

Fact Sheet for State Waste Discharge Permit ST0007353

Naval Undersea Warfare Center Division, Keyport

Permit Effective Date: April 1, 2025

Purpose of this fact sheet

This fact sheet explains and documents the decisions the Department of Ecology (Ecology) made in drafting the proposed State Waste Discharge (SWD) permit for Naval Undersea Warfare Center Division, Keyport (NUWC Keyport).

State law requires any industrial wastewater facility to obtain a permit before discharging waste or chemicals to municipal sanitary sewer collection and treatment systems.

The permit issuance has no increases in volume or changes in characteristics of the discharge beyond those previously authorized. Therefore, in accordance with WAC 173-216-090(5), Ecology will not hold a public notice of draft for this proposed permit.

NUWC Keyport reviewed the draft permit and fact sheet for factual accuracy. Ecology corrected any errors or omissions regarding the facility's location, history, product type or production rate, discharges, or receiving water prior to publishing this draft fact sheet for public notice.

Summary

NUWC Keyport performs testing and evaluation, engineering assembly, maintenance, repair, fleet services, and industrial base support for undersea warfare systems.

Proposed changes to the permit include,

- Removing the propylene glycol dinitrate (PGDN) limit and monitoring from sample point (SP) 01 and adding a PGDN benchmark at SP02.
- Adding local limits and monitoring at SP03.
- Requiring PFAS monitoring at SP03 and a source identification report.
- Adding new or updating minor industrial sources in Appendix B.

This permit rennumbers existing sample points due to changes at the site. The discharge and sample point for the Otto Fuel Reclamation System is being renumbered to SP02 (previously SP03). The final overall discharge and sample point from the site at the manhole outside Building 94 is being renumbered to SP03 (previously SP02).

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I. Introduction

The Washington State Legislature defined Ecology's authority and obligations for the wastewater discharge permit program in 90.48 RCW (Revised Code of Washington).

The following regulations in the Washington Administrative Code (WAC) apply to industrial wastewater discharge to publicly or privately owned wastewater treatment plants:

- State waste discharge permit program (chapter 173-216 WAC)
- Submission of plans and reports for construction of wastewater facilities (chapter 173-240 WAC)

These rules require any industrial facility owner/operator to obtain a State Waste Discharge (SWD) permit before discharging wastewater to state waters. This includes commercial or industrial discharges to sewerage systems operated by municipalities or public entities which discharge into public waters of the state. They also help define the basis for limits on each discharge and for performance requirements imposed by the permit.

Ecology prepared the draft permit and accompanying fact sheet.

II. Background Information

Table 1 - Facility information

Facility Information	
Applicant name and address	Naval Undersea Warfare Center Division, Keyport 610 Dowell St, Building 206 Keyport, WA 98345
Facility name and address	Naval Undersea Warfare Center Division, Keyport 610 Dowell St, Building 825 Keyport, WA 98345
Contacts at facility	Kenneth Eiford Environmental Engineer Telephone #: 360-315-8571 Email: kenneth.l.eiford.civ@us.navy.mil Terrance Hiatt Environmental Compliance Branch Head Email: terrance.d.hiatt.civ@us.navy.mil
Responsible official	Captain Clinton Hoskins Commanding Officer
Industrial user type	Categorical Industrial User
Industry type	Naval base, metal finishing
Categorical industry	40 CFR Part 433 (applies to IWTP; SP01)

Facility Information	
Type of treatment by industry	Chemically aided metal precipitation, oil water separation, granular activated carbon
SIC codes	3479, 9711
NAIC codes	332813, 982110
Facility location (NAD83/WGS84 reference datum)	Latitude: 47.701 Longitude: -122.614
Treatment plant receiving discharge	Central Kitsap wastewater treatment plant NPDES Permit No. WA0030520
Discharge location of receiving treatment plant (NAD83/WGS84 reference datum)	Port Orchard Bay - Puget Sound Latitude: 47.6464 Longitude: -122.6014

Permit status

Issuance date of previous permit: June 26, 2018

Issuance date of modified permit: July 27, 2021

Application for permit renewal submittal date: April 24, 2023

Date of Ecology acceptance of application: May 22, 2023

Inspection status

Date of last inspection: April 4, 2023

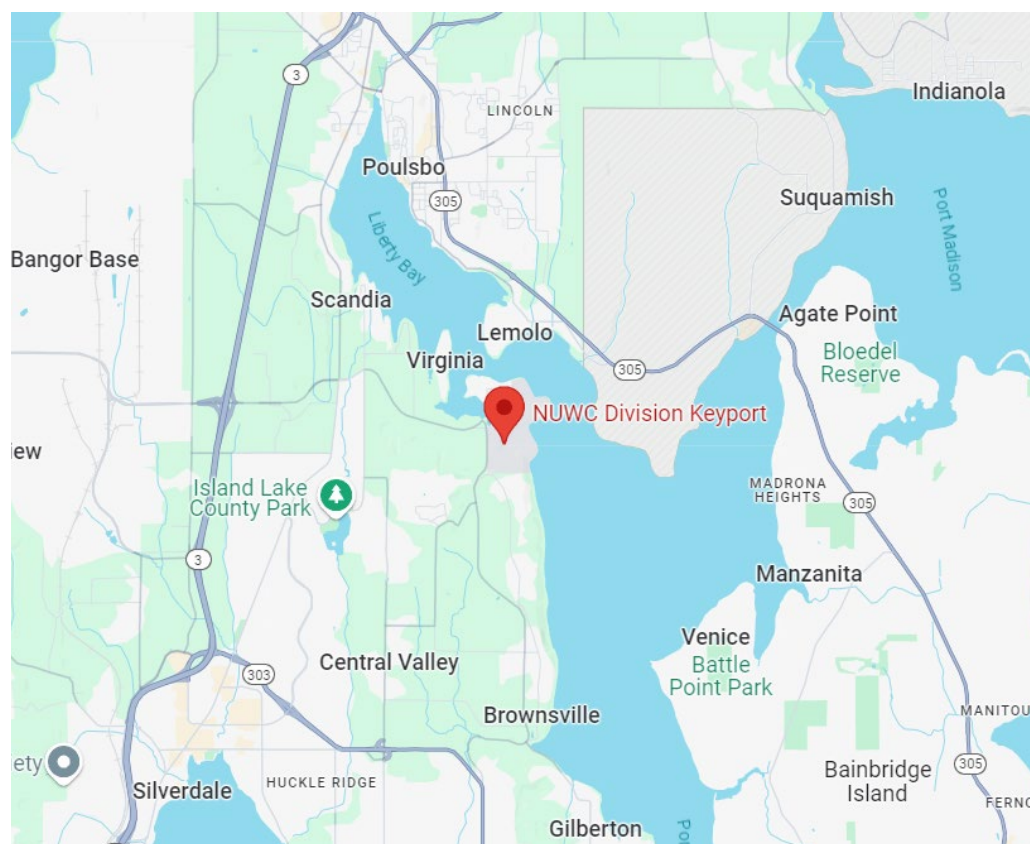


Figure 1 - NUWC Keyport location (Google maps)

II.A. Facility description

1. History

The Naval Undersea Warfare Center Division, Keyport (NUWC-Keyport) performs testing and evaluation, engineering, assembly, maintenance and repair, and fleet and industrial base support for undersea warfare systems, countermeasures, and sonar systems.

The 340-acre facility has numerous industrial buildings, 21 single family housing units, a barracks, and supporting utility systems and facilities. General industrial activities include metal working, metal finishing, machining, electrical assembly, electronic and mechanical systems maintenance and repair, painting, undersea systems teardown and refurbishment, components testing, and Naval vessel operation and maintenance. NUWC Keyport support activities include utility shops, chemistry and non-destructive test laboratories, and a hazardous waste Treatment, Storage, and Disposal Facility (TSDF).

2. Industrial processes

NUWC Keyport has 34 industrial wastestreams that discharge to the sanitary sewer. The following 5 industrial process descriptions cover the wastestreams that require pretreatment prior to discharge. The remaining 29 wastestreams are

outlined in Appendix D Table 9. NUWC Keyport identifies wastestreams using a number ID system which is carried over into this fact sheet.

Appendix D Figure 2 includes an industrial waste stream flowchart. NUWC Keyport estimates potable water use at about 67,000 gallons per day (gpd). Sewer discharge to the Central Kitsap wastewater treatment plant (WWTP) is estimated at 79,000 gpd. NUWC Keyport identifies that there is groundwater and stormwater infiltration and inflow into the sanitary sewer on site.

Wastestream 38-1 deburring wastewater

Building 38 contains two deburring machines that discharge wastewater with low metals levels into a collection sump which is ultimately pumped to the industrial wastewater treatment plant (IWTP). It is estimated that this wastestream is less than 20 gallons per year.

Wastestream 82-3 battery fluid wastewater

Wet cell batteries are washed down, recharged, and reissued at a maintenance shop in Building 82. Liquid potassium hydroxide solution from expired batteries and wash water from recycled batteries is collected in a 330-gallon portable tank. The tank is transported to the IWTP for treatment. It is estimated that this wastestream is about 2,100 gallons per year.

Wastestream 84-1 torpedo shell repair wastewater

Torpedo shell repair occurs in Building 84. Wastewater is generated from aluminum surface preparation and chromium conversion coating. The wastestream is primarily rinse water with small amounts of phosphoric acid and chromic acid. The rinse water is transported in 5-gallon containers to the IWTP for treatment. The use of hexavalent chromium conversion coating is being phased out in favor of a non-hexavalent chromium conversion coating. Additionally, the use of pen application has reduced the volume of rinsewater generated. It is estimated that this wastestream is less than 20 gallons per year.

Wastestream 1058-1 plating wastewater

Metal anodizing and metal coating operations are conducted in Building 1058. The anodizing process for aluminum includes standard and hard-coat anodizing employing sulfuric acid solutions. The coating and sealing processes include chromate conversion coating, applications of dye, and sealing solutions. It is estimated that this wastestream is about 11,000 gallons per batch discharge.

Wastestream 514-1 Otto fuel reclamation wastewater

The Otto fuel reclamation system is described further in Section II.A.3 below. Wastewater is predominantly seawater.

3. Wastewater pretreatment

There are two industrial treatment systems at NUWC Keyport.

Building 825 Industrial Wastewater Treatment Plant (IWTP)

The IWTP is located in Building 825. Metal-bearing wastewaters and hexavalent chromium-bearing wastewaters are treated at the IWTP. Most wastewater comes from Building 1058, the regional metal finishing facility via wastestream 1058-1. Other routine sources of wastewater processed at the IWTP come from wastestreams 38-1, 82-3, and 84-1.

A tank yard outside Building 825 contains the tanks for treatment and storage of the wastewater. Rainwater is introduced into the wastewater as it accumulates within the outdoor tanks and containment. A schematic of the wastewater treatment system is available in Appendix D Figure 3.

The primary wastestreams entering the IWTP are acidic metal-bearing wastewater. Treatment is predominantly metal precipitation and reducing hexavalent chromium to the trivalent form using sulfuric acid, ferrous sulfate, sodium sulfide, or sodium hydroxide. Following metal precipitation, the pH of the wastewater is adjusted in an intermediate tank. Then, sludge is settled out in a clarifier dosed with cationic polymer to aid in settling. Treated (clear) water is filtered in two parallel sand filters prior to storage in one of two treated (clear) water storage tanks. Wastewater is sampled and verified to meet permit limits prior to discharging to the sewer. Sludge is dewatered in a sludge press prior to transfer to the TSDF.

The IWTP is also equipped with caustic wastewater storage tanks and a cyanide destruction reaction vessel. The only caustic wastestream on base is associated with the Otto Fuel Reclamation System (OFRS), but this now has its own separate treatment system. There is no cyanide-bearing wastestreams on base. This part of the treatment system is not in use.

The IWTP was originally designed and built to treat the wastewater from the extensive metal plating shop. The design capacity of the IWTP is 144,000 gallons per day (gpd). However, due to the reduction in metal finishing operations, centralization of metal finishing at Puget Sound Naval Shipyard, and new OFRS, there has been a significant reduction in wastewater treated and discharged from the IWTP. The IWTP performs wastewater treatment on a batch basis, resulting in an average discharge of about 35,000 gpd on days that a batch is treated and discharged. However, due to the reduced scale in metal finishing operations conducted at this time, only one to two discharges have been performed annually. NUWC Keyport anticipates a 35,000 gallon batch maximum discharge frequency of every 3-6 months moving forward.

The discharge from the IWTP is designated in this permit as sample point Sample Point (SP) 001.

Building 514 Otto Fuel Reclamation System (OFRS)

The OFRS is designed to extract reusable otto fuel II from undersea vehicles after they have been run and returned for maintenance. The primary component of otto fuel II is propylene glycol dinitrate (PGDN). The reclamation system pumps a mixture of seawater and otto fuel II from the weapon into a separation tank. The reclaimed otto fuel is transferred to a storage tank and the wastewater is pumped through a series of two activated carbon filter columns to remove any traces of contaminants that may still be present. Similar to the IWTP, treated wastewater is sampled and verified to meet permit limits prior to discharging to the sewer. This new treatment system was operational beginning in June 2024. A schematic of the OFRS is in Appendix D Figure 4.

The discharge from the OFRS is designated in this permit as SP02 (SP03 in previous permit).

4. Solid wastes

Dewatered sludge from the IWTP is the only solid waste generated in the treatment processes. Sludge is packed in 55-gallon drums and sent to the TSDF for disposal.

5. Per- and polyfluoroalkyl substances (PFAS)

Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products because of their resistance to water, oil, grease, and heat. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. PFAS above certain levels may cause adverse effects to human health or aquatic life.

Certain industry types are known or suspected to use PFAS actively or historically in their operations. PFAS-contaminated wastewater from these industries may be discharged to POTWs. Most publicly owned treatment works (POTWs) do not use technologies that can remove PFAS from the effluent. PFAS chemicals pass through the POTW and end up in either the effluent or biosolids. NUWC Keyport has conducted chromium-containing metal finishing, has stored and used PFAS-containing aqueous film forming foam (fire fighting foam), and has several identified areas of PFAS contamination on the base.

Ecology began work in 2016 in collaboration with the Department of Health to develop a Chemical Action Plan (CAP) to prevent potential exposure to people and the environment from PFAS. Ecology issued an interim CAP in 2018 and a final version in 2021. In September 2022, Ecology published a revised PFAS

CAP that included recommendations related to wastewater treatment (Ecology, 2022). In a separate action, EPA issued guidance in December 2022 that recommended strategies permitting authorities should use to monitor and control discharges of PFAS at their sources (EPA, 2022). As a suspected source and consistent with the 2022 revised CAP recommendations and EPA guidance, the proposed permit includes PFAS monitoring and source identification.

II.B. Discharge location to Central Kitsap wastewater treatment plant

All wastewater, including industrial and domestic, is discharged to the Kitsap County sewer system at a manhole outside of Building 94. This overall discharge point is designated as SP03 (SP02 in previous permit). This sample point is established to ensure that minor waste discharges, those identified in Appendix D Table 2, do not result in an exceedance of local discharge limitations.

Kitsap County owns and operates the Central Kitsap WWTP. The Central Kitsap WWTP is designed to accommodate a maximum monthly average flow of 6.0 million gallons per day. The treatment system is an activated sludge system that was expanded and modified to provide biological nitrogen removal. Disinfection is through an ultraviolet light system. Treated wastewater is discharged to Port Orchard Bay, Puget Sound.

II.C. Wastewater characterization

NUWC Keyport reported the concentration of pollutants in the discharge in the permit application and discharge monitoring reports. The tabulated data represents the quality of the wastewater discharged from July 2018 through June 2024.

Table 2 - IWTP wastewater characterization (SP01)

Parameter	Units	# of Samples	Average Value	Maximum Value
Cadmium, total	mg/L	13	0.066	0.105
Chromium, total	mg/L	13	0.101	0.21
Copper, total	mg/L	13	0.120	0.49
Cyanide, total	mg/L	13	Non detect; 0.2	Non detect; 0.2
Lead, total	mg/L	13	0.056	0.10
Nickel, total	mg/L	13	0.172	0.23
Silver, total	mg/L	13	0.048	0.1
Zinc, total	mg/L	13	0.09	0.15
PGDN	mg/L	12	Non detect; 0.05	Non detect; 0.05
Parameter	Units	# of Samples	Minimum Value	Maximum Value
pH	standard units	13	6.8	8.6

Table 3 - Building 94 manhole final wastewater characterization (SP03)

Parameter	Units	# of Samples	Average Value	Maximum Value
Ammonia	mg/L	72	38	67
Chromium, total	mg/L	24	0.046	0.1
Copper, total	mg/L	24	0.13	0.92
Lead, total	mg/L	24	0.051	0.1
Mercury	mg/L	24	Non detect; 0.0002	Non detect; 0.0005
Oil and grease	mg/L	72	17	68
Total suspended solids	mg/L	72	206	439
Zinc, total	mg/L	24	0.21	0.53

NUWC Keyport submitted a permit modification request to Ecology in May 2021 to add a sample point for the new Otto Fuel II reclamation system (OFRS). Ecology processed this request as a permit modification in July 2021. In the request, NUWC Keyport submitted data for untreated OFRS wastewater to show metals content. The following characterization data is of untreated OFRS wastewater.

Table 4 - Untreated OFRS wastewater characterization

Parameter	Units	# of Samples	Average Value	Maximum Value
Total suspended solids	mg/L	2	48.5	85
Arsenic	mg/L	2	0.0082	0.012
Cadmium, total	mg/L	3	0.015	0.026
Chromium, total	mg/L	3	0.0033	0.0078
Copper, total	mg/L	3	0.29	0.72
Lead, total	mg/L	3	0.0041	0.0053
Mercury	mg/L	2	Non detect; 0.00003	Non detect; 0.00003
Molybdenum	mg/L	2	0.0047	0.0054
Nickel, total	mg/L	3	0.0062	0.0098
Selenium	mg/L	2	Non detect; 0.007	Non detect; 0.007
Silver, total	mg/L	3	Non detect; 0.0003	Non detect; 0.0011
Cyanide	mg/L	2	Non detect; 0.01	Non detect; 0.01
Total toxic organics	mg/L	1	Non detect; 0.01	Non detect; 0.01

II.D. Summary of compliance with the previous permit

NUWC Keyport has complied with the effluent limits and permit conditions throughout the duration of the permit issued on June 26, 2018 with the exceptions listed below. Ecology assessed compliance based on its review of the facility's information in the Ecology Permitting and Reporting Information System (PARIS), discharge monitoring reports (DMRs) and on inspections.

The August 2018 monthly DMR, due on 9/28/2018, was submitted 19 days late. Ecology took no action on this violation as this was an isolated event and submittals had historically been received by the due date.

On August 4, 2020, NUWC Keyport final discharge to the Kitsap County sewer system at SP02 (now SP03) violated the maximum daily copper effluent limit of 0.75 mg/L. The copper measurement in the discharge was 0.92 mg/L. NUWC Keyport took another sample on August 25, 2020, with results of 0.11 mg/L, showing the discharge was back in compliance. Ecology took no action on this violation since it was an isolated incident and NUWC Keyport conducted appropriate reporting and follow up actions.

II.E. State environmental policy act (SEPA) compliance

State law exempts the issuance, reissuance, or modification of any wastewater discharge permit from the 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). The exemption applies only to existing discharges, not to new discharges. NUWC Keyport is an existing discharge.

III. Proposed Permit Limits

State regulations require that Ecology base limits in a State Waste Discharge permit on the:

- Technology and treatment methods available to treat specific pollutants (technology-based). Technology-based limits are set by the EPA and published as a regulation (40 CFR 400-471), or Ecology develops limits on a case-by-case basis (40 CFR 125.3, and RCW 90.48). Dischargers must treat wastewater using all known, available, reasonable methods of prevention, control, and treatment (AKART).
- Effects of the pollutants on the publicly owned treatment works (POTW). Wastewater must not interfere with the operation of the POTW. Ecology considers local limits in developing permit limits.
- Applicable requirements of other local, state, and federal laws.

Ecology applies the most stringent applicable limits to each parameter of concern. These limits are described below.

The limits in this permit reflect information received in the application and from supporting engineering and monitoring reports. Ecology evaluated the permit application and determined the limits needed to comply with the rules adopted by the state of Washington. Ecology does not develop effluent limits for all reported pollutants. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, or are not listed in regulation.

Ecology does not usually develop limits for pollutants not reported in the permit application that may be present in the discharge. The permit does not authorize discharge of the non-reported pollutants. During the permit term, the facility's effluent

discharge conditions may change from those conditions reported in the permit application. The facility must notify Ecology if significant changes occur in any constituent. Until Ecology modifies the permit to reflect additional discharge of pollutants, a permitted facility could be violating its permit.

III.A. Technology-based effluent limits

Waste discharge permits issued by Ecology specify conditions requiring the facility to use all known available and reasonable methods of prevention, control, and treatment of discharges AKART before discharging to waters of the state (RCW 90.48).

Existing federal categorical limits for this facility are found under 40 CFR Part 433.15 which are the metal finishing pretreatment standards for existing sources. These limits apply to the effluent from the IWTP (SP01) that predominantly treats wastewater from metal finishing operations.

The state waste discharge permit regulations include restrictions and prohibitions to protect publicly owned sewerage systems. A facility may not discharge any wastewater having a pH less than 5.0 or greater than 11.0 or having any other corrosive property capable of causing damage or hazard to structures, equipment, or personnel unless the system is specifically designed to accommodate such discharge, and the discharge is authorized by a permit (WAC 173-216-060).

Federal regulations (40 CFR 403.5b) also prohibit the discharge of pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the collection and treatment system is designed to accommodate such discharges.

In the previous permits, Ecology implemented a performance-based limit for propylene glycol di-nitrate (PGDN) which is the primary component of Otto Fuel II. Otto Fuel II is composed of a number of additional components, so the practical way to quantify fuel in wastewater is by quantitative analysis of PGDN. The performance-based limit for Otto Fuel II wastewater treatment is 0.2 mg/L PGDN. Monitoring reports show that the PGDN concentration has been consistently below 0.05 mg/L. As of June 2024, NUWC Keyport put online the new Otto Fuel II reclamation system (OFRS), which is predominantly similar to the old system at the IWTP. Due to the lack of a 40 CFR Part 136-approved analytical method for PGDN (40 CFR Part 403.12(h)), Ecology proposes a PGDN performance-based benchmark in the proposed permit for SP02. The value is consistent with the previous permit, but the benchmark requires corrective action upon exceedance. Ecology will reevaluate this performance-based benchmark at the next permit reissuance.

The following permit limits are necessary to satisfy the requirement for AKART:

Table 5 - 40 CFR 433.15 technology-based effluent limits for the IWTP effluent (SP01)

Parameter	Units	Monthly average	Daily maximum
Cadmium, total	mg/L	0.26	0.69
Chromium, total	mg/L	1.71	2.77
Copper, total	mg/L	2.07	3.38
Lead, total	mg/L	0.43	0.69
Nickel, total	mg/L	2.38	3.98
Silver, total	mg/L	0.24	0.43
Zinc, total	mg/L	1.48	2.61
Cyanide, total	mg/L	0.65	1.20
Total toxic organics	mg/L	N/A	2.13

Table 6 - Performance-based benchmark for the OFRS effluent (SP02)

Parameter	Units	Daily maximum
PGDN	mg/L	0.2

III.B. Effluent limits based on local limits

To protect the Central Kitsap wastewater treatment plant from pass-through, interference, concentrations of toxic chemicals that would impair beneficial or designated uses of sludge, or potentially hazardous exposure levels, Ecology believes it necessary to impose limits for certain parameters. Ecology based these limits on local limits established by Kitsap County in municipal code chapter 13.12.160 (ordinance 300, 2003). Ecology's pretreatment program delegation agreement with EPA includes language in which Ecology agreed to enforce limits adopted by non-delegated programs (local limits). As done in previous permits, Ecology proposes to implement applicable local limits at the final discharge point of all NUWC Keyport sewer flows to the Kitsap County sewer system through the manhole at Building 94, designated as SP03.

Table 7 - Kitsap County local limits

Parameter	Units	Daily maximum
BOD ₅	mg/L	300
TSS	mg/L	350
Fats, oils, and grease (oil and grease)	mg/L	100
Arsenic	mg/L	0.15
Cadmium	mg/L	0.10
Chromium	mg/L	1.0
Copper	mg/L	0.75
Lead	mg/L	0.25
Mercury	mg/L	0.010
Molybdenum	mg/L	2.0
Nickel	mg/L	0.60

Parameter	Units	Daily maximum
Selenium	mg/L	0.80
Silver	mg/L	0.50
Zinc	mg/L	2.0
Cyanide	mg/L	0.75
Ammonia	mg/L	50.0

Parameter	Daily minimum	Daily maximum
pH	6.0 standard units	9.0 standard units

Ecology discussed the application of the ammonia, TSS, and BOD₅ local limits with Kitsap County personnel while drafting this permit. Kitsap County personnel stated in the past decade NUWC Keyport has implemented water conservation methods. Therefore, although the ammonia concentration has increased slightly, the overall ammonia load to the Central Kitsap WWTP from NUWC Keyport has remained the same due to the lower flow volumes. Additionally, the majority of the ammonia load from NUWC Keyport is from domestic/residential sources on the base. This rationale is similar for BOD₅. TSS concentrations at SP03 are generally well below the 350 mg/L local limit, with only a few exceedances generally during the summer months. Kitsap County personnel did not have concern with TSS levels from NUWC Keyport. Therefore, Ecology is not proposing to include the ammonia, TSS, or BOD₅ local limits in the permit. Monitoring will be required for ammonia and TSS. BOD₅ monitoring is not necessary for this site.

Ecology historically included local limits at the final discharge point for chromium, copper, lead, mercury, zinc, and oil and grease in the permit. Ecology is proposing to include the remaining local limit parameters in the permit with limited characterization monitoring to establish a baseline. Ecology will reevaluate the implementation of the limits and ongoing monitoring during the next permit reissuance.

III.C. Comparison of effluent limits with the previous permit modified on July 27, 2021

The previous permit indicated the final discharge point as SP02 and the new OFRS as SP03. Ecology switched these identifiers in this permit to indicate the final discharge point as the last sample point.

Ecology removed the IWTP flow limit applied in the previous permit to SP01. Instead, Ecology is implementing a combined flow limit of 49,999 gpd for SP01 and SP02 based on information provided in the permit application.

Other than the change in the flow limit for SP01, all other parameters and limits remain the same for SP01.

Due to the completion of the new OFRS, Ecology moved the PGDN effluent limit from SP01 and reclassified it as a PGDN benchmark at SP02.

Table 8 - Comparison of previous and proposed final discharge effluent limits: SP03

Limit ^a	Units	Existing permit limit ^b	Proposed permit limit ^b
Oil and grease	mg/L	100	100
Arsenic	mg/L	N/A	0.15
Cadmium	mg/L	N/A	0.10
Chromium	mg/L	1.0	1.0
Copper	mg/L	0.75	0.75
Lead	mg/L	0.25	0.25
Mercury	mg/L	0.01	0.01
Molybdenum	mg/L	N/A	2.0
Nickel	mg/L	N/A	0.60
Selenium	mg/L	N/A	0.80
Silver	mg/L	N/A	0.50
Zinc	mg/L	2.0	2.0
Cyanide	mg/L	N/A	0.75
pH	standard units	N/A	6.0-9.0

Footnotes:

^a All limits applied to SP03 are Kitsap County local limits.

^b Existing and proposed permit limits are all maximum daily limits.

IV. Monitoring Requirements

Ecology requires monitoring, recording, and reporting (WAC 173-216-110) to verify that the treatment process is functioning correctly, and that the discharge complies with the permit's effluent limits.

If a facility uses a contract laboratory to monitor wastewater, it must ensure that the laboratory uses the methods and meets or exceeds the method detection levels required by the permit. The permit describes when facilities may use alternative methods. It also describes what to do in certain situations when the laboratory encounters matrix effects. When a facility uses an alternative method as allowed by the permit, it must report the test method, detection level (DL), and quantitation level (QL) on the discharge monitoring report or in the required report.

The monitoring schedule is detailed in the proposed permit under Special Condition S.2. Specified monitoring frequencies consider the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Ecology has maintained the same monitoring frequency for the IWTP (SP01) and OFRS (SP02) discharges. Additional monitoring has been added for the final discharge point from the base (SP03) to evaluate compliance with Kitsap County local limits. Ecology will reevaluate the need for ongoing monitoring of local limit parameters at SP03 during the next permit renewal based on monitoring data.

There is no approved analytical method for PGDN. Therefore, NUWC Keyport utilizes a proprietary method to test for the presence of PGDN in wastewater. NUWC Keyport has provided the standard operating procedure for Otto Fuel (as PGDN) to Ecology for review (Keyport, 1023C-7: Otto Fuel (as PGDN) by Electron Capture Detector (ECD)). The method is applicable to the quantitative determination of PGDN in aqueous waste. The minimum reporting level is 0.05 mg/L.

Ecology proposed PFAS monitoring at SP03. The purpose of this monitoring is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of effluent limits and source reduction opportunities.

There is currently no analytical method approved for PFAS in 40 CFR Part 136. As stated in 40 CFR 122.44(i)(1)(iv)(B), in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring must be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters. Therefore, the permit specifies that until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring must be conducted using Method 1633. This requirement is in alignment with EPA's guidance on how to address PFAS in NPDES and pretreatment permitting. Additionally, Ecology included the authorization to initially screen for organic fluorine using EPA Method 1621. If results show organic fluorine is detected (i.e. above the detection level), then NUWC Keyport must analyze that sample for the 40 listed PFAS analytes using EPA Method 1633.

IV.A. Lab accreditation

Ecology requires that facilities must use a laboratory registered or accredited under the provisions of chapter 173-50 WAC, Accreditation of Environmental Laboratories, to prepare all monitoring data (with the exception of certain parameters).

As of writing of this permit, NUWC Keyport has an analytical laboratory on base, Naval Undersea Warfare Center Lab – Keyport, which is accredited for various non-potable water analytical methods. The accreditation number is F774. More information on the list of accredited methods and parameters can be found on Ecology's lab accreditation database, <https://apps.ecology.wa.gov/laboratorysearch/Default.aspx>.

V. Other Permit Conditions

V.A. Reporting and record keeping

Ecology based Special Condition S3 on its authority to specify any appropriate reporting and record keeping requirements to prevent and control waste discharges (WAC 173-216-110).

V.B. Operation and Maintenance

The proposed permit contains Special Condition S.4 as authorized under RCW 90.48.110, WAC 173-216-110, and WAC 173-240, to ensure proper operation and regular maintenance of equipment, and to ensure that NUWC Keyport takes adequate safeguards so that it uses constructed facilities to their optimum potential in terms of pollutant capture and treatment.

Special Condition S.4 requires NUWC Keyport to update the operation and maintenance manual as required by state regulation for wastewater treatment facilities (WAC 173-240-150). Implementation of the procedures in the operation and maintenance manual ensures the facility's compliance with the terms and limits in the permit.

V.C. Prohibited discharges

Ecology prohibits certain pollutants from being discharged to the POTW. These include substances which cause pass-through or interference, pollutants which may cause damage to the POTW or harm to the POTW workers (chapter 173-216 WAC) and the discharge of designated dangerous wastes not authorized by this permit (chapter 173-303 WAC).

V.D. Dilution prohibited

Ecology prohibits the facility from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limits.

V.E. Solid waste

NUWC Keyport must prevent pollution of the waters of the state through inappropriate disposal of solid waste or through the release of leachate from solid waste.

V.F. Non-routine and unanticipated wastewater

Occasionally, this facility may generate wastewater that was not characterized in the permit application because it is not a routine discharge and was not anticipated at the time of application. These wastes typically consist of water used to pressure-test storage tanks or fire water systems or of leaks from drinking water systems.

The permit authorizes the discharge of non-routine and unanticipated wastewater under certain conditions. The facility must characterize these waste waters for pollutants and examine the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and on any opportunities for reuse, Ecology may:

- Authorize the facility to discharge the wastewater.
- Require the facility to treat the wastewater.
- Require the facility to reuse the wastewater.

For temporary discharges with a volume less than 1,000 gallons, Ecology authorizes an alternate process for these discharges.

V.G. Slug discharge plan

Ecology determined that NUWC Keyport has the potential for a batch discharge or a spill that could adversely affect the treatment plant, therefore the proposed permit requires a slug discharge control plan [(40 CFR 403.8 (f)(I) (iii)(B)(6) and (f) (2)(vi)].

V.H. Toxic organic management plan

40 CFR 433.12(b) and 40 CFR 433.17(d) allows NUWC Keyport to submit a toxic organic management plan and routine certification statements in lieu of monitoring for TTOs. NUWC Keyport must submit an updated toxic organic management plan to continue to forego TTO monitoring.

V.I. General conditions

Ecology bases the standardized General Conditions on state and federal law and regulations. They are included in all state waste discharge permits issued by Ecology.

VI. Public notification of noncompliance

Ecology may annually publish a list of all industrial users in significant noncompliance with pretreatment standards or requirements during any of the previous four quarters in a local newspaper. Accordingly, this permit Special Condition informs the Facility that noncompliance with this permit may result in the publication of the noncompliance.

VII. Permit Issuance Procedures

VII.A. Permit modifications

Ecology may modify this permit to impose or change numeric limits, if necessary to comply with changes in the pretreatment requirements, conditions in local sewer ordinances, or based on new information from sources such as inspections and effluent monitoring.

Ecology may also modify this permit to comply with new or amended state or federal regulations.

VII.B. Proposed permit issuance

This proposed permit includes all statutory requirements for Ecology to authorize a wastewater discharge. The permit includes limits and conditions to protect human health, and the beneficial uses of waters of the state of Washington. Ecology proposes to issue this permit for a term of five years.

VIII. References for Text and Appendices

Ecology. (2022, September). *Per- and Polyfluoroalkyl Substances Chemical Action Plan*. Retrieved from
<https://apps.ecology.wa.gov/publications/summarypages/2104048.html>

Ecology. (2023). *Criteria for Sewage Works Design, Publication 98-37 (Orange Book)*. Retrieved from
<https://apps.ecology.wa.gov/publications/SummaryPages/9837.html>

EPA. (2022, December). *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs*. Retrieved from <https://www.epa.gov/newsreleases/epa-issues-guidance-states-reduce-harmful-pfas-pollution>

NUWC Keyport. (n.d.). 1023C-7: Otto Fuel (as PGDN) by Electron Capture Detector (ECD).

NUWC Keyport. (2023, May). Application for a State Waste Discharge Permit to Discharge Industrial Wastewater to a Publicly-Owned Treatment Works (POTW).

Washington State and Ecology website general reference links:

[Laws and Regulations](#)¹

[Permit and Wastewater Related Information](#)²

¹ <http://leg.wa.gov/LawsAndAgencyRules/Pages/default.aspx>

² <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance>

Appendix A – Public Involvement Information

Ecology proposes to issue a permit to NUWC Keyport. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

The permit issuance has no increases in volume or changes in characteristics of the discharge beyond those previously authorized. Therefore, in accordance with WAC 173-216-090(5), Ecology will not hold a public notice of draft for this proposed permit.

The primary author of this permit and fact sheet is Maia Hoffman.

Appendix B – Your Right to Appeal

You have a right to appeal this permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of the final permit. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. “Date of receipt” is defined in RCW 43.21B.001(2) (see glossary).

To appeal you must do the following within 30 days of the date of receipt 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 as defined in WAC 371-08-305 and -335. “Notice of appeal” is defined in WAC 371-08-340.
- Serve a copy of your appeal and this permit on Ecology on the Department of Ecology mail, in person, or by email (see addresses below).

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

Filing with the PCHB

For the most current information regarding filing with the PCHB: visit <https://eluho.wa.gov/>³ or call 360-664-9160.

Service on Ecology

Street Address:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

Mailing Address:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

E-Mail Address:

ecologyappeals@ecy.wa.gov

³ <https://eluho.wa.gov/>

Appendix C – Glossary

AKART – The acronym for “all known, available, and reasonable methods of prevention, control and treatment.” AKART is a technology-based approach to limiting pollutants from wastewater discharges, which requires an engineering judgment and an economic judgment. AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and RCW 90.48.520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a).

Ammonia – Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average monthly discharge limit – The average of the measured values obtained over a calendar months’ time.

Best management practices (BMPs) – 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 include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅ – Determining the five-day Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in receiving waters after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD₅ is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass – The intentional diversion of waste streams from any portion of a treatment facility.

Categorical pretreatment standards – National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties, which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Clean water act (CWA) – The federal Water Pollution Control Act enacted by Public Law 92 500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance inspection-without sampling – A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance inspection-with sampling – A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations. In addition it includes as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Ecology may conduct additional sampling.

Composite sample – A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction activity – Clearing, grading, excavation, and any other activity, which disturbs the surface of the land. Such activities may include road building; construction of residential houses, office buildings, or industrial buildings; and demolition activity.

Continuous monitoring – Uninterrupted, unless otherwise noted in the permit.

Critical condition – The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Date of receipt – This is defined in RCW 43.21B.001(2) as five business days after the date of mailing; or the date of actual receipt, when the actual receipt date can be proven by a preponderance of the evidence. The recipient's sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the agency, constitutes sufficient evidence of actual receipt. The date of actual receipt, however, may not exceed forty-five days from the date of mailing.

Detection level – or method detection limit means the minimum concentration of an analyte (substance) that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results as determined by the procedure given in 40 CFR part 136, Appendix B.

Engineering report – A document that thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report must contain the appropriate information required in WAC 173-240-060 or WAC 173-240-130.

Grab sample – A single sample or measurement taken at a specific time or over as short a period of time as is feasible.

Groundwater – Water in a saturated zone or stratum beneath the surface of land or below a surface water body.

Industrial user – A discharger of wastewater to the sanitary sewer that is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial wastewater – Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business; from the development of any natural resource; or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated stormwater and, also, leachate from solid waste facilities.

Interference – A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Local limits – Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Maximum daily discharge limit – The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method detection limit (MDL) – See Detection level.

National pollutant discharge elimination system (NPDES) – Section 402 of the Clean Water Act, the federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the state of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State are joint NPDES/State permits issued under both state and federal laws.

pH – The pH of a liquid measures its acidity or alkalinity. It is the negative logarithm of the hydrogen ion concentration. A pH of 7 is defined as neutral and large variations above or below this value are considered harmful to most aquatic life.

Pass-through – A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

Quantitation level (QL) – also known as Minimum level (ML) – The term “minimum level” refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (DL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the DL in a method, or the DL determined by a laboratory, by a factor of 3. For the purposes of NPDES compliance monitoring, EPA considers the following terms to be synonymous: “quantitation limit,” “reporting limit,” and “minimum level”.

Reasonable potential – A reasonable potential to cause or contribute to a water quality violation, or loss of sensitive and/or important habitat.

Responsible corporate officer – A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Sample Maximum – No sample may exceed this value.

Significant industrial user (SIU) –

- All industrial users subject to Categorical Pretreatment Standards under 40 CFR Chapter I, Subchapter N and 40 CFR 403.6 and;
- Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement [in accordance with 40 CFR 403.8(f)(6)].

Upon finding that the industrial user meeting the criteria in the second paragraph has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at

any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

Slug discharge – Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate that may cause interference or pass through with the POTW or in any way violate the permit conditions or the POTW's regulations and local limits.

Solid waste – All putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

State waters – Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater – That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based effluent limit – A permit limit based on the ability of a treatment method to reduce the pollutant.

Total suspended solids (TSS) – Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset – An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Appendix D – Supplemental Information

Table 9 - Minor industrial wastewater sources

Waste Stream ID	Wastestream Name	Location	Process Description	Discharge Frequency
38-2	Water jet cutter	Building (B) 38	The water jet cutter includes a dedicated solids settling and filtration system for treated wastewater prior to direct discharge to the sanitary sewer. Estimated volume is <1,000 gpd. The system typically operates 3-4 days per week.	Continuous
80-1	Boiler/cooling tower	B. 80	A high-efficiency condensing boiler generates a small volume wastestream of acidic condensate. The condensate is pumped through calcium carbonate to ensure the wastewater is within the pH limits prior to direct discharge to the sanitary sewer. The calcium carbonate is changed out annually.	Continuous
81-1	Hydrotesting	B. 81	Connectors and electrical cables are hydrotested in 50 and 100 gallon pressure vessels. Estimated volume is 75 gallons per test event, which typically occur weekly.	Batch
82-1	Hydrotesting	B. 82	Hydrotest water is recycled and stored in an adjacent 300-gallon storage tank. Water is disposed of via pumping to a utility sink approximately once per year.	Batch
82-2	Washdown water	B. 82	Components from open water testing are washed down in a covered patio. Wash water is collected in a 600 gallon underground storage tank. Wash water is disposed of at a nearby sewer lift station when the tank is near capacity, typically once per year.	Batch

Waste Stream ID	Wastestream Name	Location	Process Description	Discharge Frequency
82-4	Non-destructive testing	B. 82	Wastewater from polishing and grinding of metallurgical samples at the Failure Analysis Laboratory is treated through a solids settling treatment system prior to discharge to the sanitary sewer system. Estimated volume is 100 gallons per month.	Continuous
98-1	Hydrotesting	B. 98	A 2,500 gallon potable water makeup holding tank located outside the north wall of the building feeds an 800 and 400 gallon hydrotest tanks. The tanks are used to hydrotest torpedo sealing surfaces. The holding tank is drained to sanitary twice per year. Daily operations vent approximately 10 gallons per test event. The estimated yearly discharge is 3,000 gallons.	Batch
98-2	Test tank water	B. 98	Aquarium salinity is added to potable water to test flow meters in a closed system which contains a 1,090 gallon tank. The only component exposed to salt water is the rubber lining of the flow meter. The salt water tank is drained once per year, with an additional 50 gallons of potable water used to flush the system. Kitsap County requires this discharge to be at a rate of 100 gpm.	Batch
108-1	Noncontact cooling water	B. 108	Potable water is used in a single pass, non-contact cooling water system for a centrifugal testing unit. System use varies but is infrequent (less than once per month). Estimated discharge volume is 200 gallons per operational event.	Batch

Waste Stream ID	Wastestream Name	Location	Process Description	Discharge Frequency
206-1	Boiler/cooling tower	B. 206	Steam boilers blowdown water discharges to sanitary sewer after passing through a cooler in order to reduce temperatures.	Continuous
478-1	Washdown water	B. 478	Potable water used to wash down undersea vehicles returning from open water testing is discharged to sewer. Washing takes place several times per week and is conducted over the test tank (478-2) Estimated discharge volume is 200 gallons per event.	Continuous
478-2	Test tank water	B. 478	Aquarium salinity is added to potable water in an 8,300 gallon test tank. The tank is used to test small vehicles. The tank is drained 1-2 times per year. Kitsap County requires discharge to be at a rate of 100 gpm or less.	Batch
478-3	Test tank	B. 478	A 10,000 makeup tank staged outside B. 478 supplies the 8,300 test tank with aquarium salinity water. This makeup tank must be periodically pressure washed to remove algae buildup at the bottom of the tank. Estimated volume is 1,200 gallons per cleaning event, which occur once every two years. Kitsap County requires discharge to be at a rate of 100 gpm or less.	Batch
478-4	Boiler/cooling tower	B. 478	A high-efficiency condensing boiler generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to ensure pH is within permit limits prior to discharge to the sewer. The calcium carbonate is changed out annually.	Continuous

Waste Stream ID	Wastestream Name	Location	Process Description	Discharge Frequency
489-1	Boiler/cooling tower	B. 489	Two high-efficiency condensing boilers generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to ensure pH is within permit limits prior to discharge to the sewer. The calcium carbonate is changed out annually. Additionally, cooling towers at this location periodically blowdown to the sewer as required via an automated system.	Continuous
514-2	Noncontact cooling water	B. 514	Potable water is used in a closed loop, single pass, noncontact cooling system. The system is used to cool four torpedo test sets. Cooling water passed through the test sets at four separate stations via the cooling system piping. The cooling system at each station has a discharge to sewer. Small amount of water, approximately 10 gallons per day, are discharged from the system during use.	Continuous
514-3	Boiler/cooling tower	B. 514	Three high-efficiency condensing boilers generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to ensure pH is within permit limits prior to discharge to the sewer. The calcium carbonate is changed out annually.	Continuous
514-4	Buoyancy subsystem wash water	B. 514	Buoyancy subsystems (BSS) are collected for reuse following open water testing and washed in a small sink with a nonionic general purpose liquid detergent. A BSS consists of an electrical initiator, a gas generator, a CO2 container, a buoyancy bag, and relief valves inside a hull section. Combustion products from the reaction that causes the bag to inflate, and mild corrosion of the bronze relief valve	Batch

Waste Stream ID	Wastestream Name	Location	Process Description	Discharge Frequency
			within the BSS, cause low levels of metals in the wastewater. Analytical and WET test results for this wastestream are included in the 2023 permit application. Also present are small amounts of sea water, potable water, and soap. The wastewater is collected in a 250 gallon intermediate bulk container. The tank is typically emptied 3-4 times per year. Estimated annual discharge volume is 1,000 gallons.	
820-1	Washdown water	B. 820	Potable water used to wash down undersea vehicles returning from open water testing. Washing occurs several times per week. Estimated volume is 200 gallons per washing event.	Continuous
894-1	Washdown water	B. 894	Potable water is used to wash down components returning from open water testing. Washing occurs several times per week. Estimated volume is 200 gallons per washing event.	Continuous
894-2	Boiler/cooling tower	B. 894	A high-efficiency condensing boiler generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to ensure pH is within permit limits prior to discharge to the sewer. The calcium carbonate is changed out annually. Additionally, a cooling tower at this location periodically blowdown to the sewer as required via an automated system.	Continuous

Waste Stream ID	Wastestream Name	Location	Process Description	Discharge Frequency
1003-1	Boiler/cooling tower	B. 1003	Two high-efficiency condensing boilers generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to ensure pH is within permit limits prior to discharge to the sewer. The calcium carbonate is changed out annually. Additionally, cooling towers at this location periodically blowdown to the sewer as required via an automated system.	Continuous
1050-1	Boiler/cooling tower	B. 1050	A high-efficiency condensing boiler generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to ensure pH is within permit limits prior to discharge to the sewer. The calcium carbonate is changed out annually. Additionally, a cooling tower at this location periodically blowdown to the sewer as required via an automated system.	Continuous
1058-2	Boiler/cooling tower	B. 1058	Steam boilers blowdown water discharges to sewer after passing through a cooler to reduce water temperatures.	Continuous
1086-1	Treatment of oily wastewater	B. 1086	Discharges to sanitary sewer at B. 1086 was formerly named P-386. Identical undersea vehicle wash racks are located on the north and south sides of B. 1086. Trench drains under each wash station route water into a sediment trap, and a VortClarex VCL30 oil water separator. The separators have a design flow rate of 100 gpm. Estimated discharge volume is 1,000 gpd.	Continuous
KYPT-1	Mop water	Various locations	Discharges for mop water from janitorial activities at various locations within the site.	Batch

Waste Stream ID	Wastestream Name	Location	Process Description	Discharge Frequency
KYPT-2	Eyewash stations	Various locations	Discharge from emergency eye wash stations at various locations within the site.	Batch
KYPT-3	Concrete cutting and slurry water	Various locations	Discharge of concrete cutting and slurry water from activities within the site. Any chemical additives from concrete activities must have Base Environmental Office approval prior to discharge. Wastewater from these activities is neutralized, settled, and filtered prior to discharge.	Batch
KYPT-4	Utility potable water line flushing	Various	Discharge of chlorinated water from potable water line flushing for disinfection. Kitsap County requires flow be metered at less than 150 gpm and any volume greater than 5,000 gallons be dechlorinated to less than 50 ppm prior to discharge.	Batch

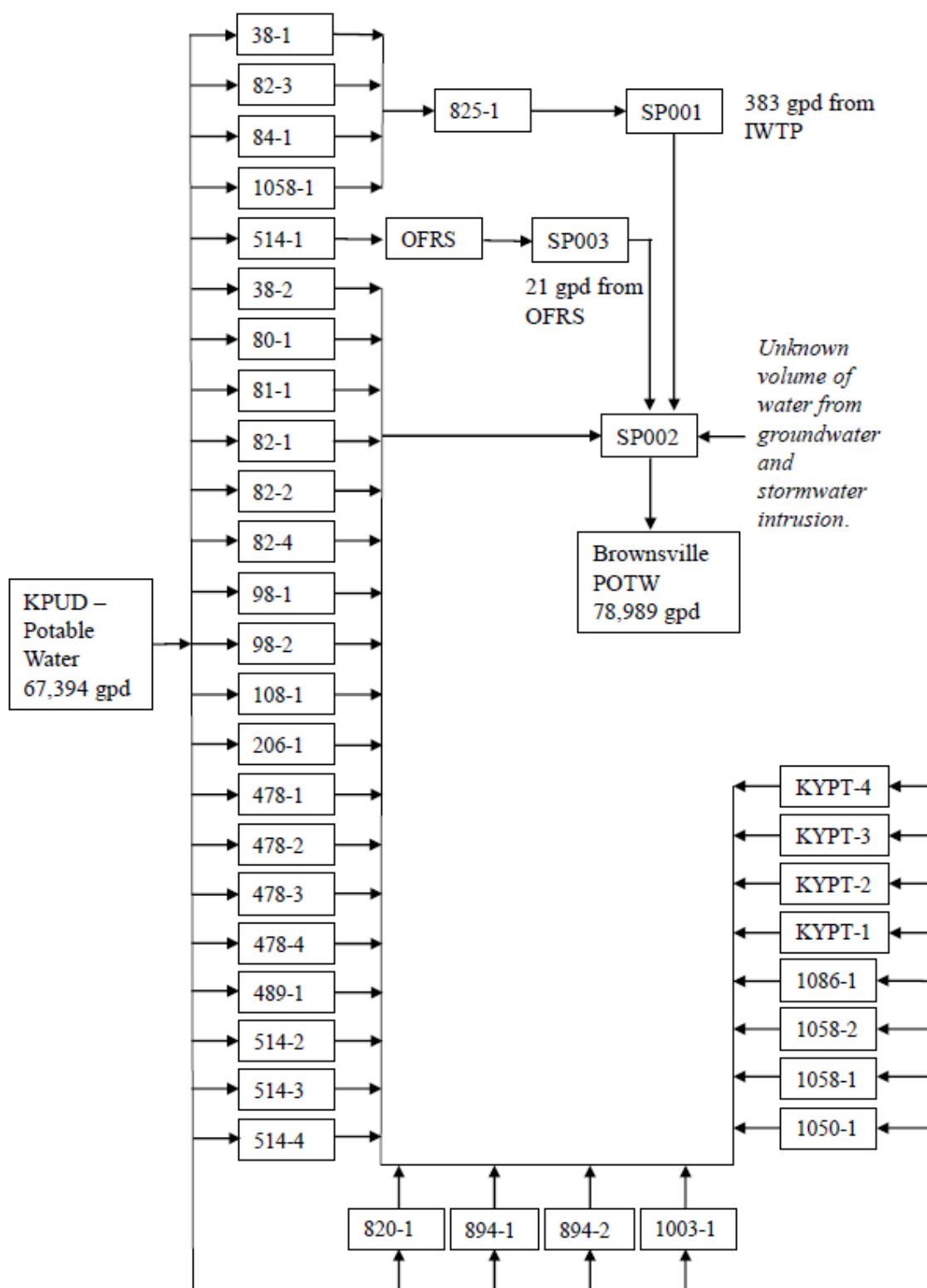


Figure 2 - Industrial waste stream flowchart

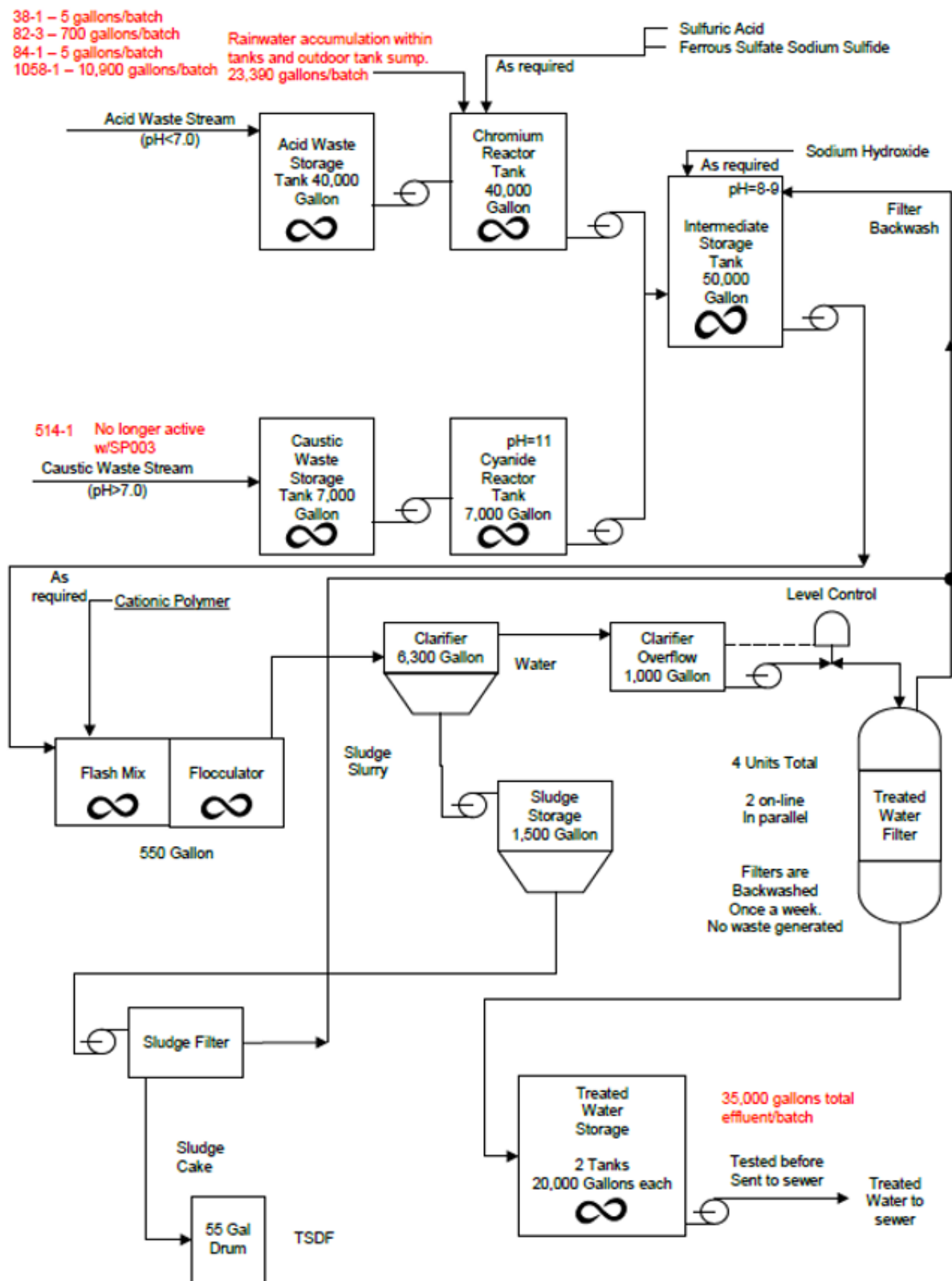


Figure 3 - IWTP flow schematic

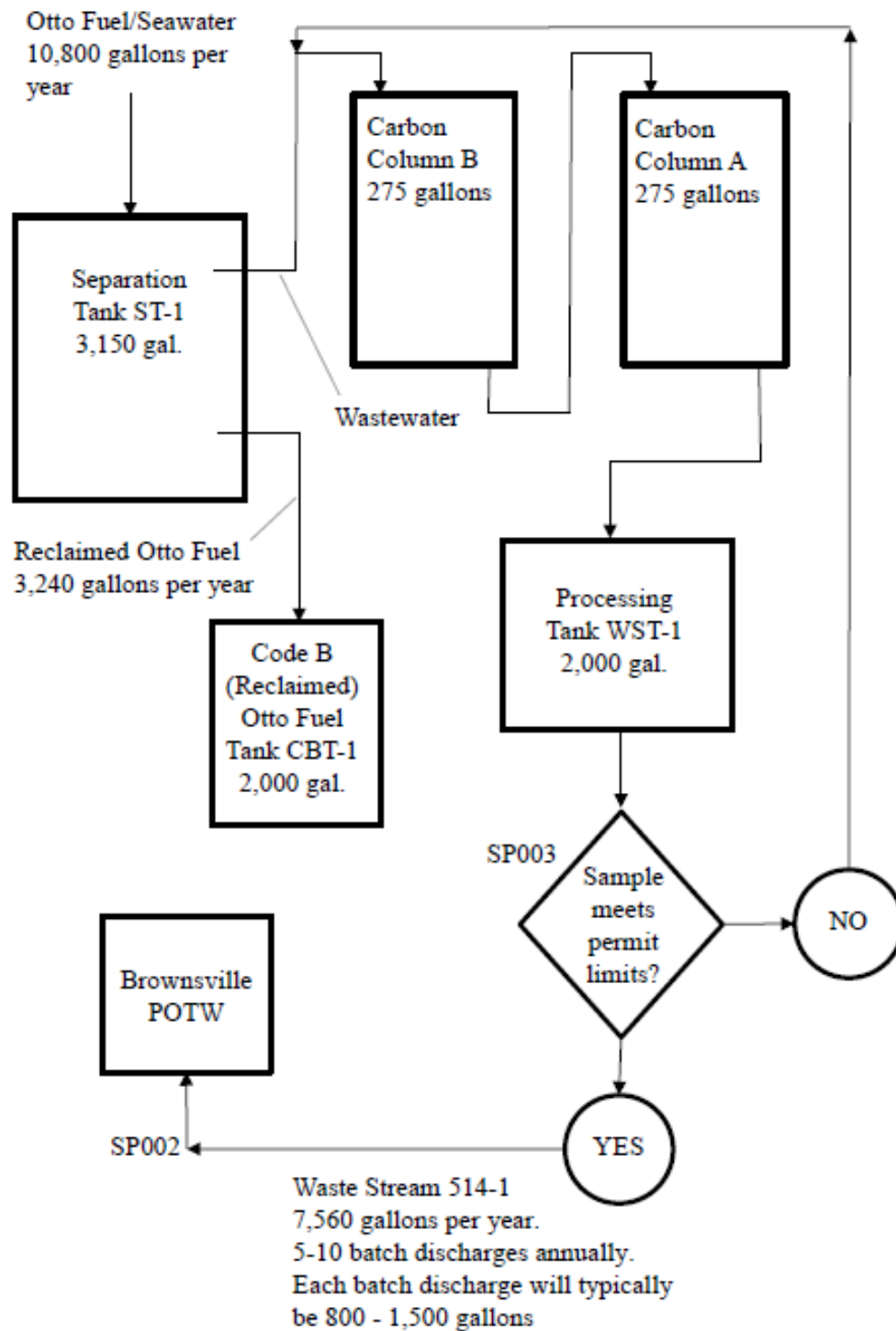


Figure 4 - OFRS flow schematic