gateway	Lower Duwamish Waterway	17.8	ARCADIS, Technical Basis for L3 Corrective Action Waiver (5/20/11) App. C
Pacific Fisherman Shipyard	Lake Washington Ship Canal	25	CH2M Hill, Effluent Mixing Study (2008)
Ocean Spray Cranberries	Grays Harbor	33 to 51	Parametrix, Mixing Study Report (11/91)

These examples are conservative because each is based on a mixing zone analysis conducted in accordance with Ecology's Water Quality Program Permit Writer's Manual. Therefore, each mixing zone analysis was based on critical condition parameters which had low probability of occurrence. The term "reasonable worst-case" applies to these values.

The proposed dilution factor of 5 is a mistake, evident in part because it provides boatyards with the same dilution factor used for calculation of the copper benchmark in the Industrial Stormwater General Permit (ISGP). One of the most important factors affecting dilution is the depth of the receiving water. Boatyards by definition are located on waterways that are deep enough to allow boat access. By contrast, ISGP permittees commonly discharge to intermittent streams or narrow, shallow canals. It is illogical to provide the same dilution factor to boatyards which discharge to deep and tidally-influenced waterbodies like the Strait of Juan de Fuca and Puget Sound.

Ecology should also bear in mind that current saltwater copper criteria are likely significantly overprotective, as they do not account for water chemistry. EPA recently revised its criteria for derivation of water quality criteria to include use of the biotic ligand model (BLM), and is directing use of the BLM in Oregon. Criteria derived through the BLM often shows the assimilative capacity of water bodies is higher than hardness-based methods for deriving criteria suggest. In fact, recent studies indicate that BLM-based water quality criteria may be 2-3 times higher than Washington State's current saltwater copper criteria.

The dilution factor of 20 is a critical component of the current Permit. On one hand, the Permit is exceedingly stringent and effective in reducing pollutant loads. Unlike the ISGP, the Permit drives boatyards towards treatment because it does not annually forgive benchmark exceedances. Boatyards samples show enormous reduction in copper and zinc under the Permit.

However, the Permit's dilution factor also protects boatyards from unsubstantiated allegations of water quality violations and demands for more stringent benchmarks. The dilution factor is, accordingly, critical to the viability of boatyards. As Ecology recognized regarding the 2010 Permit, the Permit "continually reduces pollutants while allowing struggling boatyards to remain in business."[6]

The viability of boatyards is in turn critical to continued protection of state water quality. The few remaining boatyards in Washington[7] operate on thin margins and cannot afford to re-engineer existing stormwater treatment systems. Without boatyards, much of the maintenance of

Washington's 238,000 boats will shift to unregulated backyards, streets and driveways. Eliminating boatyards will ultimately degrade state water quality. It is truer today than ever "that boatyards serve a valuable function and are an economic asset to the state economy."[8]

We strongly encourage Ecology to recognize that science and policy do not support revising the dilution factor.

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[1] Ecology, 2011 Boatyard General Permit, Appendix B, Response to Public Comments at 55.

[2] Ecology, Fact Sheet for NPDES General Permit for Boatyards (2005) at 19.

[3] Ecology, 2011 Boatyard General Permit, Appendix B, Response to Public Comments at 14.

[4] "The receiving water data collected by Ecology in the vicinity of boatyards showed no impairment for copper." Ecology, 2011 Boatyard General Permit, Appendix B, Response to Public Comments at 16.

[5] Ecology, Water Quality Program, Permit Writer's Manual, Pub. No. 92-109 (Jan. 2015) at xiii.

[6] Ecology, 2011 Boatyard General Permit, Appendix B, Response to Public Comments at 47.

[7] As noted above, more than 50% of the boatyards in Washington have been lost over the last 20 years. In 1997 there were 130 boatyards. In 2010 there were 88 boatyards. In 2014 there were only 67 boatyards.

[8] Ecology, 2011 Boatyard General Permit, Appendix B, Response to Public Comments at 47.

41. Comment – Port of Edmonds (comment 2)

The Port is concerned that in the draft permit, Ecology has added language in Section S4 of the draft permit that specifically assigned an effluent dilution factor of 5. This change from the previous cited dilution factor of 20, even if it is deemed to be just a correction or clarification by Ecology, represents a potential significant change. The actual dilution factor for a particular boatyard will depend on details of the facility and the receiving water, and therefore assigning a specific low dilution factor seems to be unnecessary and inappropriate for a general permit. The Port is concerned that the specific low dilution factor cited in the draft permit could be inappropriately used by third-party groups, along with the stormwater data collected under the permit, to bring actions against boatyards on the basis of alleged state surface water quality violations (at lower copper and zinc concentrations than the benchmark values). The concern is that a boatyard would be subject to third-party actions, even if it achieves the permit benchmarks or follows the required response actions under the permit. The Port asks Ecology to remove reference to any specific dilution factor in the permit.

42. Comment – Port of Seattle (comment 3)

For purposes of complying with water quality standards, the final paragraph of this section would authorize dilution within 20 feet of the point of discharge and assign a default dilution factor of 5.0. It also would allow a determination to be made that the actual dilution factor is less than 5.0 at 20 feet from any specific outfall. The methods and circumstances under which such a determination would be made are not specified. However, if a dilution determination is made, that determination should not be arbitrarily limited to 5.0 or less. The determined dilution factor should be used, regardless of whether it is less than or greater than 5.0.

The proposed condition would also not allow dilution unless "all the other conditions of this general permit" are met. This language should be deleted because it would include permit conditions that have nothing to do with dilution. Whether or not those other permit conditions are met should not affect whether or to what extent the discharge is diluted in the receiving water.

43. Comment – Puget Soundkeeper Alliance (comment 16)

Revisions to S4 in the draft require permittees to apply all known and reasonable methods of prevent, control and treatment (AKART). To comply with this condition, the Permittee must prepare and implement an adequate SWPPP, with all applicable and appropriate BMPs, including the BMPs necessary to meet the standards identified here in this condition, an must install and maintain the BMPs in accordance with the SWPPP, applicable stormwater technical manuals, and the terms and conditions of this permit.

Soundkeeper supports the inclusion of this language.

44. Comment – Bruce Wishart (oral); Puget Soundkeeper Alliance (comment 17 and last page of letter)

Shocking and disturbing draft revisions to S4 purport to award permittees "who meet all the other conditions of this general permit" a dilution factor.

This revision is a poorly disguised effort to provide for illegal grants of mixing zones. The fundamental mandate of both federal and state law is that NPDES permit conditions must ensure strict compliance with water quality standards regardless of technological feasibility. 33 U.S.C. § 1311(b)(1)(C) (a permittee "shall . . . achieve[] . . . any more stringent limitation, including those necessary to meet water quality standards . . . ."); 40 C.F.R. § 122.44(d);); *Defenders of Wildlife v. Browner*, 191 F.3d 1159, 1163 (9th Cir. 1999); *Ackels v. U.S. Envtl. Prot. Agency*, 7 F.3d 862, 865-66 (9th Cir. 1993) ("economic and technological restraints are not a valid consideration" in establishing permit conditions necessary to comply with water quality standards); RCW 90.48.520; *Puget Soundkeeper Alliance v. Pollution Control Hearings Board*, 189 Wn.App. 127, 149 (2015).

The only circumstance in which the water quality standards allow consideration of dilution in determining compliance with water quality standards is when a mixing zone is authorized under WAC 173-20A-400. Ch. 173-201A WAC. A mixing zone is an exception to the water quality standards that may only be granted in limited instances. *Puget Soundkeeper Alliance v. Ecology and Seattle Iron & Metals Corp.,* PCHB No. 13-137c, Findings of Fact, Conclusions of Law, and Order (July 23, 2015) at 46.

If a permittee "meet[s] all the other conditions of this general permit," it may have satisfied the AKART prerequisite for a mixing zone, WAC 173-201A-400(2), but literally none of the other requirements of WAC 173-201A-400 is necessarily satisfied. There is no provision for consideration of critical discharge conditions. WAC 173-201A-400(3). And there is certainly no showing that "the supporting information clearly indicates the mixing zone would not have a reasonable potential to cause a loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses of the water body, result in damage to the ecosystem or adversely affect public health." WAC 173-201A-400(4).

The draft BGP S4 "effluent dilution factor" provision is very much like the "standard mixing zone" provision in a past iteration of the Industrial Stormwater General Permit rejected by the Pollution Control Hearings Board. *Puget Soundkeeper Alliance, et al. v. Ecology,* PCHB No. 02-162, Order Granting Partial Summary Judgment (June 6, 2003) at XXIII – XXXIII. Mixing zones are the only means to legitimately consider dilution in a determination of compliance with water quality standards, and must be authorized on a case-by-case basis by Ecology in a manner consistent with WAC 173-201A-400.

Soundkeeper strongly urges Ecology to remove this provision because it is unlawful, unacceptable, and abhorrently contrary to the agency's charge of protecting water quality.

- Illegal mixing zones must not be sanctioned, and Ecology certainly should not be administering them as if they were a token prize for good behavior.

45. Comment –Washington Public Ports Association (comment 2)

WPPA observes that there remains significant confusion in the regulated community regarding the proposed reduction in the dilution factor from 20 to 5. In public meetings we have been assured that the change is consistent with the formula used to establish benchmarks; that it corrects a mistake in the current permit. An assertion of this kind poses potentially broad effect of a stormwater general permit. As a result, the public deserves better and more transparent vetting than this change has received. It does not reflect well on the agency when sophisticated practitioners remain unsure of the effect of a proposed policy at this late date.

We ask that the Department of Ecology to convene immediately a workgroup of experienced private sector stormwater practitioners and permittees to examine the effect of the proposed change. If the workgroup concludes that the change will have a profound negative impact on permitees, we believe the agency should postpone adopting the proposed permit to allow time for alternatives to be offered and evaluated.

46. Comment – Peter Schrappen, Bruce Wishart, and Gerry O'Keefe (oral comments, condensed)

Ecology should not provide mixing zones. Ecology needs to address the confusion over the dilution factor, including providing reassurance that no changes have occurred to the methods used to derive the dilution factor or to employ it to calculate benchmark values.

Ecology Response (40, 41, 42, 43, 44, 45, and 46)

See the Explanation on Page 8 of the Summary of Changes table (copied below) for the background of the prior and current dilution factors. Ecology used the proposed dilution factor (5.0) in its evaluation of Reasonable Potential and calculation of benchmarks. None of the benchmarks changed between Terms 4 and 5 of the permit. If a Permittee believes that local conditions justify using a different dilution factor, the Permittee may discuss this with their Ecology Inspector, and request a modification of their general permit or apply for an individual permit.

"Summary of Changes Between the 2011 Final Boatyard General Permit and the 2016 Final Boatyard General Permit (effective August 8, 2016)"

Explanation

Corrected the 2011 permit language, and emphasized the State requirement for AKART.

For the **Term 5** Permit (to be issued in 2016), discussion of the dilution factor (**5.0**) was corrected in the permit and expanded in the Fact Sheet (to be issued in 2016). Since the calculations for determining the limits and benchmarks had used the correct dilution factor, this correction did not impact those limits and benchmarks. Subsequent calculations based on conservative assumptions confirmed that a 5.0

dilution factor would be protective of water quality (See Tables 10 and 11 of the Fact Sheet).

The **Term 4** Permit (issued in 2011) and Fact Sheet (issued in 2010) contradicted each other with (a) Confused language discussing mixing zones and dilution factors, and (b) Differing values for the dilution factor (**20** and **5**, respectively). Despite the permit language regarding a "mixing allowance" "to achieve a dilution factor of 20," the final benchmarks were apparently based upon the dilution factor in the Fact Sheet (i.e., 5). Neither document explained why their dilution factors also differed from the dilution factors identified for the Term 3 Permit.

The **Term 3** Permit (issued in 2005, with later modifications) and Fact Sheets (issued in 2002 and 2005) identified several different dilution factors, depending on the type of receiving water. The dilution factors were **1.0** for freshwater lakes, and **10** for freshwater rivers and marine waters.

The additional language made this section of the boatyard general permit similar to the corresponding section in the industrial stormwater general permit.

Ecology believes that a dilution factor of 5.0 is reasonable and appropriate for application to stormwater runoff from boatyards. It is the same factor used to determine the benchmarks in the current Boatyard General Permit, and it is the same factor used in the current Industrial Stormwater General Permit (ISGP). Ecology will remove from the permit reference to the value of the dilution factor. However, the subsection in the Fact Sheet titled "Discharges to Non-Impaired Surface Waters" will contain an expanded description of the determination of the value 5.0, as shown below.

Ecology determined water quality-based limits using a risk based model and the U.S. EPA Technical Support Document (TSD) method (U.S. EPA, 1991), illustrated in Tables 10 and 11. Discharges to non-impaired freshwaters were addressed as shown in Table 10, and discharges to non-impaired marine waters were addressed as shown in Table 11. Calculations employed: (a) The available effluent data reported for total copper, lead, and zinc in stormwater runoff discharges during the current permit term; (b) The receiving water data for the same parameters plus the total hardness in freshwater; (c) The U.S. EPA acute water quality criteria for human health and aquatic life; and (d) The value of 5.0 as a reasonable dilution factor. A Permittee must be operating at AKART to be eligible for a dilution factor.

To prepare the Industrial Stormwater General Permit (effective January 1, 2010), Ecology worked with an external stakeholder workgroup who explored a number of permit issues, including the derivation of metals benchmarks. During the stakeholder process, Ecology hired Herrera Environmental Consultants (Herrera) to perform analyses to determine the risk of exceeding acute water quality standards given a range of benchmarks. Since this analysis must take into account the broad range of facility types and receiving waters that would be covered under the ISGP, compliance with water quality standards cannot be evaluated based solely on site-specific

information. Therefore, this analysis utilized simple dilution models to evaluate the potential for exceeding water quality standards given the following model inputs:

- Representative receiving water data for western and eastern Washington,
- Representative dilution factors, and
- The proposed permit targets.

To provide some basis for assessing uncertainty in these analyses, a Monte Carlo simulation was employed in running the dilution models to determine the probability of exceeding water quality standards based on the receiving water conditions having the highest potential for occurrence. This methodology is similar to the Monte Carlo simulation described in the U.S. Environmental Protection Agency's "Technical Support Document for Water Quality-Based Toxics Control" (1991), which was adapted from similar analyses performed by Herrera in association with the "6415 report" (EnviroVision and Herrera, 2006) that examined an alternative suite of proposed metals benchmarks. The results of the 2009 Herrera analysis, hereby incorporated into this fact sheet by reference, were submitted to Ecology and titled: "Water Quality Risk Evaluation for Proposed Benchmarks/Action Levels in the Industrial Stormwater General Permit," dated February 9, 2009. Based on the 2009 Herrera Evaluation, Ecology based the ISGP benchmark values for copper and zinc on values that correspond to a 90% probability of meeting water quality standards in the receiving water, with an assumed dilution factor of 5.0.

Ecology believes that a dilution factor of 5.0 is reasonable and appropriate for application to stormwater runoff from boatyards. It is the same factor used to determine the benchmarks in the current Boatyard General Permit, and it is the same factor used in the current ISGP. The use of a dilution factor in deriving the benchmark is not considered the authorization of a mixing zone, but Ecology has determined that a modest dilution factor 5.0 is consistent with WAC 173-201A-400. Based upon Ecology's best professional judgment, experience under previous permit cycles, the available science, and the "Boatyard Stormwater Treatment Study" (Taylor Associates, Inc., 2008), Ecology has determined that in order to meet the proposed benchmarks, permittees will be required to fully apply AKART, and many will be required to install active stormwater treatment systems.

Since discharges of stormwater runoff are short-term and episodic, Ecology judged that chronic exposure scenarios were not relevant and that a moderate ~~low~~ dilution factor of 5.0 was reasonable. The calculations underlying Tables 10 and 11 indicated that only total copper and total zinc in the anticipated stormwater discharges posed reasonable potentials for causing a violation of water quality standards.

Permittees who meet all the other conditions of this general permit are assigned an effluent dilution factor of 5.0 based upon a maximum 20-foot distance from the point of discharge into the receiving surface water. If 20 feet is insufficient to produce a dilution factor of 5.0, then the allowed dilution factor is correspondingly reduced to ensure compliance with surface water quality standards at that 20-foot distance.

~~Therefore~~ Ecology retained from the current permit the benchmarks for total copper and zinc. The maximum daily benchmarks for total copper and total zinc in discharges of stormwater runoff to both fresh and marine waters were 147 and 90 ug/L, respectively. A summary of the proposed benchmarks alongside the current benchmarks is provided in Table 13.

Permit Section S6
Monitoring Requirements

47. Comment – Port of Seattle (comment 4)

The requirement to collect and analyze samples during "unusual discharge" conditions is too vague and subjective to be implementable and exposes permittees to unreasonable liability for failing to guess what conditions Ecology or a third party might consider sufficiently "unusual" to warrant sampling pursuant to this requirement. The required sampling frequency in the permit ensures that a facility's discharge monitoring results will be representative of the volume and nature of its discharge. The additional requirement to sample any unusual discharge or discharge condition should be removed.

Ecology Response (47)

The purpose of the indicated paragraph is to ensure that samples are representative of the discharge being monitored, not to increase the number of samples collected. Ecology has removed the word "unusual" from the statement, as shown below.

Samples and measurements taken to meet the requirements of this general permit must represent the volume and nature of the monitored discharge within the monthly monitoring period, including representative sampling ~~of any unusual discharge or discharge condition such as~~ during bypasses, upsets, and maintenance-related conditions that may affect~~ing~~ effluent quality.

Permit Sections S6 and S8.B.2
Monitoring Requirements and SWPPP Monitoring Plan

48. Comment – Puget Soundkeeper Alliance (comment 18)

The draft permit includes a revision to S6 to require that samples represent the volume and nature of the monitored discharge within the monthly monitoring period, including representative sampling of any unusual discharge or discharge conditions such as bypasses, upsets, and maintenance-related conditions affecting effluent quality.

Soundkeeper supports the intent of the proposed language: samples should be representative. However, the proposed paragraph includes no mechanism for holding permittees accountable. This language should be incorporated into the enumerated monitoring requirements and the

reporting requirements. Reports should indicate that the permittee sampled during unusual discharge conditions and should contain enough information to determine whether samples are representative.

We note with concern that the new language in the S6 requires monitoring that "represents the volume and nature of the monitored discharge" rather than of all discharges from the facility. This is a major loophole with potential to frustrate the BGP's water quality protection scheme because it allows a permittee to choose to sample one of several points of discharge without ensuring that it is either representative of the facility discharge as a whole or the discharge most likely to be contaminated.

As written, S6 of the draft BGP does not appear to be enforceable and is therefore of little value for protecting water quality. It is inadequate to specify only that permittees "must collect samples from a location or locations affected by boatyard related activities and as noted on the application for coverage." What is the basis for believing that this language requires permittees to sample discharge locations that are representative of facility discharges overall?

This provision also violates WAC 173-220-150(1)(a), which mandates that each NPDES permit shall require that "all discharges," not just ones selected by a permittee for monitoring, "shall be consistent with the terms and conditions of the permit."

The monitoring plan provision of S8.B.2 is inadequate to solve these problems. In relevant part, it provides that "if there is more than one point of discharge, then the plan must include a discussion of how the Permittee has determined which point(s) of discharge are to be monitored such that the monitoring is representative of the discharge (see permit application)." First, this merely authorizes the permittee to limit its monitoring points provided that it includes some discussion in the appropriate section of its SWPPP. As written, such discussion fulfills the permittee's evaluation requirement without regard to validity or content of its determination of representativeness. At a minimum, this should be changed to specify that the selected discharge must actually be objectively representative, not only to require the permittee to discuss the matter. Soundkeeper strongly urges that the ISGP provisions concerning "substantially identical outfalls" be incorporated to provide this objective content. Second, the reference "see permit application" is entirely unhelpful. NPDES permits should be self-contained and not require reference to other documents to determine their meaning or proper implementation.

Soundkeeper urges Ecology to revise S6 to require that permittees monitor all discharges from the facility. Permittees should be required to sample all outfalls discharging to surface water unless they can show that two or more outfalls are "substantially identical" as defined in the ISGP (same activities, same pollutant levels, same BMPs).

Ecology Response (48)

The "mechanism for holding Permittees accountable" is enforcement of the permit conditions. Enforcement of the permit and the consequences of noncompliance with or violation of the conditions of the permit are explained in Sections G1 (Discharge Violations), G4 (Permit Coverage Revoked), G16 (Penalties for Violating Permit Conditions), and G21 (Duty to Comply).

Ecology does not intend for Permittees to collect monitoring samples that represent "facility discharges overall," but rather that represent stormwater runoff discharges from areas where industrial activities occur. If a Permittee elects not to collect samples from all of those areas, the Permittee must document in the SWPPP why this is acceptable, and acquire Ecology approval for that plan. Prior to issuing coverage, Ecology Inspectors verify that the monitoring points to

be sampled will provide samples representative of stormwater runoff from all areas with industrial activity.

Ecology has separated the first three sentences of Section S8.B.2 (Monitoring Plan) in a separate paragraph and modified the language to account for substantially identical discharge points. The modified language and the new definition are shown below.

The SWPPP must include a monitoring plan. The plan must identify all the points of discharge of pressure-wash wastewater, process wastewater, and stormwater runoff to the sanitary sewer, to surface water, to an infiltration basin or trench, and to a storm drain system, if any. If there is more than one point where ~~of~~ stormwater runoff discharges, then the plan must include a discussion of how the Permittee has determined which point(s) of discharge are to be monitored and which substantially identical discharge point(s) will not be monitored. ~~such that the monitoring is representative of the discharge (see permit application).~~

The SWPPP must contain the following documentation of why specified parameters are not to be monitored at each discharge point, if applicable.

a. General industrial activities conducted in the drainage area of each discharge point.

b. Exposed materials located in the drainage area of each discharge point that are likely to be significant contributors of pollutants to stormwater runoff discharges.

c. Impervious surfaces in the drainage area that could affect the percolation of stormwater runoff into the ground (e.g., asphalt, crushed rock, grass).

d. Best management practices conducted in the drainage area of each discharge point.

e. Location(s) of the discharge point(s) the Permittee will not monitor because the pollutant concentrations are substantially identical to another discharge point that is being monitored.

f. Reasons why the Permittee expects the discharge points to discharge substantially identical effluents.

Substantially identical discharge point means a discharge point that shares all the following characteristics with another discharge point:

(1) The same general industrial activities conducted in the drainage area of the discharge point.

(2) The same type of exposed materials located in the drainage area of the discharge point that are likely to be significant contributors of pollutants to stormwater discharges.

(3) The same type of impervious surfaces in the drainage area that could affect the percolation of stormwater runoff into the ground (e.g., asphalt, crushed rock, grass).

(4) The same best management practices conducted in the drainage area of the discharge point.

Permit Section S6.D.3.c.i
Visual Inspections and Reporting Illicit Discharges

49. Comment – Puget Soundkeeper Alliance (comment 19)

Soundkeeper supports the revision to S6.D.3.c.i to provide that illicit discharges must be reported to Ecology within 24 hours (rather than 7 days, as previously required) because it will help to increase accountability, and ensure a rapid response and/or cleanup to mitigate the environmental harm of an illicit discharge.

Ecology Response (49)
Comment noted.

Permit Sections S6.D.4.c; S6D.4.d; and S9.E
Visual Inspection Requirements and Noncompliance Notification

50. Comment – Northwest Marine Trade Association (comment 11)

Site inspections and permit noncompliance. Permit Condition S6.D.4.c asks Permittees to state whether the site is in or out of compliance with the terms and conditions of the SWPPP and the Permit. Ecology's Boatyard Site Inspection Checklist, ECY 070-196, asks permittees to certify under penalty of law that the Facility is in or out of compliance with the Permit. A noncompliance certification has significant enforcement implications under the Clean Water Act.

Ecology should clarify what circumstances observed during an inspection constitute noncompliance under Condition S6.D.4. and what circumstances observed during an inspection (e.g., solids requiring cleanup) merely require a response consistent with the SWPPP.

51. Comment – Northwest Marine Trade Association (comment 12)

Reporting results of site inspections. The Permit in Condition S9.E. requires that any spills or discharges not authorized by the permit that may endanger health or the environment be reported to Ecology. Permittees are asked on page 4 of the Site Inspection Checklist (ECY 070-196) whether "you have reported the non-compliance to the Dept. of Ecology." Per the above comment, it is unclear whether and under what circumstances other spills and discharges not authorized by this permit require reporting.

Ecology Response (50 and 51)
The U.S, EPA requires that reports of self-inspection results contain "a record summarizing the results of the inspection and a certification that the facility is in compliance with the plan [SWPPP] and the permit, and identifying any incidents of non-compliance" (40 CFR 122.44 (i)(4)(ii)). One of the purposes of self-inspections is to identify problems (e.g., non-compliance issues) so that the Permittee can fix them. Ecology prefers that Permittees fix minor short-term non-compliance issues during the normal course of their business, such as when following up on issues identified during a self-inspection. Of much greater concern to Ecology are ongoing problems, such as leaking wastewater pipes, improper operation of a treatment system due to inadequate employee training, or repeated minor non-compliance issues. The types of events that would trigger reporting of "non-compliance" include such ongoing problems in addition to failure to sample, failure to report, late reporting, failure to implement mandatory BMPs, discharge of oils, by-pass situations, and illegal process wastewater discharges. Ecology has aligned the language in Items c and d in Section S6.D.4 more closely with the EPA requirement, as shown below. Ecology will also update its example Site Inspection Checklist (Publication Number ECY 070-196) in the near future.

S6. MONITORING REQUIREMENTS

D. Visual Inspection Requirements

4. The Permittee shall record the results of each inspection in an inspection report or checklist and keep the records on-site for Ecology review. The Permittee shall ensure each inspection report documents the observations, verifications, and assessments required in Condition S6.D (Visual Inspection Requirements) and includes:

~~c. Statements that, in the judgment of the person conducting the site inspection and described in Condition G17 (Signatory Requirements), the site is either in compliance or out of compliance with the terms and conditions of the SWPPP and this permit.~~

c. Certification that the facility is in compliance with the SWPPP and the permit, identification of any incidents of non-compliance found during the inspection, and a schedule for implementing the remedial actions that the Permittee plans to take to resolve those non-compliance issues and to prevent future occurrences.

~~d. A summary report and a schedule of implementation of the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.~~

Permit Section S7.A
Response to Monitoring Results that Exceed Benchmarks

52. Comment – Northwest Marine Trade Association (comment 6)

Ecology should clarify that the provision above applies when any six monitoring results for a single parameter (e.g., copper) for an outfall exceed the copper benchmark. Ecology should further clarify that a Level Three Response may be triggered when the monitoring results for any two samples from the same outfall exceed the benchmark.

53. Comment – Puget Soundkeeper Alliance (comment 20)

It is not clear what triggers a Level One Response, a Level Two Response, or a level Three Response. The wording is very imprecise and confusing.

For example, the permit contains three seemingly inconsistent statements regarding a Level One Response:

- Each time a monitoring result for any parameter is above a benchmark value, the Permittee must take all of the following [Level One Response] actions.
- A Level One Response is not required after four, five, or six exceedences
- No additional Level One Response is required for exceedence of a seasonal average [benchmark]

This section must be re-written for clarity so that permittees know what they are required to do.

Additional specific points of confusion include:

When a single sample exceeds benchmarks for multiple parameters, do the monitoring results for that sample count as one exceedence or multiple exceedences?

If there are five exceedences, it appears that no response is required because "[a] Level One Response is not required after four, five, or six exceedences," a Level Two Response is required only when four monitoring results are above a benchmark, and Level Three Response is required only when six monitoring results are above a benchmark. Is this true?

When four monitoring results in a sampling period exceed benchmark values that are not seasonal average benchmarks, do the results trigger Level One Responses in addition to a Level Two Response, or just a Level Two Response?

54. Comment – Puget Soundkeeper Alliance (comment 21 and last page of letter)

Proposed changes to S7.A that invite a permittee who has triggered a level three corrective action to "choose either to implement treatment that will bring discharges into compliance with permit requirements or request a waiver of permit requirements" is an unmasked open invitation for a permittee to take an off ramp rather than comply with hard-fought critical water quality protections.

Soundkeeper opposes the proposed change because the purpose of a NPDES permit is to protect water quality and eliminate pollution by requiring permittees to take steps to minimize discharge of pollutants. General permits are intended to streamline the permitting process for permittees whose operations and discharges are similar. If a Permittee's operations do not fit within the scope of the general permit, the Permittee must obtain an individual permit with BMPs and limitations tailored to the site and operations. It is not appropriate to simply excuse permittees from compliance with a general permit. Permittees who have exceeded benchmarks six times or more are polluting the water the permit is intended to protect. These permittees need

to either take steps to reduce polluted discharge or cease operation. If permittees who repeatedly exceed benchmarks are given a waiver and are allowed to continue polluting, Ecology is failing to implement the Clean Water Act.

Under the S7.A. "Permit Modification" heading, the BGP would directly contradict federal and state water pollution control law by allowing Level Three waivers where "installation of treatment BMPs is not feasible or not necessary to prevent discharges that may cause or contribute to violation of a water quality standard." The problem is that this language allows permit modifications to eliminate the WQBELs comprising "benchmarks plus adaptive management" – the basic water quality protection scheme in which exceedances of benchmarks designed to be protective of water quality trigger requirements for adaptive management corrective actions. The language allows a Level Three waiver where "installation of treatment BMPs is not feasible" even where there is no showing of non-necessity to prevent violations of water quality standards. The CWA requires the implementation of WQBELs at levels intended to prevent violations of water quality standards regardless of technological or economic limitations. 33 U.S.C. § 1311(b)(1)(C) (a permittee "shall . . . achieve[] . . . any more stringent limitation, including those necessary to meet water quality standards . . . ."); 40 C.F.R. § 122.44(d);); *Defenders of Wildlife v. Browner*, 191 F.3d 1159, 1163 (9th Cir. 1999); *Ackels v. U.S. Envtl. Prot. Agency*, 7 F.3d 862, 865-66 (9th Cir. 1993) ("economic and technological restraints are not a valid consideration" in establishing permit conditions necessary to comply with water quality standards). Washington statute includes an "even more categorical" prohibition, stating that "[i]n no event shall the discharge of toxicants be allowed that would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria." *Puget Soundkeeper Alliance v. Pollution Control Hearings Board*, 189 Wn.App. 127, 149 (2015) (quoting RCW 90.48.520. See also, id at 138: "… our legislature has in no uncertain terms prohibited [Ecology] from issuing permits that allow toxic discharges in violation of applicable standards"). Accordingly, the infeasibility of treatment BMP installation alone cannot serve as the basis for a Level Three waiver. A showing of "not necessary to prevent discharges that may cause or contribute to violation of a water quality standard" must be a prerequisite for a waiver.

The draft fact sheet (pp. 5 - 6) explains that "[w]hen site-specific conditions at a facility are not typical of the industrial group or they are beyond the scope of the general permit, an individual permit may be required." Soundkeeper suggests that this is the exact condition that exists when a BGP permittee is seeking a Level Three waiver, and that it is more appropriate to develop and issue an individual permit for a boatyard facing a difficult Level Three situation than to insert the waiver process to stretch the bounds of the general permit.

In addition, the draft fact sheet explains (p. 8) that the 2008 iteration of the BGP included a compliance schedule for permittees to install treatment systems and attain compliance with WQBELs. This compliance schedule is now long finished and it is inappropriate to provide a second round of compliance schedules to the same ends, which is what the Level 3 extensions would do.

Soundkeeper urges Ecology to remove the new language inviting permittees not to comply as unnecessary and unlawful.

- Ecology should not be inviting permittees not to install treatment systems when treatment is necessary to protect water quality. Sufficient (and arguably impermissible) off ramps already exist – and Ecology need not encourage the regulated community to depend on what should be a slim exception reserved for exceptional circumstances.

Ecology Response (52, 53, and 54)
While the corrective action language of the Draft Boatyard General Permit was clearer and more explicit than that of the current permit, Ecology agrees that its correction and clarification of the permit language could be improved. Regardless of the language changes in Section S7, Ecology has not changed or proposed to change its corrective action policies and practices from what it has required of boatyards under the current permit.

Ecology has modified the language in the first paragraphs of the Level One, Level Two, and Level Three Responses as shown below.

Level One Response, First Paragraph:

> Each time a monitoring result for any parameter is above a benchmark value, the Permittee must take all of the following actions. For example, if a single sample for a monitoring period yields analytical results exceeding benchmarks for total copper and total zinc, then a Level One Response is required for each parameter, and the two results represent two exceedances. A Level One Response is not required after four, five, or six exceedances.

Level Two Response, First Paragraph:

> During the effective term of the permit, when~~ever~~ four monitoring results (potentially including the seasonal average) have accumulated for any one parameter at any stormwater monitoring location and exceed ~~are above a~~ the benchmark for that parameter (e.g., ~~any four~~ three copper values from one monitoring location and one copper value from another monitoring location), ~~above the applicable copper benchmark at),~~ the Permittee must perform the following actions.

Level Three Response, First Paragraph:

> During the effective term of the permit, when any six monitoring results (potentially including the seasonal average) have accumulated for any one ~~for an outfall are above a~~ parameter at any stormwater monitoring location and exceed the benchmark for that parameter ~~value~~ (e.g., ~~six~~ four zinc values from one monitoring location and two zinc values from another monitoring location), ~~monitoring results exceed the copper benchmark) during the coverage under this permit~~; or when the monitoring results for any two samples exceed a parameter benchmark value during the coverage under this permit if a Level Two Response requirement had been triggered for that same parameter under the previous Boatyard General Permit (issued June 1, 2011), the Permittee must install treatment as described in subsection (a) below, unless the Permittee can demonstrate that treatment is either not feasible or not necessary as described in subsection (b) below. ~~shall perform all of the following actions.~~

Ecology agrees that the term "waiver" was misleading and has removed it from the permit.

To clarify Section S7.A.3 (b) (Level Three Response, Demonstration that Treatment is Not Feasible or Not Necessary), Ecology has added the following language to the end of that section.

> In this context, "not necessary" means that even without the installation of additional treatment BMP(s), the permitted discharges would not cause or contribute to a violation of water quality standards. Likewise, "not feasible" means that specific local conditions would prevent the Permittee from installing the BMP(s), such as the Permittee's landlord or the local fire marshal refusing to allow the installation. "Not feasible" does not include a Permittee's financial limitations. RCW 90.48.520 states, "In no event shall the discharge of toxicants be allowed that would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria."

Ecology also trimmed some of the language from Sections S7.B (Boatyards with a Level Three Response Requirement (Engineering Report) at the Time of Issuance) and S7.C (Boatyards with a Level Two Response Requirement at the Time of Issuance) to eliminate redundancies and contradictions, as shown below.

B. Boatyards with a Level Three Response Requirement (Engineering Report) at the Time of Issuance

Boatyards that have triggered the requirement for a Level Three Response under Condition S7 (Response to Monitoring Results that Exceed Benchmarks) of the previous Boatyard General Permit (effective June 1, 2011), but have not yet provided to Ecology an Engineering Report or request for permit modification, ~~to Ecology,~~ must provide either of these two documents in accordance with the requirements for a Level Three Response to Ecology by the date required under the terms of that permit ~~meet the following schedule: (1) Submit an Engineering Report that meets the content requirements listed in Item a in the Level Three Response; that results in discharge concentrations at or below benchmarks and any applicable effluent limits; and that evaluates treatment systems,~~ not later than (within 3 months of reporting the sixth value above a benchmark.) ~~from the effective date of this general permit~~. ~~(2) The Engineering Report must contain a schedule for implementing the preferred option within 12 months of acceptance of the Engineering Report by Ecology. The schedule may contain contingencies if other State or local permits are required. (3) The Permittee must implement the preferred option in accordance with the schedule and interim reports in the approved Engineering Report. The Permittee must notify Ecology at the time the new or modified treatment BMP is in place and operational.~~ Level One and Level Two Responses are not required for benchmark exceedances for the same parameter(s) that may occur during the time the preferred option(s) described in the Engineering Report is being put in place and started up.

C. Boatyards with a Level Two Response Requirement at the Time of Issuance

Boatyards that have triggered the requirement for a Level Two Response under

Condition S7 (Response to Monitoring Results that Exceed Benchmarks) of the previous Boatyard General Permit (effective June 1, 2011), but have not yet provided to Ecology a Level Two Source Control Report, must submit a Level Two Source Control Report to Ecology by ~~on~~ the date required under the terms of that permit (within 3 months of reporting the fourth value above a benchmark). ~~and must prepare a Level Three Response upon exceeding a benchmark two additional times during coverage under this permit.~~

Permit Section S7.A.3.d
Hardship Certification (Only in the old permit, June 1, 2011)

55. Comment – Gerry O'Keefe (oral comment, condensed)

Removal of the financial hardship waiver is a significant and unjustified change to the permit.

Ecology Response (55)

The Clean Water Act requires consideration of financial costs when determining AKART for a toxic pollutant, i.e., when comparing among different BMPs. However, neither the U.S. EPA nor the State of Washington provide for an economic hardship waiver to allow a discharger to violate water quality standards. RCW 90.48.520 states, "In no event shall the discharge of toxicants be allowed that would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria."

The current Boatyard General Permit (effective June 1, 2011) incorrectly provided an option for Permittees to request economic hardship waivers. During the term of this permit, only one Permittee requested an economic hardship waiver. The State Legislature had not appropriated funding for the Department of Corrections boatyard on McNeil Island, permit number WAG031038. Ecology handled this request by issuing to the Permittee an Administrative Order (DE #11216), which authorized the installation of a temporary Level III Treatment System, rented from a vendor, until the Legislature appropriated the funding for the Final Level IIII Treatment System. The Permittee subsequently received the required funding and installed the new treatment system as specified in the Administrative Order.

Permit Section S8
Stormwater Pollution Prevention Plan

56. Comment – Puget Soundkeeper Alliance (comment 14(b))

Soundkeeper also urges Ecology to add language to S8 requiring permittees to include a protocol in their SWPPPs for managing do-it-yourselfers (including regular BMP trainings) and mechanisms and strategies for controlling potential sources of pollutants from these activities.

57. Comment – Puget Soundkeeper Alliance (comment 22)

The draft permit requires the permittee to update the SWPPP to reflect significant process changes before those changes occur, and also to prepare and implement an adequate SWPPP to comply with AKART requirements before discharging to waters of the State.

Soundkeeper supports the proposed changes to SWPPP requirements because they increase accountability and prevent lapses in BMP coverage as sites change. However, the permit must define "significant process changes" such that permittees and the public can determine when a SWPPP must be updated. A "significant process change" might include the addition of a new pollutant, increased amount of existing pollutant, increase in acreage of effective impervious surface, etc – it should be clearly defined.

Ecology Response (56 and 57)

Ecology has added a new Section S8.B.3(h) (Oversight of Do-It-Yourselfers and Independent Contractors) to identify additional required SWPPP contents. That new section is shown below.

The definition of "significant process change" has already been provided on Page 52 of the Draft Boatyard General Permit.

(h) Oversight of Do-It-Yourselfers and Independent Contractors

The SWPPP must include a BMP(s) that describes how the Permittee will ensure that all individuals not employed by the boatyard who service marine vessels or any other motor-driven vehicle or otherwise conduct boatyard activities at its facility have been educated about required practices to control and prevent the release of pollutants to waters of the State, including at a minimum all the mandatory BMPs listed in Section S3 (Mandatory Best Management Practices). The Permittee must prohibit do-it-yourselfers and independent contractors who fail to implement all the required practices and BMPs from working at the boatyard.

The Permittee must document its compliance with this BMP by

i. Describing in the SWPPP the Permittee's procedures for communicating the required practices to non-boatyard individuals;

ii. Describing in the SWPPP the Permittee's procedures for providing oversight of non-boatyard individuals, e.g., by conducting regularly scheduled inspections of their work area(s) and activities;

iii. Maintaining written agreements with those non-boatyard individuals that they will implement all of the mandatory BMPs; and

iv. Describing in the SWPPP the process for excluding repeat offenders from its facilities.

Permit Section S8.B.3
SWPPP Contents, Best Management Practices

58. Comment – Northwest Marine Trade Association (comment 8)

NMTA Comment: Ecology should eliminate the obligation for boatyards to assess the pollutant removal performance of "each" BMP from S8.B.3.

A boatyard SWPPP may list mandatory BMPs (e.g., use of a vacuum sander, in-water vessel maintenance), operational source control BMPs (e.g., sweeping and vacuuming, disposing of rags, recycling materials, prohibiting certain practices) and preventative maintenance BMPs. Some of these BMPs are in-place daily, while others are a response to irregular situations.

Estimating the performance of treatment BMPs in a Level 3 engineering report is not unusual. Yet the revision in S8.B.3 implies boatyards must go so far as to estimate the pollutant removal performance of all the facility's BMPs. There is no parallel requirement in the ISGP, and there is no basis for it in the Boatyard Permit. Quantifying the pollutant removal performance of dozens of source control and preventative BMPs is not only nearly impossible, it is unnecessary and cost prohibitive.

59. Comment – Port of Edmonds (comment 3)

The proposed language indicates that the SWPPP must document how the Permittee selected stormwater BMPs, the pollutant removal performance expected from each BMP, the technical basis that supports the performance claims for the selected BMPs, and an assessment of how the selected BMP will comply with State water quality standards and satisfy the technology-based treatment requirements of 40 CFR Part 125.3 and Chapter 90.48 RCW.

Ecology should eliminate the obligation for boatyards to assess the pollutant removal performance of "each" BMP from this section. It is certainly appropriate to quantify the pollutant removal performance of a proposed stormwater treatment system as part of an engineering report prepared by a professional engineer as part of a Level Three Response, and that is already adequately covered in the permit. However, to have a boatyard operator assess the specific performance of each of the many source control BMPs (e.g., use of bottom tarps, catch basin inlet filters, vacuuming, sweeping, paving, repaving, zinc handling practices, etc.) in the SWPPP is unreasonable. This type of information is unnecessary detail, would be difficult for boatyard operators to assess or quantify, and would again subject a boatyard to third party lawsuits that allege a permit violation for a boatyard SWPPP that does not have that specific level of detail.

Ecology Response (58 and 59)

Ecology has modified that second paragraph of Section S8.B.3 (SWPPP Contents, Best Management Practices) by adding the word "treatment" where appropriate.

Permit Section S8.B.3(e)
SWPPP Contents, Preventive Maintenance

60. Comment – Northwest Marine Trade Association (comment 3)

It is unclear if Ecology intends for this language to replace or somehow complement the provisions of S10. The Permit already regulates Bypass in S10 and prohibits resuspension and reintroduction of substances under General Condition 12. For example, Special Condition 10 includes language describing when boatyards can conduct maintenance (S10.A.1). Special Condition 10 also already describes how Permittees can avoid bypass, report it to Ecology, and obtain pre-approval.

In lieu of the proposed language, we suggest Ecology recommend that Permittees reference Special Condition S10 before scheduling maintenance of the facility's stormwater drainage and treatment systems.

If Ecology retains this language, we suggest Ecology explain what constitutes "unavoidable degradation of effluent quality," whether "facility" maintenance encompasses more than the stormwater drainage and treatment system maintenance described in the first sentence of this condition, how boatyards are to determine when waterbodies are experiencing critical conditions so as to schedule maintenance, and how permittees are to obtain Ecology approval.

61. Comment – Port of Edmonds (comment 4)

The draft permit includes added language that requires boatyards to schedule and conduct maintenance "during periods when the receiving waterbodies are not experiencing critical conditions and in a manner approved by Ecology." It is not adequately defined what critical conditions means, and confirming a critical condition of a receiving water would become a potentially difficult thing to verify prior to conducting maintenance on stormwater drainage and treatment systems. The Port takes adequate steps to ensure that the receiving water is not impacted during its maintenance activities and requests that this unclear and unnecessary language be removed.

62. Comment – Port of Seattle (comment 5)

The added sentence is too vague and subjective to be implemented. Moreover, because the SWPPP already must include the schedule and frequency for preventive maintenance tasks, any water quality concerns associated with maintenance can be addressed through SWPPP. There is no need for an additional requirement to seek and obtain Ecology's approval under circumstances that are not clear. In addition, delays in obtaining Ecology's approval could harm water quality by delaying needed maintenance. If Ecology chooses to retain this provision, a sentence should be added that would deem Ecology's approval to have been obtained if Ecology has not responded within 30 days.

63. Comment – Puget Soundkeeper Alliance (comment 23)

This provision purports to apply to situations where "maintenance of facilities may necessitate unavoidable degradation of effluent quality".

This provision would unlawfully authorize discharges that cause or contribute to violations of water quality standards, including toxicant standards, in violation of 33 U.S.C. § 1311(b)(1)(C) and RCW 90.48.520. The RCW 90.48.520 prohibition is "categorical" in allowing such discharges "in no event." *Puget Soundkeeper Alliance*, 189 Wn.App. at 149. This provision

would allow Ecology to authorize such violation by unspecified methods of approval in violation of the WAC 173-220-150(1)(a) mandate that the permit shall require that "all discharges authorized by the permit shall be consistent with the terms and conditions of the permit," by providing for compliance through consistency with terms to be identified by Ecology, outside the permit, in a future, unspecified manner. This type of provision, allowing for violation of a fundamental permitting mandate through some informal process to take place in the future, is impermissible under this regulation and others providing for public participation in permitting decisions.

Soundkeeper does not understand why the maintenance-related discharges considered here would fall outside the permit provisions for bypass in S10.A.1. or 3., which specify allowable circumstances and approval and reporting procedures for essential maintenance and anticipated bypasses. (But see comments on S10 below.) "Bypass" is defined in S10 as "the intentional diversion of waste streams from any portion of a treatment facility."

What is the difference between bypass and the preventive maintenance discharges addressed by S8.B.3.e?

64. Comment – Bruce Wishart (oral comment, condensed)

The Condition addressing Preventive Maintenance needs clarification. Ecology should not allow unavoidable degradation of effluent quality associated with preventive maintenance.

Ecology Response (60, 61, 62, 63, and 64)

Ecology agrees, and will remove from the final permit the third sentence in that paragraph.

Permit Section S9
Reporting and Recordkeeping

65. Comment – Peter Schrappen (oral comment, condensed)

Ecology should provide Permittees with the possibility to attain Consistent Attainment status as in the Industrial Stormwater General Permit (ISGP).

66. Comment – Northwest Marine Trade Association (comment 10)

Consistent attainment. As is allowed under the ISGP, the Permit should allow permittees to suspend sampling in response to consistent attainment of benchmark values. Limits on consistent attainment ensure that few facilities achieve that status. There is no basis for denying boatyards access to this status.

Ecology Response (65 and 66)

Ecology will not make this change to the Boatyard General Permit. Based on our experience with the ISGP, the determination and tracking of consistent attainment has been very difficult to accomplish for both Ecology and the Permittees. Incorporating Consistent Attainment into the Boatyard General Permit will increase the likelihood that Permittees will accidentally find themselves out of compliance for failure to monitor their discharge due to confusion of when that status has been achieved and when it must be re-established. Additionally, if Permittees acquired relief from monitoring requirements due to their acquisition of Consistent Attainment status, they

may not consistently monitor the performance of their stormwater treatment system and thus be unable to develop empirical breakthrough curves and maintain the continuous effectiveness of the treatment system.

67. Comment – Northwest Marine Trade Association (comment 13)

Electronic reporting. Ecology should enable Permittees to document when samples cannot be collected due to site conditions. For example, some boatyards are unable to sample when tidal conditions submerge the sample location. NMTA members report that Ecology records do not reflect this situation, leading to the mistaken impression that the facility failed to attempt to sample.

68. Comment – Peter Schrappen (oral comment, condensed)

Retrieval of certain information from the PARIS database has been problematic. For example, the Permittee was uncertain whether the system was actually maintaining the recorded reasons monitoring was not done, for example "due to tidal interference."

Ecology Response (67 and 69)

In the short term, Permittees may check "Flooding" from the drop-down menu to indicate a tidal interference situation. Ecology is currently engaged in a multi-year effort to improve the PARIS database structure and the applications for entering and retrieving data. If you are having difficulty accessing data you expect to be in the PARIS database, please contact Ecology directly.

Permit Section S10.A.3.c
Bypass Procedures

69. Comment – Puget Soundkeeper Alliance (comment 24)

Draft revisions to this provision would allow Ecology to approve a bypass via issuance of a determination letter, an administrative order, or a permit modification.

First, Soundkeeper does not support bypass of treatment facilities at boatyards. It is not clear when it would ever be necessary to approve a bypass. If Ecology believes that it is necessary to include a bypass provision in the BGP, it should be invoked only when bypass is necessary to avert an emergency – an imminent harm to public health and safety. Stormwater volume at a boatyard is simply not an emergency. The boatyard should be required to bring in a vactor truck and/or external storage capacity to hold pollutant effluent until it can be properly treated. Bypass should never be allowed for purposes of business convenience. If a boatyard must temporarily cease operations to address a volume problem, that is not a public health or safety concern.

Second, if a bypass is authorized, the decision must be subject to review to ensure accountability. Only administrative orders issued under RCW.48.120 and permit modifications can be appealed. RCW 43.21B.110. The Pollution Control Hearings Board does not have jurisdiction to review determination letters. Soundkeeper strongly opposed the use of a determination letter to authorize a bypass because this would prevent citizen oversight of the decision.

Ecology Response (69)
Ecology has removed the determination letter option from the relevant bypass language.

Permit Section S13.A.3
Termination of Coverage, Conditions Required for Approval

70. Comment – Puget Soundkeeper Alliance (comment 25)

Revisions to this provision would allow a permittee to terminate permit coverage when all discharges of stormwater runoff have been eliminated because stormwater runoff has been redirected to a sanitary sewer. This condition is inconsistent with Permit sections S2.A-C which establish limits for discharge to a sanitary sewer.

Delegated POTWs have a pretreatment program and can issue discharge permits that include limits and monitoring schedules to ensure that the discharge can be adequately treated by the POTW. The BGP sections S2.A-C authorize discharges to non-delegated POTWs within established limits that ensure that the discharge can be adequately treated by the POTW. Condition S13.A.3 terminates permit coverage if all stormwater runoff goes to a POTW. If permit coverage is terminated, the Permittee no longer has to comply with the limits the BGP imposes on discharge to non-delegated POTWs.

Runoff that exceeds the acceptable limits will not be adequately treated by the POTWs and will still contain pollutants when it is discharged to surface or groundwater. Furthermore, the POTW may not even be aware of the pollutants passing through because the boatyard will not be required to conduct monitoring. For these reasons, BGP coverage should be terminated only if the permittee is discharging all stormwater runoff to a delegated POTW pursuant to another permit.

71. Comment – Bruce Wishart (oral comment, condensed)

The required conditions for Termination of Coverage allow termination even when discharges go to a non-delegated POTW.

Ecology Response (70 and 71)
Ecology agrees, and has addressed this inconsistency by adding the following.

S13.A.3	All discharges of stormwater runoff from areas with industrial activity have been eliminated because that stormwater runoff has been redirected to a sanitary sewer system operated by a municipality with a delegated pretreatment program, provided the Permittee has received a discharge authorization from the delegated municipality and authorization from all other applicable local sewerage authorities.

Additional References to the Fact Sheet

EnviroVision and Herrera Environmental Consultants. 2006. "Evaluation of Washington's Industrial Stormwater General Permit." Appendix I: Evaluation of Monitoring Data from General NPDES Permits for Industrial and Construction Stormwater. November 2006. http://www.ecy.wa.gov/programs/wq/stormwater/industrial/Evaliswgp.pdf [11]

Herrera Environmental Consultants. 2009. "Water Quality Risk Evaluation for Proposed Benchmarks/Action Levels in the Industrial Stormwater General Permit." Seattle. February 9, 2009. http://www.ecy.wa.gov/programs/wq/stormwater/industrial/workgroupdocs/analysisreportwqrisk.pdf [11]

Washington State Department of Ecology. 2008. "Industrial Stormwater Discharges to Impaired Water Bodies, Options for Numeric Effluent Limitations - Draft." Olympia, Washington. [2]