

RESPONSE TO COMMENTS

Naval Air Station Whidbey Island NPDES Permit #WA-000346-8 May 24, 2010

On November 5, 2008, the U.S. Environmental Protection Agency (EPA) issued a public notice for the Naval Air Station Whidbey Island (Whidbey) draft National Pollutant Discharge Elimination System (NPDES) Permit No. WA-00346-8 for discharges from the sewage treatment plant. This Response to Comments provides a summary of significant comments and provides corresponding EPA responses. Where indicated, EPA has made appropriate changes to the final NPDES Permit.

J. G. Mosher of the Department of the Navy and DeeAnn Kirkpatrick of the National Marine Fishers Service commented.

- 1. Comment:** Delete Table 1 sentence “All figures represent maximum effluent limits unless otherwise indicated.” The sentence is misleading as Table 1 equally expresses both maximum and average limits. The sentence “The permittee must comply with the effluent limits in the tables...” clearly expresses the requirement to comply with limits.

Response: The limits are not to be exceeded unless otherwise specified. These are maximum limits whether they are maximum daily limits or maximum monthly average limits. EPA does not see the sentence as misleading nor have other permittees. The sentence will remain.

- 2. Comment:** Please change the BOD, TSS, and fecal coliform sample frequencies in accordance with the EPA document: Interim Guidance for Performance-base Reduction of NPDES Permit Monitoring Frequencies dated April 1996. Based on three years of effluent monitoring data the guidance document specifies frequencies as shown in the table below. Further, the proposed requirement of twice per week versus once per week, is not warranted because since 1997 when we started our operation, we always have had an excellent record of compliance with the existing limits.

Parameter	Ratio of Long Term Average to Monthly Average Limit	Current/Baseline Frequency	Interim Guidance Based Frequency
BOD	31%	1/week	2/month
TSS	16%	1/week	1/two months
Fecal Coliform	3%	1/week	1/two months

Response: Ecology requested an increase in monitoring frequency for TSS, BOD and fecal coliform from one sample per week to two samples per week in the draft 401 certification. However, using methods in Ecology’s Permit Writer’s Manual, page XIII-15 under Monitoring the monitoring frequency may be reduced based on the ratio of long

term effluent average (LTA) to the average monthly limit (AML). If the LTA is less than 25 percent of the AML over two years monitoring at Whidbey can be reduced from once per week to once per two months.

Parameter	AML	LTA	Ratio (%)	Criteria (%)
BOD ₅	30	6.3	21	25
TSS	30	3.7	12	25
Fecal Coliform Bacteria	200	4.0	2.0	25

EPA concurs with Whidbey. Under both EPA's Interim Guidance for Performance-based Reduction of NPDES Permit Monitoring Frequencies dated April 1996 and under Ecology's Permit Writer's Manual Whidbey is eligible for a reduction in monitoring from once per week to once every two months.

Further, three of the SBR plants listed in the fact sheet are required to monitor twice per week and one is required to monitor once per week.

Discretion for monitoring rests with EPA.

Section 308 of The Clean Water Act as Amended by the Water Quality Act of 1987, Public Law 100-4 [33 U.S.C. § 1318] states, in part:

"Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any effluent limitation, or other limitation...

(a) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including, where appropriate, biological monitoring methods), (iv) sample such effluent (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require;"

The federal regulation which comes from this section of law is 40 CFR 122.41(h) which states:

"(h) Duty to provide information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit."

The legal test of monitoring and testing under the federal Clean Water Act demands only that the monitoring or testing be reasonably required for some purpose under the Act - including developing any new effluent limitation.

EPA finds increasing monitoring from once per week to twice per week in the draft is not justified and the existing once per week monitoring is reasonable. The final permit will require once per week monitoring.

- 3. Comment:** Request changing the total residual chlorine sample frequency from daily to weekly. Accordingly change the average monthly limit to 0.066 mg/L.

Response: Justification is not provided in this comment. Whidbey did not exceed the new monthly chlorine effluent limitation over the last five years. Chlorine discharges from Whidbey is a concern to both the U.S. Fish and Wildlife Service and the U.S. National Marine Fishers Service. Both services required a biological assessment to evaluate chlorine impacts on listed species. Monitoring frequency will remain daily and the monthly effluent limitation will be the surface water quality based limit of 0.052 mg/L. See Response to Comment 2.

- 4. Comment:** Request that monitoring for total ammonia, arsenic, copper, lead, mercury, silver and zinc be conducted on a monthly basis in the fourth year of the permit only rather than once every two months for the life of the permit. No reasonable potential to exceed water quality standards was shown for these parameters so routine monitoring is not warranted. Monthly monitoring for a year will provide a good set of data in order to determine reasonable potential for the next permit cycle.

Response: As the fact sheet states additional metals monitoring is needed to determine with any degree of confidence a reasonable potential and for good engineering design for any future control technology. The reasonable performance analysis was performed with only one sample and is inadequate but was requested by Ecology. Sampling metals and ammonia once every two months over the five year term of the permit will provide 30 samples distributed over five years. Monitoring monthly for the last year will provide 12 samples over one year. Sampling 30 times over five years will be more representative of the infrequent industrial discharges to the POTW.

- 5. Comment:** Please specify the metals digestion method – total, dissolved and/or total recoverable.

Response: Table 1 is modified to require total recoverable metals monitoring as required by 40CFR § 122.45(c) for calculating NPDES permit conditions.

- 6. Comment:** Will monitoring under Condition I.B., Table 1 “Effluent Testing, Application 2A Expanded Effluent Testing” and “NPDES Application Form 2A Whole Effluent Toxicity (WET)” fulfill the Form 2A requirements? Or are additional monitoring events needed as required by Form 2A. Please clarify in a footnote. Our understanding is that monitoring as required by the permit will fulfill the requirements of Form 2A.

Response: Yes, the monitoring in Table 1 for both expanded testing and WET Testing are to provide lead time to the permittee to fulfill the requirements of Form 2A. The

monitoring in the Table 1 is the same as the monitoring for Form 2A. The footnotes have been expanded to state this fact.

7. **Comment:** Footnote 6 in Condition 1B, Table 1 requires expanded effluent testing in accordance with instructions in NPDES Application Form 2A, Part D. Please delete this requirement. Generally this testing, per Form 2A is only required for sewage treatment plants which discharge greater than 1 million gallons per day. Our treatment plant is well below this threshold. Additionally, the required whole effluent toxicity testing will “catch” potential impacts that might be caused by Part D parameters.

Response: The instructions for Form 2A, Part D are:

“Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or *it has (or is required to have) a pretreatment program*, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and *any other information required by the permitting authority for each outfall through which effluent is discharged.*” (*Emphasis added*)

Form 2A, Part D monitoring is mandatory for Whidbey because it has a pretreatment program and is required by EPA. Both the National Oceanic and Atmospheric Administration and the U.S. Fish and Wildlife Service expressed concern about the pollutants in Form 2A, Part D on listed species in the vicinity of the outfall. See Response to Comment 2. The design flow of Whidbey is 0.85 mgd which is not well below 1.0 mgd.

8. **Comment:** Footnote 7 in Table 1 requires conducting “WET testing in accordance with instruction in NPDES Application Form 2A, Part E.” Modify the footnote to read “submit results of WET Testing, as required by this permit on NPDES Application Form 2A, Part E.” The draft permit provides clear and detailed WET testing requirements. Form 2A does not. There may be conflicts. For example, Form 2A requires WET testing quarterly over a 12 month period within the past one year or the results from four tests performed at least annually in the four and one-half years prior to the application. Quarterly testing conflicts with that in the draft permit.

Response: Table 1 in the permit requires four samples over five years. Form 2A requires four samples over 12 months within the last year of the permit or four samples annually over four and one half years. Table 1 is changed to require monitoring quarterly in the last year of the permit to detect seasonal variations in the discharge of wastewater to eliminate any conflicts.

Methods in the permit reference the same methods in EPA manuals used to satisfy Form 2A monitoring requirements. For example:

“Control water and dilution water shall be laboratory water meeting the requirements of the EPA manual listed in subsection A.”

“The Permittee shall compare the ACEC to the control using hypothesis testing at the 0.05 level of significance, as described in Appendix G of EPA/600-R95/136 (*Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, August, 1995).”

These procedures were successfully followed by Whidbey and other permittees. In fact, Whidbey’s 2000 and 2001 test results Page 8 in the July 16, 2002 application Part E quoted procedures “(U.S. EPA, 1994 and WDOE, 1998)” for each of the tested species.

- 9. Comment:** In Conditions I.B.6, 7 and 8 Method Reporting Limits (MRL) and minimum level (ML) do not reflect current laboratory reporting standards and require modification to ensure clear and consistent reporting by the permittee. Typically, analytical laboratories specify Method Reporting Limit (MRL) or Practical Quantification Level and the result. Please modify the permit to state that if a result is below the MRL (i.e. ND) then zero may be assigned for purposes of calculations.

Response: For reapplication Whidbey must report ML/MDLs for Form 2A Part A, Part B and meet specified ML/MDLs for Part D. MDLs are used to quantify analytical reporting and remain the most common methods of defining a level of confidence for NPDES permits. The procedures are also codified in 40 CFR Part 136. These procedures are and can be used by analytical laboratories to generate MDLs for Whidbey. They were generated for Whidbey in Application Form 2A, Part A, Part B and to meet the specified ML/MDLs for Part D.

Standardization in data reporting significantly enhances the ability of resource managers to interpret and review data because it is comparable. Whidbey is asking EPA to change this standardization among NPDES permits that is required by both regulation and by policy with this individual permit. If such an effort were to be initiated it must be done nationwide. The conditions will remain as written in the draft permit. Zero may be assigned for values less than the MDL, and the {numeric value of the MDL} may be assigned for values between MDL and the ML.

- 10. Comment:** Page 8 of 25, Condition II.A.1.: The requirement to conduct final acute and chronic WET Testing once in the last summer and once in the last winter prior to submission of the application for permit renewal conflicts with the requirement in Table 1 to conduct WET testing 4 times within 5 years. Please modify either Table 1 or this paragraph to remove the conflict.

Response: EPA agrees summer and winter WET testing is in conflict with Form 2A, Part E WET testing requirements and are removed. See response to Comment 8.

- 11. Comment:** The permit requires reporting percent survival in 100 % effluent. The acute critical effluent concentration (ACEC) however is approximately 10%. Request the

range of test effluent concentrations be reasonably within the range of the ACEC. Say five dilutions with a maximum effluent concentration of 20%.

Response: In accordance with WAC173-205-050(2)(a)(i), testing at 100% effluent is required in order to determine whether or not a discharge has reasonable potential to cause or contribute to a violation of Washington State's narrative water quality criteria for acute toxicity. As a result, no changes will be made to the effluent concentrations specified in the draft permit.

The no observable effect concentration (NOEC) will be better characterized by a spread of dilutions between 100 percent and the ACEC especially if survival is below the criteria in 100 percent effluent.

- 12. Comment:** Page 9 of 25 II.A.3.: Requirement is to conduct test "dilutions shall include the ACEC" It is unclear why the ACEC is referenced for a chronic test. The chronic critical effluent concentration (CCEC) is approximately 1.6%. Requires the range of chronic test concentration be reasonably within the range of the CCEC, say five dilutions with a maximum effluent concentration of 5%.

Response: See response to Comment 11. In accordance with WAC173-205-050(2)(a)(ii), testing at the ACEC is required in order to determine whether or not a discharge has reasonable potential to violate Washington State's narrative water quality criteria for chronic toxicity. As a result, no changes will be made to the effluent concentrations specified in the draft permit.

- 13. Comment:** The draft permit notes "an Industrial and Wastewater Management Plan." Whidbey has an Industrial Wastewater Management Plan but not a Wastewater Management Plan. Please delete the "and" between Industrial and Wastewater. The Operation and Maintenance Plan is in essence a Wastewater Management Plan.

Response: The "and" is deleted.

- 14. Comment:** Request using the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) as an acceptable QAPP format.

Response: The Uniform Federal Policy for Quality Assurance Project Plans is an acceptable QAPP format.

- 15. Comment:** No specific criteria are required for protection of the designated uses for salmonid and other fish migration, rearing, spawning, etc.

Response: The fact sheet states:

"A State's water quality standards are composed of use classifications, numeric and narrative water quality criteria, and an anti-degradation policy. The use classification system designates the beneficial uses (such as cold water biota) that each water body is expected to achieve. The numeric and narrative water quality criteria are the criteria

deemed necessary, by the State, to support the beneficial uses as well as to maintain and protect various levels of water quality and uses.

The receiving water is classified as Extraordinary Marine according to the State of Washington's water quality standards (found at WAC 173-201A as amended in November, 2006). Waters listed as extraordinary are designated for uses including industrial water supply; salmonid and other fish migration, rearing, spawning, and harvesting; clam, oyster, and mussel and other shellfish rearing, spawning and harvesting and wildlife habitat.”

EPA concurs the State's water quality standards protect listed species.

Specific criteria are below.

Aquatic Life Uses & Associated Criteria for Puget Sound in the Vicinity of Naval Air Station Whidbey WWTP Discharge

Extraordinary Quality	
Temperature Criteria – Highest 1D MAX	13°C (55.4°F)
Dissolved Oxygen Criteria – Lowest 1-Day Minimum	7.0 mg/L
pH Criteria	pH must be within the range of 7.0 to 8.5 su with a human-caused variation within the above range of less than 0.2 units.

No reasonable potential exists for temperature to exceed the state water quality standards which protect the designated beneficial uses for Extraordinary Marine water quality. Dissolved Oxygen and pH limitations are protected by the BOD₅ and pH standards that protect these beneficial uses.

16. Comment: More information is necessary on how pollutants are likely to affect ESA listed species, their prey (e.g. would the effluent affect identified sandlance spawning area along the shoreline to the north of the treatment plant), critical habitat, and EFH. Outfall. The outfall is located at 1100 feet off shore at -7 feet MLLW, within critical habitat for Chinook (which extends to 30 feet MLLW), near critical habitat for Southern Resident killer whales (starts at 20 feet MLLW), and in EFH (which occurs throughout Puget Sound). The effluent is dispersed through a 2 port diffuser. Does the velocity of the effluent plume preclude ESA listed fish and marine mammals, and their prey species from staying in the 100% effluent plume? Are ESA listed fish and marine mammals, and their prey species expected to detect and avoid pollutant concentrations in the effluent, e.g. chlorine, and move away from the effluent?

Response: On May 8th and 9th, 2008 EPA received a telephone call from Shandra O'Haleck at NOAA Fisheries who stated Chinook and steelhead are threatened species. NOAA's website lists are Chinook salmon, steelhead and Steller Sea Lion as threatened.

Effective July 27, 2010 the Canary Rockfish and the Yelloweye Rockfish will be listed as threatened. Listed as endangered are the Southern Resident Killer Whale and Humpback Whale. Effective July 27, 2010 the Bocaccio Rockfish will be listed as endangered.

EPA's biological assessment, October 2009, either concurred with the finding in the fact sheet that discharges are not likely to adversely affect any listed species or found that discharges had no effect.

The area of the outfall is not a rearing area for salmon - rearing areas are typically estuaries/rivers/marshes, not open waters along the west side of Whidbey. Where the outfall is located is probably a migratory corridor for any salmon that may use the area but it is doubtful they would linger there unless there was extensive vegetation around the outfall which is not the case. Chinook salmon have been observed along the shores of the west side of Whidbey, but they are probably moving through to other areas. It is difficult to know if the salmon are in the area due to the absence of recent data. However, juvenile salmon and other listed species will be able to avoid the mixing zone during the discharge periods, but may be caught near the diffuser when the flow begins. Consequently, mixing may affect, not likely to adversely affect, the listed species.

The biological assessment also evaluated the proposed listing of the Canary Rockfish, the Yelloweye Rockfish and the Bocaccio Rockfish and their habitat. In the Georgia Basin/Puget Sound area, the primary habitat for nearshore rockfish is composed of pebble, cobble, boulder, bedrock and hardpan substrates that are continuous or isolated and that form crevices or other structures to protect rockfish from currents and predators. This habitat is absent along the Ault Field shoreline. The outfall is in relatively shallow depths and is located in a sandy, silty bottom. The assessment concluded discharges from Whidbey will not jeopardize the continued existence of the Rockfish species. It found the Bocaccio rockfish is unlikely to be in the area of the outfall and only four Bocaccio Rock Fish will not avoid the mixing zone because their habitat is absent and they will not be in the area. In the Georgia Basin/Puget Sound area, the primary habitat for nearshore rockfish is composed of pebble, cobble, boulder, bedrock, and hardpan substrates that are continuous or isolated and that form crevices or other structures to protect rockfish from currents and predators (Palsson et al. 2009). This habitat is absent along the Ault Field shoreline (Palsson et al. 2009). Further, only 14 canary rockfish, three yellow rockfish and four Bocaccio rockfish have been observed in all of the east Strait of Juan de Fuca area.

It is unlikely that Southern Resident Killer Whales linger in the area of the outfall since food sources are low at that location.

EPA will continue to consult with the National Marine Fisheries Service following the issuance of the permit.

- 17. Comment:** Allowing a mixing zone seems contrary to protecting the designated uses and listed species. Allowing violations inside the mixing zone is an unacceptable approach.

Response: The fact sheet states:

“Sometimes it is appropriate to allow a small area of receiving water to provide dilution of the effluent, these areas are called mixing zones. Mixing zone allowances will increase the mass loadings of the pollutant to the water body, and decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and the receiving water is below the chemical specific numeric criterion necessary to protect the designated uses of the water body.”

Mixing zones are a regulatory recognition that the concentrations and effects of most pollutants diminishes rapidly after discharge due to dilution. They are established in a manner which limits the duration of exposure for organisms passing through the effluent plume in order to minimize the risk from each discharge including to listed species.

The whole effluent toxicity (WET) testing requires the toxicity in 100 percent effluent. This is equivalent to toxicity on aquatic life within the mixing zone. EPA is requiring four WET tests to determine effects at the acute critical effluent concentration and four tests at the chronic critical effluent concentration. The purpose of WET testing is to measure overall toxicity of effluent in lieu of analyzing all individual toxic pollutants many of which cannot be detected by commonly available testing methods. These tests are conducted on the most sensitive species and will be a conservative test of the effects of the chemicals you cited on listed species. The WET test compares toxicity at the edge of the mixing zone. However, the testing also requires the toxicity in 100 percent effluent which is equivalent to toxicity on aquatic life within the mixing zone. The last acute WET test found no toxicity to fathead minnow in 100 percent effluent. Also the tests found percent survival of Ceriodaphnia dubia was 85 percent in 100 percent effluent. If any individual test result shows less than sixty five percent survival in one hundred percent effluent, then a reasonable potential for acute conditions in the receiving water has been demonstrated. Based on this test result Whidbey does not cause toxicity within the mixing zone. Chronic toxicity used mysid shrimp. No chronic toxicity for either survival or growth to mysid shrimp occurred in 50 percent effluent. Whidbey will be required to determine chronic toxicity in 100 percent effluent in the reissued permit. This will be equivalent to toxicity inside the mixing zone.

WET testing results are shown in the table below:

Species	Toxicity Test	Sample Date	Result
Ceriodaphnia Dubia	7-day Partial Life Cycle Toxicity	July 26, 2000	No significant effect at 100% effluent
Ceriodaphnia Dubia	48 hours	July 26, 2000	75% survival in 100% effluent
Pimephales promelas (Fathead Minnow)	7-day Larval Survival and Growth Toxicity Test	July 26, 2000	No significant effect at 100% effluent

Species	Toxicity Test	Sample Date	Result
Pimephales promelas (Fathead Minnow)	96-hour acute Toxicity Test	July 26, 2000	100% survival in 100% effluent
Onchorhynchus mykiss (Rainbow Trout)	96-hour	July 26, 2000	100% survival in 100% effluent
Mytilus galloporvicialis (mussels)	48-hour	Sept. 21, 2001	71% survival and 3.4% normal in 67.8 effluent NOEC at 33.9% effluent
Pimephales promelas (Fathead Minnow)	96-hour acute Toxicity Test	Sept. 21, 2001	97.5% survival in 100% effluent
Mytilus galloporvicialis (mussels)	48-hour	Dec. 21, 2001	No effects on mussel development or survival at the maximum effluent concentration of 68.5% effluent
Pimephales promelas (Fathead Minnow)	96-hour acute Toxicity Test	Dec. 21, 2001	100% survival in 100% effluent
Ceriodaphnia Dubia	48-hour	Aug. 9, 2006	85% survival in 100% effluent
Pimephales promelas (Fathead Minnow)	96-hour	Aug. 9, 2006	100% survival in 100% effluent
Mysid Shrimp (Americamysis bahia)	7-day	Aug. 9, 2006	Survival and Growth NOEC at highest concentration of 50%,

The table shows the effects of pollutants within the mixing zone for listed species. This is not only for the chemicals listed by the commentator's comments but also for effects of conventional pollutants such as TSS, BOD₅ and fecal coliform within the mixing zone.

Both Ecology and EPA determined that the mixing zone protects the beneficial uses of Puget Sound in the area of Whidbey including listed species.

One sample is inadequate to determine with any confidence reasonable potential to violate water quality standards. But the one sample of metals in the application indicates

that the metals discharged may be within Ecology's water quality standards for aquatic life within the mixing zone.

Specific Parameter Tests Whidbey				
	Acute Water Quality Standard	Chronic Water Quality Standard	Max effluent conc. measured (metals as total recoverable)	# of samples
Parameter	ug/L	ug/L	ug/L	n
Ammonia Nitrogen	6000.00	890.00	3060.00	1
Arsenic	360.00	190.00	2.60	1
Copper	4.80	3.10	3.50	1
Lead	210.00	8.10	0.74	1
Mercury	1.80	0.03	0.00	1
Silver	1.90	1.90	0.03	1
Zinc	90.00	81.00	71.00	1

Further metals monitoring will gather the data necessary to determine reasonable potential.

Further, most chemicals are non detects as shown in Table 2 at the end of this response to comments.

18. Comment: Requiring only a single sample in Expanded Effluent Testing when pollutants are exceeding the ML/MDL seems inadequate to accurately identify pollutant concentration exceedances. The permit states EPA will be requiring five years of metals monitoring in the next permit term. If that means once per year, this testing frequency seems inadequate.

Response: EPA concurs. That is why the draft and final permits require metals monitoring once every two months for five years for those metals detected. Only one sample was used for Part D. Expanded Effluent Testing for the reissued permit requires the results of a minimum of three pollutant scans.

19. Comment: Monitoring for temperature is required during the warmest period of the day. The worst case scenario is during the warmest part of the day.

Response: The requirement is removed.

20. Comment: No results were shown from the required winter toxicity testing of the final effluent.

Response: The required winter testing was completed on December 19, 2001 but was not included in the fact sheet. The results are in Response to Comment 17.

21. Comment: Testing under Form 2A, Part D is incomplete.

Response: All the parameters required for monitoring under Form 2A Part D were tested and results submitted. Results are on Form 2A in Appendix A Page 28 through 32 of the Fact Sheet.

22. Comment: What is the percentage of non-domestic flow in the discharge flow? How will these affect listed species?

Response: Based on average discharge flow aircraft intermediate maintenance rinsate is approximately 0.02 percent, aircraft washing is 0.01 percent, aircraft engine wash 0.001 percent, oil water separator to control wash wastewater 0.5 percent, non destructive inspection penetrate rinses 0.004 percent and boiler compressor blow down 0.0002 percent. These industrial discharges are low and will have little impact on listed species. This is reflected in the low concentrations for each metal. See Response to Comment 17.

23. Comment: It appears that copper and mercury also exceeded state water quality standards in the mixing zone, which is a concern for ESA listed species. More testing should be required for these pollutants, and if these results are consistently found, ways to minimize the output of these pollutants should be implemented.

Response: See response to Comment 16. The permit increases monitoring to once every two months from three times per application for both copper and mercury to characterize the discharges. In addition, EPA is requiring four WET tests to determine effects in not only the acute critical effluent concentration and the chronic critical effluent concentration but also in 100 percent effluent. The purpose of WET testing is to measure overall toxicity of effluent in lieu of analyzing for all individual toxic pollutants many of which cannot be detected by commonly available testing methods. These tests will supply the additional analyses requested.

Minimization is implemented at Whidbey. Minimization includes a pretreatment program, which consists of an Industrial Wastewater Management plan, regular sampling and analysis, and a management structure in place to regulate non-domestic wastes. Pollution prevention by the NAS Whidbey Island reduced waste from non-domestic industrial users from one pick up per month to one pick up every four months. Contributing to this are recycling and reduction of hazardous waste and wastewater by using the most concentrated solvents only when necessary in the Aircraft Intermediate Maintenance Department.

24. Comment: Since the effluent exceeded ML/MDL and water quality standards for these pollutants why is there no need to consider alternative limits?

Response: Effluent limits are not required because there is insufficient data to determine a reasonable potential to violate the state water quality standards. The thirty samples required under the permit under varying conditions over five years will provide data for a reasonable potential. The reissued permit will have additional metals monitoring.

25. Comment: Tertiary treatment is now considered AKART.

Response: The comment does not list which tertiary treatment should be required, the parameter requiring tertiary treatment, the basis for the comment or a citation supporting the comment.

See Appendix B Basis of Effluent Limitations page 33 of the fact sheet.

Chapter 173-221 WAC, Discharge Standards and Effluent Limitations for Domestic Wastewater Facilities requires secondary treatment.

WAC 173-221-040 Domestic wastewater facility discharge standards.

(1) Except as allowed under WAC 173-221-050, domestic wastewater facilities which discharge to surface water shall not exceed a thirty-day average of 30 milligrams per liter (mg/L) BOD, 30 mg/L TSS. Seven-day averages shall not exceed 45 mg/L BOD, 45 mg/L TSS. Additionally, the thirty-day average percent removals of BOD and TSS shall not be less than eight-five percent of influent concentrations.

(2) Fecal coliform limits shall not exceed a monthly geometric mean of 200 organisms/100 milliliters (mL), and a weekly geometric mean of 400 organisms per 100 mL.

(3) The effluent pH value shall be between 6.0 and 9.0 standard units unless the permittee demonstrates that:

(a) Inorganic chemicals are not added to the waste stream as part of the treatment process;

and

(b) Contributions from industrial sources do not cause the pH of the effluent to be less than 6.0 or greater than 9.0; and

(c) The discharge does not cause water quality violations outside of an approved dilution zone.

This is consistent with 40CFR133.102 which also requires secondary treatment for sewage treatment plants and the same effluent limitations.

26. Comment: Pollutant exceedances have been documented at this plant.

Response: Monitoring data from January, 2002, through June, 2007, were reviewed to determine the facility's compliance with the previous effluent limits. Review of these data found no violations of its effluent limits and no exceedances of any limits within the five year period.

27. Comment: Various source control options are available to improve the effluent such as reclaiming water, tracing sources and pretreatment. Each of these methods provides better source control for toxics, pharmaceuticals, bioaccumulatives, etc. thus providing more protection for listed species.

Response: Whidbey's Industrial Wastewater Management Plan is a pretreatment program. See Response to Comments 23 and 29.

28. Comment: The permit for this facility expired in 2003 and the permit is just now being reissued. Why is the permit reissuance process so lengthy? With such limited testing required during the permit term it is very important that the permit is reviewed and reissued at the end of five years.

Response: Because of the backlog of higher priority permits which must be issued EPA was unable to prepare a reissued permit for Whidbey. The testing is not limited and is the testing frequency found by EPA to protect aquatic life including listed species. See responses to Comments 17, 2, 20 and 6. When the permit was extended, all the conditions of the permit were extended including compliance with the monitoring conditions.

29. Comment: NMFS has not consulted on the Washington Surface Water Quality Standards (except for numeric criteria for temperature and DO) and numeric criteria are not established for many of the pollutants that may affect listed species. So compliance with these standards does not automatically equate to a not likely to adversely affect determination. Wastewater effluent can affect listed species, their prey, critical habitat, and EFH if sufficient exposures occur. The effluent likely has many compounds that could have different effects depending on exposures. To determine the likely effects, more information is needed on pollutants discharged in the effluent and how these pollutants are likely to affect ESA listed species, their prey (e.g., would the effluent affect identified sandlance spawning areas along the shoreline to the north of the treatment plant), critical habitat, and EFH. Pollutants of concern include nutrients, TSS, chlorine (including chlorinated by-products), temperature, metals (such as lead, mercury, zinc, and copper), hydrocarbons, pathogens, pesticides (e.g., DDT), PAHs, PCBs, PPCPs, flame retardants (e.g., PBBs and PBDEs), PCDDs, PFOs, TBT and DBT, PCPs, PCNs, APEs, PCTs, dioxins and furans.

Response: See Response to Comment 17.

1. EPA has not yet promulgated nutrient criteria for the protection of aquatic life nor is the area listed as impaired for phosphorus or any nutrient. If EPA develops criteria for any nutrient EPA will require applicable point sources including sewage treatment plants to this new surface water quality standard.
2. TSS is not a water quality criteria but a measure of the removal efficient of sewage treatment plants. It is also a measure of solids discharged to the receiving water of Puget Sound. The limits are established in WAC 173-221-040, Domestic Wastewater Facility Discharge Standards. This is consistent with 40CFR133.102 which also requires secondary treatment for sewage treatment plants and the same effluent limitations.

3. Chlorine is monitored and compliance with a surface water quality based effluent limitation is required in the permit. This limitation protects the beneficial uses of Puget Sound including listed species.
4. Chlorinated byproducts were not detected in the scan required in the permit application. Three scans will be required for the next permit application.
5. The chlorination system at Whidbey is designed to reduce pathogens and achieve the fecal coliform bacteria standards of 200 colonies/100ml monthly and 400 colonies/100ml weekly effluent limitations that protect the beneficial uses of Puget Sound.
6. Whidbey does not have a reasonable potential to violate the water quality standards for temperature. Temperature is monitored to ensure compliance with the water quality standards. Ecology consulted with NOAA on the water quality standard for temperature.
7. The permit requires monitoring of the six metals detected in the application. Once the discharges are characterized for metals EPA will ensure compliance with the water quality standards. The next permit application Form 2A Part D requires three complete scans for metals.
8. Chlorinated hydrocarbons and PAHs were not detected in the scan but will again be analyzed in three scans as required by the next application.
9. Polychlorinated biphenyls (PCBs) and Polychlorinated terphenyls (PCTs) are used as dielectrics in transformers and large capacitors (considered to be closed systems). Whidbey does not treat or dispose of transformers and PCBs and PCTs are not a pollutant from sewage treatment plants. For this reason PCB monitoring is not required for municipal treatment plants in Form 2A.

10. Personal Care Products and Pharmaceuticals (PCPP)

- EPA is aware of the increasing detection of pharmaceuticals and other contaminants of emerging concern in water and has developed a four pronged strategy designed to 1) strengthen the science, 2) improve public understanding, 3) identify partnerships and opportunities for stewardship and 4) take regulatory action when it is appropriate. The overall goal of the program is to determine whether the presence of these contaminants in water and other media pose risks to human health and/or aquatic life and if so, what would be the best way to address the problem.
- EPA is pursuing a broad agenda of activities to implement the strategy. Briefly, EPA is:
 - conducting studies on the occurrence of these contaminants in fish tissue, wastewater, drinking water and biosolids;

- supporting efforts for the development of drug take-back programs;
 - determining what the best management practices should be for industries such as the health care industry to prevent improper disposal of unused pharmaceuticals;
 - working with the Food and Drug Administration and the Office of National Drug Control Policy to revise the federal guidelines for the proper disposal of prescription drugs.
- As EPA awaits additional information from implementation of the scientific and regulatory prongs of the four pronged strategy, EPA will continue to seek partnerships, look for opportunities for stewardship and reach out to the public in order to prevent pollution of our waters from contaminants of emerging concern.
 - EPA anticipates that this issue will continue to be a high priority.
11. Flame retardants are a contaminant of emerging concern (CEC) and are addressed similarly to personal care products and pharmaceuticals.
 12. The sources of Polychlorinated dibenzodioxins (PCDDs), dioxins and furans are combustion, municipal waste incinerators, metal smelting, refining sources, chemical manufacturing sources and natural sources none of which are at Whidbey.
 13. Pentachlorophenol (PCP) is a preservative used to treat lumber and is regulated at wood treatment facilities but not at sewage treatment plants.
 14. Shipyard discharges were characterized for tributyltin. It was a preservative paint applied to hulls and application is now banned in the United States. Sewage treatment plant discharges are not characterized for tributyltin and from for the Whidbey naval air station nor is its breakdown product dibutyltin (DBT).
 15. Perfluorooctanyl sulfonate (PFOS) Working with EPA, industry has made substantial progress in reducing environmental loadings of PFOS and in moving toward a set of effective replacement products that offer a favorable environmental profile. Similar to PCPPs EPA will continue this approach to reduce the sources of PFOs.
 16. Polychlorinated naphthalenes (PCNs) Naphthalene was not detected during the Part D pollutant scan nor were any chlorinated hydrocarbon.
 17. Alkylphenol ethoxylates (APEs) are synthetic surfactants used in some detergents and cleaning products. In "Occurrence of Contaminants of Emerging Concern in Wastewater from Nine Publicly Owned Treatment Works, U.S. Environmental Protection Agency, Office of Water, EPA-821-R-09-009, August, 2009 EPA is in the process of characterizing CECs in POTW discharges including ACEs. The

approach used for personal care products and pharmaceuticals will be used for addressing concerns about ACEs. See 10 above.

18. Pesticides are a contaminants of emerging concern included in the Nine Publicly Owned Treatment Works study. The approach used for personal care products and pharmaceuticals will be used for addressing concerns about pesticides. See 10 above.

30. Comment: Bioaccumulatives. Many of the substances listed above bioaccumulate in species and the environment. How will mercury and other bioaccumulatives affect ESA species, their prey, critical habitat, and EFH?

Response: See Response to Comment 29.

31. Comment: Endocrine disrupters. Other compounds listed above are endocrine disrupters. A variety of endocrine disrupting chemicals have been detected in treated wastewater including natural and synthetic hormones, alkylphenolic compounds, phthalates, pesticides, polyaromatic hydrocarbons, polychlorinated biphenyls, metals and metal compounds. How will these compounds affect ESA species, their prey, critical habitat, and EFH?

Response: See Response to Comment 29.

32. Comment: Biosludge. Activities including biosludge management and disposal activities are considered an indirect effect of the action and must be analyzed in the Section 7 consultation. Where is the biosludge disposed and how is it managed? Will metals or other contaminants cause effects to listed species, critical habitat, or EFH?

Response: Leachate from biosolids does not discharge to Puget Sound which is miles from the collection site.

Table 2
 Naval Air Station Whidbey Island NPDES Permit Application
 Summary of Analytical Results from Discharge Analysis Report (URS 2001)

PARAMETER	Sample ID	B701068-02	B704062-02	B707237-02	B710306-01	B710307-02	B801147-02	B804374-02	B807147-02	B810116-01	B801088-02	B904036-02	B910084-02	E040032-03	B0D0083-02
Date Sampled	UNITS	1/7/97	4/2/97	7/10/97	10/16/97	10/16/97	1/2/98	4/16/98	7/8/98	10/5/98	1/7/99	4/1/99	10/25/99	1/11/00	4/26/00
Inorganic															
Arsenic	mg/L	ND	0.00253	0.004	ND	0.00237									
Cadmium	mg/L	0.00145	0.00104	0.000575	0.225	0.000565	ND	0.000275	ND	0.000202	ND	ND	ND	ND	ND
Chromium	mg/L	ND	ND	ND	0.16	ND	0.00153	ND	0.00131						
Copper	mg/L	ND													
Lead	mg/L	0.00573	0.00684	ND	0.411	ND	0.00117	ND	ND						
Mercury	mg/L	ND													
Nickel	mg/L	ND													
Silver	mg/L	ND													
Zinc	mg/L	ND													
Cyanide	mg/L	ND													
Organic															
Biological Oxygen Demand	mg/L	24	26	19	2	16	18	6	18	11	22	4	5	6	20
Oil and Grease	mg/L	1.48	4.02	2.95	ND										
1,4-Dichlorobenzene	ug/L	ND	4.12	ND	ND										
2-Methylnaphthalene	ug/L	ND	7.31	ND	ND										
3,8,4-Methylphenol	ug/L	ND	4.5	ND	ND										
4-Chloroaniline	ug/L	ND	2.42	ND	ND										
Benzoic Acid	ug/L	ND	102	ND	ND										
Benzyl alcohol	ug/L	ND	11.7	ND	ND										
Bis(2-ethylhexyl)phthalate	ug/L	ND	ND	34.9	26.2	28	28	ND	ND	3.29	ND	ND	13	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	5.67	ND	1.5	ND	ND						
Buryl benzyl phthalate	ug/L	ND	4.14	ND	ND										
Chloroform	ug/L	ND	ND	2.63	12.3	ND	ND	ND	ND	6.43	ND	ND	4.65	ND	ND
Dibromochloromethane	ug/L	ND	ND	ND	1.17	ND									
Diaryl phthalate	ug/L	ND	5.62	ND	ND										
D-n-butyl phthalate	ug/L	ND	3.14	ND	ND										
Methylene Chloride	ug/L	ND	7.58	ND	ND										
Naphthalene	ug/L	ND	6.58	ND	ND										
Phenol	ug/L	ND	13.2	ND	ND										
Toluene	ug/L	ND	ND	ND	1.08	ND	ND	ND	ND	1.41	ND	ND	ND	ND	ND
Physical/Conventional															
Total Suspended Solids	mg/L	72	106	12	3	32	4	4	4	12	8	4	6	3	20
Flashpoint	°F	>212	>212	>212	ND										
Temperature	°F	55	54	68	64	57	54	68	68	66	57	59	66	59	59
LEL	%	ND	ND	ND	ND	20.9	0	0	0	0	0	0	0	0	0
pH		7.4	8.2	7.2	7	7.4	7.4	7.4	7	7.4	7.2	7.3	7.1	7	7
Fecal Coliform	CFU/100 mL	ND													
Toxicity (EC50)	%	>100	>52.9	>52.9	>52.9	>52.9	>52.9	>52.9	>52.9	>52.9	>52.9	40.19	ND	>52.9	>52.9
Methylene Blue Active Substances	mg/L	0.153	0.145	1.96	0.115	ND	ND	ND	ND	0.0686	ND	ND	0.187	ND	ND

Notes:
 -- = Not Analyzed
 ND = Not Detected