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Puget Sound Naval Shipyard (PSNS) and Intermediate Maintenance Facility (IMF)

EPA Comments regarding the State Waste Discharge Permit Number ST0007374.

Comment 1

Permit Provision:

Page 14. S3. Reporting and recording requirements

Comment:

The permit should require PSNS and IMF to notify the EPA and the State if the facility is discharging hazardous waste to the POTW as required under 40 CFR 403.12(p).

Comment 2

Permit Provision:

Page 17. d. Waiver of written reports

Ecology may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

Comment:

The EPA assumes that, a “timely oral report” refers to an oral report performed in accordance with the immediate reporting or twenty-four reporting requirements in Part S.3.F.2.a and b of the permit. However, this is not clear from the permit language. Please define “timely oral report” either directly or by referencing the appropriate oral reporting requirements.

Comment 3

Permit Provision:

Page 23. S5.A. General prohibitions

The Permittee must not introduce into the POTW pollutant(s), which cause pass through or interference.

The use of marine (salt water) for sources that discharge to the Bremerton sewer must be minimized to the maximum extent possible. By XX XX, 20XX, PSNS & IMF must limit the use of marine (salt) water for uses of water that discharge to the Bremerton sewer to the maximum extent possible through potable water use management measures that require little or no structural modifications to the shipyard infrastructure. Provisions to meet this requirement include using potable water on docked vessels that have the capability to connect to potable water for any water use that is discharged to sanitary sewer including, but not limited to toilet flushing, cleaning, and cooling water.

Comment:

The Fact Sheet indicates that the POTW has been experiencing interference due to marine (salt water) from PSNS. The permit conditions must comply with 40 CFR 403.5(c)2) which requires that the Control Authority develop local limits in cases where pollutants result in interference.

Comment 4

Permit Provision:

Page 24. S5.C. Prohibited unless approved

Any of the following discharges are prohibited unless approved by Ecology under extraordinary circumstances (such as a lack of direct discharge alternatives due to combined sewer service or a need to augment sewage flows due to septic conditions):

1. *Noncontact cooling water in significant volumes.*
2. *Storm water and other direct inflow sources.*
3. *Wastewaters significantly affecting system hydraulic loading, which do not require treatment or would not be afforded a significant degree of treatment by the system.*
4. *The discharge of dangerous wastes as defined in Chapter 173-303 WAC (Unless specifically authorized in this permit).*

Comment:

The permit should state that a user shall not introduce pollutant(s) that violate general and specific prohibitions or national pretreatment standards under 40 CFR 403.5. There are exceptions. They are identified under 40 CFR 403.5(a)(2) and 403.16. Also, the permit should define what is considered significant volumes. For example, would 25,000 gallons per day constitute significant volumes?

Comment 5

Permit Provision:

Page 25. S9. Non-routine and unanticipated discharges

4. However, temporary discharges with a volume of less than 1,000 gallons per day and which are evaluated and found not to be a dangerous waste, hazardous waste, or a categorical discharge as defined under 40 CFR Parts 403-699, and are determined not to contain pollutants in concentrations greater than the local limits, may be made without prior notice to the City of Bremerton and Ecology.

Comment:

The permit should define what constitutes “temporary discharges.” For example, would a daily discharge of 1,000 gallons per day be considered a temporary discharge or once a year or once a quarter. Please explain how the Control Authority (CA) evaluates the temporary discharges to determine if the wastewater meets all the requirements listed in this section.

The POTW and/or CA must comply with the requirements under 40 CFR 403.8(f)(2)(ii). The regulation requires the POTW to “Identify the character and volume of **pollutants** contributed to the POTW by the **Industrial Users**.” For example, if the facility is discharging contaminated wastewater with PFAS/PFOA, the CA is required to determine the volume and characteristic of the wastewater and/or require the IU to provide such information.

EPA Comments regarding the fact sheet of the State Waste Discharge Permit Number ST0007374.

Comment 6

Fact Sheet:

Page 2. The new permit requires PSNS & IMF to conduct a salinity study in order to propose a solution to mitigate saltwater interference with Bremerton’s WWTP and other infrastructures.

Comment:

A User may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference. If the POTW has been experiencing interference, the CA should consider developing local limits to address the Interference as defined under 40 CFR 403.5(c)(1-2) in addition to conducting a salinity study.

Comment 7

Fact Sheet:

Page 8. Many other minor sources of wastewater exist at the facility. Examples of these minor sources include photo-processing, grinding, valve cleaning, lagging tool cleaning, paint brush cleaning, hose cleaning, and braze flux flushing. In addition to the industrial discharges, the facility generates a large number of commercial/ large scale semi-domestic discharges including those from car washes, galleys, washing machines, and barracks heating boilers.

Comment:

The fact sheet should explain how the CA has evaluated and documented each process stream to determine if the wastewater is subject to pretreatment standards/requirements. For example, has the photo-processing activities and associated wastewater been evaluated against the effluent guidelines for Photographic Processing, 40 CFR 459?

Comment 8

Fact Sheet:

Page 20. The water passing through the OWTS is not subject to the Metal Finishing categorical standards of 40 CFR Part 403.

Comment:

The citation in the Fact Sheet is incorrect, the Metal Finishing Effluent Guidelines are set forth in 40 CFR 433 not 40 CFR 403.

Comment 9

Fact Sheet:

Page 20. The permit authorizes PSNS & IMF to analyze and submit the results for the purgeable (volatile) subset of the TTO's, as listed in EPA Method 624.1 (2016) Table 1, in lieu of results for all TTOs. Acrolein and acrylonitrile have been excluded from monitoring as these two compounds were not detected in the last thirty three volatile organic compounds (VOCs) sample results submitted by PSNS & IMF upon request. Moreover, PSNS & IMF stated that "acrolein reduces the sample holding time down to three days and acrylonitrile is a peroxide former that is difficult to waste out, typically requiring a contractor to stabilize the material."

Comment:

The Industrial User (IU) may request an alternative to TTO monitoring. The CA may waive TTO monitoring requirements only if the indirect discharge meets the requirements under 40 CFR 433.12.

Comment 10

Fact Sheet:

Page 21. In the 2011 permit, the daily flow limit for all six drydocks' PWCSs combined was 550,000 gpd (waste stream 99-DD16-002), which is allocated among the six drydocks. In a letter dated February 29, 2016, PSNS & IMF requested for the increase of the daily maximum flow for the combined drydock PWCS to 950,000 gpd. The reasoning was in the period from 2013 to 2015, there were 14 days annually during which the water had to be diverted to Sinclair Inlet because flow exceeded 550,000 gpd. PSNS & IMF projects that with the proposed increase to 950,000, it otherwise only may have to discharge PWCS water Sinclair Inlet twice per year.

Comment:

The increased flow to the POTW, nearly double the current limit, has the potential to impact the Bremerton WWTP. The fact sheet should explain how the CA has evaluated the potential flow impact(s), alone or in-conjunction with other discharges, to insure pretreatment standards and requirements are met. See 40 CFR 403.8(f)(v) and 40 CFR 403.8(f)(2)(i-v).

Comment 11

Fact Sheet:

Page 24. Segregation of Process Wastewater

Water from certain processes (for example, hull pressure washing, hydroblasting) occurring in the drydock, which are associated with high pollutant concentrations, is sent to the collection tank for treatment, even if it otherwise meets the turbidity set-point for direct discharge to the sanitary sewer.

Comment:

The fact sheet should document which industrial processes in the drydocks are categorical industrial processes subject to ESPS and NSPS under the EPA effluent guidelines.

Comment 12

Fact Sheet:

Page 26. Table 10. Listing of additional discharges and their associated flows as authorized under proposed permit for Puget Sound Naval Shipyard

Comment:

If the PSNS and/or IMF is discharging any hazardous wastewater to the POTW from any sources listed in Table 10, it must comply with the requirement to notify the POTW, State and the EPA in accordance with 40 CFR 403.12(p).

Comment 13

Fact Sheet:

Page 59. The discharges from the cooling towers are not subject to permit discharge limits for molybdenum, copper, and zinc.

Comment:

Please explain why the discharges from cooling towers are not subject to permit discharge limits for molybdenum, copper, zinc or local limits.

Comment 14

Fact Sheet:

Page 62. AFFF with halogenated organic carbon (HOC) content less than 100 ppm. For calculating HOC, see the persistent dangerous waste table at the bottom of WAC 173-303-100. Ecology has not proposed monitoring requirements or flow limits for the WISP discharges in the proposed permit.

Comment:

The fact sheet should explain potential sources of PFAS/PFOA from PSNS and IMF. Ideally, this information should come from the facility. The CA is obligated to determine the characteristics and volume of pollutants that are discharged to the POTW per 40 CFR 403.8(f)(2)(i-iii).

The EPA has a web page that summarizes the status of SW 846 Method 8327. This includes a link to the draft method for PFAS:

<https://www.epa.gov/hw-sw846/validated-test-method-8327-and-polyfluoroalkyl-substances-pfas-using-external-standard>

Comment 15

Fact Sheet:

Page 67. Table 25. Effluent and reporting violations in the previous permit cycle

Parameter Type	Max Limit	Measurement Value Quantity	Monitoring Period Begin Date	Monitoring Point Code ^a	Violation
Flow	550000	560000	2/1/2014	16	Numeric effluent violation
Flow	550000	553000	3/1/2014	16	Numeric effluent violation
Copper	3.2	None	5/1/2014	4	Analysis not Conducted
Nickel	1.95	None	5/1/2014	4	Analysis not Conducted
Zinc	4	None	5/1/2014	4	Analysis not Conducted
Petroleum Hydrocarbons	50	87	8/1/2015	107	Numeric effluent violation
pH (Hydrogen Ion)	11	None	11/1/2015	76	Analysis not Conducted
Copper	3.2	None	3/1/2016	3	Analysis not Conducted
Nickel	1.95	None	3/1/2016	3	Analysis not Conducted
Zinc	4	None	3/1/2016	3	Analysis not Conducted
pH (Hydrogen Ion)	11	None	1/1/2017	76	Analysis not Conducted

^a These Ecology assigned monitoring codes are associated with the new permit. Navy designated discharge codes are unchanged. For cross reference, refer to Table 1.

Comment:

Please explain why the “analysis not conducted.” Also, do the data include any violations that were the result of independent sampling and analysis of the facility by the POTW and/or control authority. See 40 CFR 403.8(f)(v) and 40 CFR 403.8(f)(2)(i-v).

Comment 16

Fact Sheet:

Page 71. These limits were adopted in the City of Bremerton’s Municipal Code, Chapter 15.03 BMC, on August 8, 2019. Ecology calculated local limits for the City of Bremerton WWTP using data supplied to Ecology by Bremerton and PSNS&IMF and certain literature values where local data wasn’t available. The calculated local limits were generally consistent with those from the 2011 permit. The method Ecology used to develop the local limits is discussed in detail in Appendix D of this fact sheet. Ecology applied these local limits to the industrial discharges at the “end of process” prior to mixing with other flows whereas the local limits established by Bremerton apply to all wastewater flows from the plant and are applied at the “end of pipe” which is the lift stations.

Comment:

The fact sheet should explain how Ecology developed the current and/or proposed local limits. For categorical processes at PSNS and IMF, the fact sheet should explain if the Combined Wastestream Formula was used to calculate local limits and account for dilution from different waste streams (both categorical and non-categorical). See 40 CFR 403.6(e).

Comment 17

Fact Sheet:

Page 72. *Salinity issues at the Bremerton WWTP*

The City of Bremerton submitted extensive conductivity data showing that the discharges from PSNS exhibit high variability with up to 4200 spikes per month exceeding 6 mS/cm on a 5-minute average basis. Bremerton has adopted a conductivity limit, which is a continuous average of 6.0 mS/cm for any thirty day period. Seawater typically exhibits a conductivity of 50 mS/cm and drinking water ranges from 0.05 to 0.5 mS/cm. There is a direct correlation between conductivity and salinity. Salinity is an estimate of the level of salt in a water sample and it is derived from the conductivity reading using a conversion factor (usually 0.5) which is dependent on temperature. The main issues concerning the Bremerton WWTP and the city's infrastructure, as a result of discharge of wastewater with high salt concentration, are listed below.

1. *Elevated salinity concentrations have the effect of reducing dissolved oxygen solubility at equilibrium. Bremerton first requested technical assistance from Ecology in April 2015 when the city's westside WWTP had shown high effluent biochemical oxygen demand (BOD₅) fluctuations for the previous six months. Bremerton was unable to meet its 30 mg/L effluent limit for BOD₅. In the summer of 2015, Ecology conducted a partial inspection of PSNS's discharge practices and investigated the causes of the high BOD₅ that was experienced by Bremerton. One of the main findings of the investigation was that BOD₅ analysis conducted by Bremerton showed higher estimated BOD₅ values for more dilute sample preparations than the less dilute samples after serial dilutions. This indicated that there was a matrix interference with the analytical method. However, a review of the existing sample split analytical results at that time showed discrepancies in BOD₅ measurements between laboratories. Bremerton's results were significantly higher than those of the PSNS contractor or Ecology's Manchester laboratory results. Ecology recommended Bremerton and PSNS to resolve this discrepancy before further evaluation of possible interferences can occur.*

Ecology subsequently required Bremerton to monitor for carbonaceous BOD (CBOD) instead of BOD₅, with a CBOD₅ limit of 25 mg/L. The city has been able to meet the CBOD₅ limit in its effluent but has informed Ecology that it would still be unable to meet a BOD₅ limit of 30 mg/L consistently.

Bremerton stated that PSNS instituted some major changes in using more of Sinclair Inlet water rather than the city's tap water in its operations which resulted in salinity spikes and fluctuations thereby interfering with Bremerton's WWTP and causing the city to violate its permit limits.

Nutrients, nitrification/denitrification process impacts – Wastewater treatment plants are the largest source of human-caused nutrients to Puget Sound. Water is treated before discharged into the Sound, but nutrient removal is not part of the typical treatment process.

Ecology is working collaboratively with Puget Sound stakeholders through the [Puget Sound Nutrient Source Reduction Project](#) and [Puget Sound Nutrient Forum](#) to find solutions for reducing excess nutrients. Bremerton has raised concerns that if new requirements are put in its NPDES permit or in the form of a general permit for nutrient removal, the high conductivity influent water may potentially hamper any efforts to meet any future effluent requirements for nutrients. However, there is no empirical data at the present to support this concern.

2. *Bremerton has also reported to Ecology in various occasions that it has had to rebuild the pumps carrying PSNS wastewater frequently due to corrosion. Bremerton said that due to the damage being caused by the saltwater, all three pumps at WB-3 have to be retrofitted and converted to external closed loop cooling system for the pump station. Pump cooling in this case is affected by the high conductivity as the three pumps use sewage to also cool the pump, instead of using a glycol solution. This is a standard method of cooling for a Fairbanks-Morse dry-pit submersible pump, which Bremerton uses. These are the three large pumps that are located at the city's pump station WB-3, which receives all of the PSNS industrial flows.*

According to Rick Zimburean, Maintenance Supervisor, all of this has cost the Bremerton tax payers more than \$202,000 and Bremerton still needs to have the last large pump pulled and sent in for repair and conversion, with the first two averaging \$41,200 each. The plots below were provided by the City of Bremerton. These graphs show that the annual water use by PSNS ranged between 2 MGD to 3 MGD up to about 2012 and then a sharp decline is observed which has not turned upwards to the previous normal levels. Average water use from all other customers appears steady from 2006 onwards. The plot below shows that sewer use at PSNS increased from 2010 onwards. This discrepancy or water imbalance is what Bremerton argues to be coming from Sinclair Inlet salty water, supplied to vessels and flushing water in ships docked for service and barges.

Comment:

The Bremerton WWTP has been experiencing interference due to salt water from PSNS & IMF. The CA should develop local limits to address the problem in accordance to 40 CFR 403.5(c).

Comment 18

Fact Sheet:

Page 79. The proposed permit requires PSNS to conduct a study to identify major sources of saltwater that is discharged to the sanitary sewer and to propose remedies to reduce saltwater discharges so that PSNS can meet Bremerton's conductivity local limits on a consistent basis. The study is to be completed within one year of permit effective date.

Comment:

The CA should conduct a local limit study in addition to conducting a study to identify the major sources of saltwater to address the interference at the Bremerton WWTP. In addition, the fact sheet should lay out the remedies necessary to ensure compliance with pretreatment standards and requirements in accordance to 40 CFR 403.8(f)(1)(B)(vi)(A-B).

Comment 19

Fact Sheet:

Page 82. IV. Monitoring Requirements

Comment:

There is no discussion that Ecology, as the Control Authority, will independently inspect and sample the facility at least once a year as required under 40 CFR 403.9(f)(v) and 40 CFR 403.8(f)(2)(v). The fact sheet should explain how it intends to comply this pretreatment provision.