

RESPONSE TO COMMENTS

City of Ketchikan Charcoal Point Wastewater Treatment Plant Permit Number AK-002144-0

A draft National Pollutant Discharge Elimination System (NPDES) permit for the City of Ketchikan, Charcoal Point Wastewater Treatment Plant was issued for Public Notice on October 13, 2000 in the Ketchikan Daily News. The Public Notice initiated a 30-day public comment period expiring on November 13, 2000. The Environmental Protection Agency (EPA) received written comments from the permittee dated November 8, 2000.

This Response To Comments document is a summary of the significant comments related to the draft NPDES permit and the EPA's responses. Comments received on the Fact Sheet are addressed in this document as they relate to the permit language/conditions. The Section of the permit the comment refers to is identified in parentheses at the end of the comment.

- 1 **Comment and additional information:** The City provided EPA with additional monitoring data, taken from monthly Discharge Monitoring Reports, that demonstrates that the wastewater treatment plant's greatest concentration of five-day Biochemical Oxygen Demand (BOD₅) is actually 146 mg/L (not 126 mg/L as indicated in the draft permit and fact sheet). The City also indicated that the design flow for the wastewater treatment plant is 7.2 million gallons per day (mgd, Section I.F Table 5).

Response: The concentration limits for BOD₅ and Total Suspended Solids (TSS) for the treatment plant are based on what the facility is capable of achieving (i.e., the greatest average monthly concentration for the past five years). The monitoring information provided demonstrates that the monthly average limit for BOD₅ should be 146 mg/L. In response to this new information, the concentration limit for BOD₅ has been corrected in Table 1 of the permit.

Following the public notice of Ketchikan's draft permit, the EPA received an NPDES application and a section of the facilities Operation and Maintenance Manual that indicates that the design flow of the facility is 7.2 mgd and not 4.0 mgd (as indicated in previous applications). Therefore, Section I.F of the permit (more specifically, Table 5 - Design Criteria Requirements) has been changed. In addition, the mass-based limits for TSS, total copper, and total zinc have been updated in Table 1 using the 7.2 mgd design flow. The mass-based limits for BOD₅ would generally be 8,767 lbs/day (calculated as: 146 mg/L × 8.34 conversion factor × 7.2 mgd). However, federal regulation 40 CFR 125.67 prohibits any increase in discharge of pollutants to which the 301(h) waiver applies. This means that the volume of BOD₅ and TSS may not increase beyond that previously permitted. Therefore, the mass-based limit for BOD is 7,400 lbs/day (consistent with the previous 1984 NPDES permit).

2. **Comment:** Ketchikan requests that the sample location for the flow monitoring be changed from “effluent” to “influent” (Section I.B.3, Table 2).

Response: The effluent monitoring table (Table 2) has been changed to reflect the request. Influent monitoring should be similar to effluent monitoring with any differences resulting in more conservative values.

3. **Comment:** Ketchikan requests that total ammonia effluent monitoring be discontinued if the monitoring in the first year complies with theoretical permit limits. Ketchikan does not perceive a problem with ammonia (Section I.B.3, Table 2).

Response: It is difficult to identify compliance with the regulatory criteria for total ammonia because the criterion is dependent upon salinity, pH, and temperature. However, in order to avoid unnecessary monitoring the EPA has identified the following total ammonia “trigger” value. If the ammonia concentration in the effluent is below the trigger value during the first year of monitoring then total ammonia effluent monitoring can be discontinued for the remainder of the permit term.

The trigger was determined by using 95th percentile effluent pH and temperature data. Effluent (not in-stream) values were used because mixed pH and temperature cannot be accurately calculated using a mass-based equation. The EPA generally uses the DESCONE program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. U.S. EPA Office of Water, Washington D.C.) when determining downstream pH. However, background and effluent alkalinity are required for the model and not available.

Using an effluent pH value of 7.5 standard units, effluent temperature of 11EC, and Tongass Narrows salinity of 25 g/kg, the trigger for total ammonia is **43 mg/L**. This trigger has been included as a footnote in Table 2 Influent/Effluent Monitoring Requirements.

4. **Comment:** Enterococci bacteria analysis is for assessing recreational waters and is not currently regulated by the State of Alaska. Therefore, Ketchikan requests an exemption from effluent and ambient testing. According to the Ketchikan Public Health Center, there has not been any case of swimming associated infection or disease from swimming in the Tongass Narrows.

Response: Enterococci bacteria monitoring was proposed in the draft permit because the Alaska Department of Environmental Conservation (ADEC) expressed some interest in replacing it for the current fecal coliform criteria. Replacing fecal coliform criteria with E. coli (for freshwater discharges) and Enterococci bacteria (for marine water discharges) is consistent with the EPA’s Draft Guidance (*Implementation Guidance for Ambient Water Quality Criteria for Bacteria 1986*, EPA-823-D-00-001). If ADEC’s criterion for primary and secondary contact does change, monitoring will be necessary and requested of the permittee. In the meantime, the effluent and ambient monitoring has been removed from the final permit.

5. **Comment:** Ketchikan requests that fecal coliform monitoring be changed from five times per month to four times per month consistent with the BOD₅, TSS, and pH monitoring frequency (Section I.B.3, Table 2).

Response: The EPA has changed the fecal coliform monitoring frequency in Table 2 to once per week in order to allow the permittee to take advantage of concurrent lab analysis.

6. **Comment:** Ketchikan requests that whole effluent toxicity (WET) testing be reduced from semiannually to twice during the permit term (during the first and fifth years of the permit). The treatment plant does not have any significant industrial users and the results of the industrial survey show little potential for toxic releases to the system (Section I.B.3, Table 2).

Response: The EPA agrees that limited WET testing is appropriate in this case and has changed Table 2 and Section I. C. of the permit to reflect testing in years one and five of the permit.

7. **Comment:** Ketchikan requests monthly effluent monitoring of copper and zinc only during the first and last years of the permit if the monitoring demonstrates compliance with the effluent limits. There are no local laboratories available to perform these analyses (Section I.B.3).

Response: Monitoring of total copper and total zinc is necessary throughout the entire permit term. The effluent monitoring is required to determine compliance with the effluent limitations in the permit. However, the EPA has decreased the draft monitoring frequency from twice a month to once per month in Table 2.

8. **Comment:** Receiving water quality monitoring for turbidity, salinity, dissolved oxygen, pH, and temperature should be eliminated. Water quality monitoring for these parameters have been conducted since 1987 and has shown no adverse effects (Section I.B.4).

Response: NPDES permits containing 301(h) waivers from secondary treatment must comply with federal regulations found under 40 CFR 125.56-68. These regulations include demonstrating that the discharge will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which assures protection of public water supplies and protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife, and allows recreational activities, in and on the water (40 CFR 125.57(a)(2)). More specifically, regulation 40 CFR 125.63(c) requires a water quality monitoring program to provide data for evaluating compliance with water quality criteria. In addition, ambient monitoring data is useful in explaining any differences that may be detected in the biota during the benthic surveys.

Ambient monitoring has been retained in the final permit however, the time for sampling has been changed from once a month in "July, August, and September" to "March, April, and October." This change in season will provide data during a different time period than previously gathered and potentially avoid the hazard of cruise ships that dock nearby during the summer. In addition, the depth of the monitoring for salinity and temperature has been changed from every 3 meters to the surface, mid-depth, and bottom. This change is

consistent with the other ambient parameters and sufficient for modeling purposes.

9. **Comment:** Ketchikan requests that monthly ambient total ammonia monitoring be suspended due to the dilution available in a mixing zone (Section I.B.4).

Response: Ambient total ammonia data is useful, upon permit reissuance, if the effluent monitoring has the reasonable potential to violate state water quality standards. If reasonable potential is found and permit limits are required for total ammonia, the ambient monitoring will help determine how much capacity is available in the Tongass Narrows for the discharge.

The EPA has reduced the number of total ammonia station locations from four to one background site (outside of the mixing zone). In addition, the monitoring season has changed to March, April, and October (consistent with the other ambient parameters except fecal coliform).

10. **Comment:** Ketchikan requests that ambient monitoring of copper and zinc be suspended because Ketchikan will be sampling effluent at least once per month (Section I.B.4).

Response: Similar to the response to comment #9 (for total ammonia), background data for total copper and total zinc is needed when the permit is reissued. When the EPA calculated the reasonable potential for exceedence and the effluent limits for copper and zinc, a background concentration of zero was assumed. The ambient monitoring will verify or disprove that assumption. In addition, federal regulation 40 CFR 125.63(c)(2) requires a water quality monitoring program that measures the presence of toxic pollutants which have been identified or reasonably may be expected to be present in the discharge. The ambient monitoring has been retained in the final permit and the season has been changed to March, April, and October consistent with the other parameters.

11. **Comment:** The fecal coliform monitoring should be reduced to once per quarter due to the mixing zone provided by ADEC. Ketchikan anticipates that the monitoring may overlap with contributions from nonpoint sources, the airport wastewater treatment plant, and vessels (Section I.B.4).

Response: The fecal coliform monitoring frequency has been included in the final permit consistent with ADEC's 401 certification. The purpose of the ambient monitoring is to confirm the accuracy of the modeling, see if the discharge plume overlaps with other discharges, and determine compliance with State water quality standards. The permit allows the fecal coliform ambient monitoring to be discontinued, upon the EPA's approval, after two years if there is compliance with the water quality standards. The monitoring frequency has been retained in the final permit.

In addition to the monitoring frequency, ADEC certified six ambient fecal coliform stations. The following stations replace those in the draft permit and include:

- Zone of Initial Dilution (ZID) boundary upstream from discharge between Heliport and East Clump1
- Shoreline between Tanks and Boat Ramp2
- Shoreline near Bore 1
- Outside the ZID near Bore 1
- Outside the ZID between Lee 1 on Revillagigedo Island and International Airport1
- Outside ZID upstream from discharge near Tidal flat 1

12. **Comment:** Ambient enterococci bacteria monitoring should be eliminated (Section I.B.4).

Response: The monitoring has been removed from the final permit. See response # 4.

13. **Comment:** Ketchikan requests that benthic grabs and sediment samples be conducted at least once during the permit cycle to coincide with maintenance dives instead of twice during the permit cycle. The photographs of the outfall from the August 4, 1997 and September 16, 1998 maintenance dives are attached (Section I.B.5).

Response: The EPA has changed the requirement to sample twice during the permit cycle to at least once during the permit cycle to coincide with maintenance dives. Biological monitoring is required in NPDES permits receiving a 301(h) waiver consistent with regulation 40 CFR 125.63(b). The monitoring program must be adequate to evaluate the impact of the discharge on the biota and include periodic surveys of the biological communities. The sediment and benthic sampling are necessary to confirm whether the discharge continues to not have an adverse effect on the marine biota.

Additional 401 Certification Conditions

14. **Condition:** ADEC requires that at least one sign be placed on the shoreline near the mixing zone and the outfall line. The sign(s) should state that primary treated domestic wastewater is being discharged, that mixing zones exist and certain activities should not take place within the mixing zones. The sign should also have the name and owner of the facility, approximate location and size of the mixing zones and give a facility contact phone number for additional information.

Response: The requirement has been included in Section I.F Notification of Primary Treated Discharge of the permit.

15. **Condition:** A mixing zone has been certified for fecal coliform, this is different than the smaller zone of initial dilution (ZID) provided for dissolved oxygen, pH, total chlorine, nutrients, temperature, metals, and whole effluent toxicity.

Response: Section I.B.4 Receiving Water Quality Monitoring Requirements has been corrected so that the fecal coliform ambient monitoring stations are in relation to the mixing zone and not the ZID.

Additional Changes

16. **Permit change:** In order to ensure that test methods are used that are sensitive enough to detect concentrations below the effluent limits, EPA included a new section in the permit (Section I.C Method Detection Limits). This section states that methods be used that can achieve a method detection limit (MDL) equal to 0.1 times the effluent limitation or the most sensitive EPA approved method, whichever is greater. In addition, a footnote was added to Table 3 Receiving Water Quality Monitoring that requires that the same test methods be used during the ambient monitoring for copper and silver as for the effluent monitoring.