RESPONSE TO COMMENTS

City of Ketchikan – Charcoal Point Wastewater Treatment Plant
NPDES Permit AK0021440

SUMMARY

On April 15, 2025, the U.S. Environmental Protection Agency Region 10 (EPA) issued a public notice for the proposed National Pollutant Discharge Elimination System (NPDES) permit and the tentative Clean Water Act (CWA) 301(h) decision for the City of Ketchikan's Charcoal Point Wastewater Treatment Plant (WWTP). The public comment period closed on May 30, 2025.

This document presents the EPA's response to comments received during the public comment period and changes to the final permit.

During the public comment period, the EPA received comments from:

- City of Ketchikan (Ketchikan)

CHANGES IN RESPONSE TO PUBLIC COMMENT

As a result of comments received during the comment period, the following revisions were made to the final permit from the draft permit and the final decision document from the tentative decision document (TDD):

- The cover page of the permit has been revised to state: "…*City of Ketchikan, Alaska Charcoal Point Wastewater Treatment Plant Ketchikan, Alaska 99901 is authorized to discharge from the wastewater treatment facility located in Ketchikan, Alaska*…" [See Comment/Response 1]
- Permit Part I.A. has been revised to state: "...*permittee is authorized to discharge pollutants from the outfalls specified herein to the Tongass Narrows*." [See Comment/Response 2]
- Recalculated performance-based TSS limits have been included in Permit Part I.B.1. – Table 1. [See Comment/Response 3]
- Dissolved oxygen (DO) limits have been removed from Permit Part I.A. – Table 1 of the permit. [See Comment/Response 6]
- Permit Part I.C.2. has been modified to include inland silverside (Test Method 1006.0) as an alternative fish species in the event topsmelt is unavailable from suppliers. [See Comment/Response 9]
- Permit Part I.D. has been revised to read that receiving water monitoring "…*must be conducted during the lowest daylight slack tide of the monitoring month, unless impractical for safety or logistical concerns (i.e., inclement weather or insufficient staffing)*." [See Comment/Response 10]
- A new footnote has been included in Permit Part I.D. – Table 4, which reads: "*Receiving water measurements for temperature, salinity, DO, pH, and turbidity must be collected as continuous water column profile measurements using a calibrated water quality instrument to measure from surface to near-bottom*." [See Comment/Response 11]
- Permit Part I.D. Table 4, Footnote 6 has been revised to read: "*Receiving water monitoring for fecal coliform can be discontinued if the permittee achieves 12 consecutive months of compliance with the final fecal coliform effluent limits. In the event of any violation of the final fecal coliform effluent*

limits, the permittee must restart the receiving water monitoring for fecal coliform until 12 consecutive months of compliance is achieved." [See Comment/Response 13]

- Language has been included in Permit Part I.E.3. which requires that in addition to physical samples, "…visual monitoring of the sampling locations shall be performed using commercially available underwater video equipment, an underwater drone/vehicle, or a diver." In addition, Permit Part I.E.5. have been revised to read: "…pictures or videos of the individuals will be taken,…" (underline added for emphasis).
- Permit Part II.C. – Table 5, Task 4 has been updated to read: "*The permittee must submit a construction started report to EPA and ADEC no later than four years and 14 days after the effective date of the permit*." [See Comment/Response 15]
- A footnote has been added to Permit Part II.D.1.a. that reads: "*The permittee must perform effluent analyses for 2,3,7,8-TCDD only during the first two years of testing. However, if 2,3,7,8-TCDD is detected in the first two years of testing results, then effluent analyses for 2,3,7,8-TCDD must continue annually*." [See Comment/Response 16]

CHANGES AS A RESULT OF FINAL 401 CERTIFICATION

No changes were made to the permit as a result of final 401 certification.

RESPONSE TO COMMENTS ON NPDES PERMIT

Comment 1

NPDES DRAFT PERMIT AK-002144-O CHARCOAL POINT WWTP, COVER PAGE (Page 1)
The Draft Permit cover pages: "City of Ketchikan, Alaska Charcoal Point Wastewater Treatment Plant Ketchikan, Alaska 99901 is authorized to discharge from the wastewater treatment facility located in Sitka, Alaska".

NPDES Permit Comment #1 (Cover Page)
Ketchikan is requesting that the cover page be revised to state: ""City of Ketchikan, Alaska Charcoal Point Wastewater Treatment Plant Ketchikan, Alaska 99901 is authorized to discharge from the wastewater treatment facility located in Ketchikan, Alaska".

Response 1

The EPA agrees with the comment and acknowledges that there was a typographical error on the cover page. The cover page has been revised to state: "…City of Ketchikan, Alaska Charcoal Point Wastewater Treatment Plant Ketchikan, Alaska 99901 is authorized to discharge from the wastewater treatment facility located in *Ketchikan*, Alaska…"

Comment 2

I. LIMITATIONS AND MONITORING REQUIREMENTS
A. Discharge Authorization (Page 6)
The permit text states: "permittee is authorized to discharge pollutants from the outfalls specified herein to the Frederick Sound".

NPDES Permit Comment #2 (Section 1.A)

Ketchikan is requesting that this sentence be revised to state: "permittee is authorized to

discharge pollutants from Outfall 001 located in Tongass Narrows".

Response 2

The EPA agrees with the comment and acknowledges that there was a typographical error in Section 1.A of the draft permit. The EPA has revised Permit Part I.A. to state: "...permittee is authorized to discharge pollutants from the outfalls specified herein to the *Tongass Narrows*."

Comment 3

B. Effluent Limitations and Monitoring (Page 6)

Table 1. Effluent Limitations and Monitoring Requirements

BOD_5 and TSS

Effluent limits specified in Table 1 were developed by EPA through analyses of influent and effluent data (2019-2024) for BOD_5 and TSS to establish performance-based effluent concentration limits, and then calculate revised mass load limits. These revised performance-based effluent limits include the following changes from the existing NPDES Permit:

- Effluent BOD conc. limits reduced from 146 mg/L to 143 mg/L (Monthly Avg.) and added new 190 mg/L (Weekly Avg.)
- Effluent BOD mass limits reduced from 7,400 lbs/d to 4,770 lbs/d (Monthly Avg.) and added new 6,338 mg/L (Weekly Avg.)
- Effluent TSS conc. limits reduced from 129 mg/L to 49 mg/L (Monthly Avg.) and added new 65 mg/L (Weekly Avg.)
- Effluent TSS mass limits reduced from 7,746 lbs/d to 1,635 lbs/d (Monthly Avg.) and added new 2,168 mg/L (Weekly Avg.)

Effluent BOD_5 and TSS limits were calculated by EPA based on wastewater removal performance over last 5 years and not the 30% removal effectiveness required in Section 301(h) of the Clean Water Act. The reduced TSS concentration limit of 49 mg/L proposed in the Draft NPDES Permit is close to the technology limit of primary clarification of wastewater. Wastewater effluent concentrations and removal efficiency are determined by dry and wet season influent concentrations and flows.

Ketchikan used Charcoal Point WWTP monthly average effluent TSS concentration data for January 2020 to March 2025 to develop the plot shown in Figure 1 below. This plot of monthly average effluent TSS concentrations demonstrates that the proposed revised monthly average TSS effluent limit (49 mg/L) presented in the Draft NPDES Permit is likely to be exceeded. These TSS data show that the proposed revised monthly average TSS effluent limit (49 mg/L) was exceeded 17% of the time in recent years.

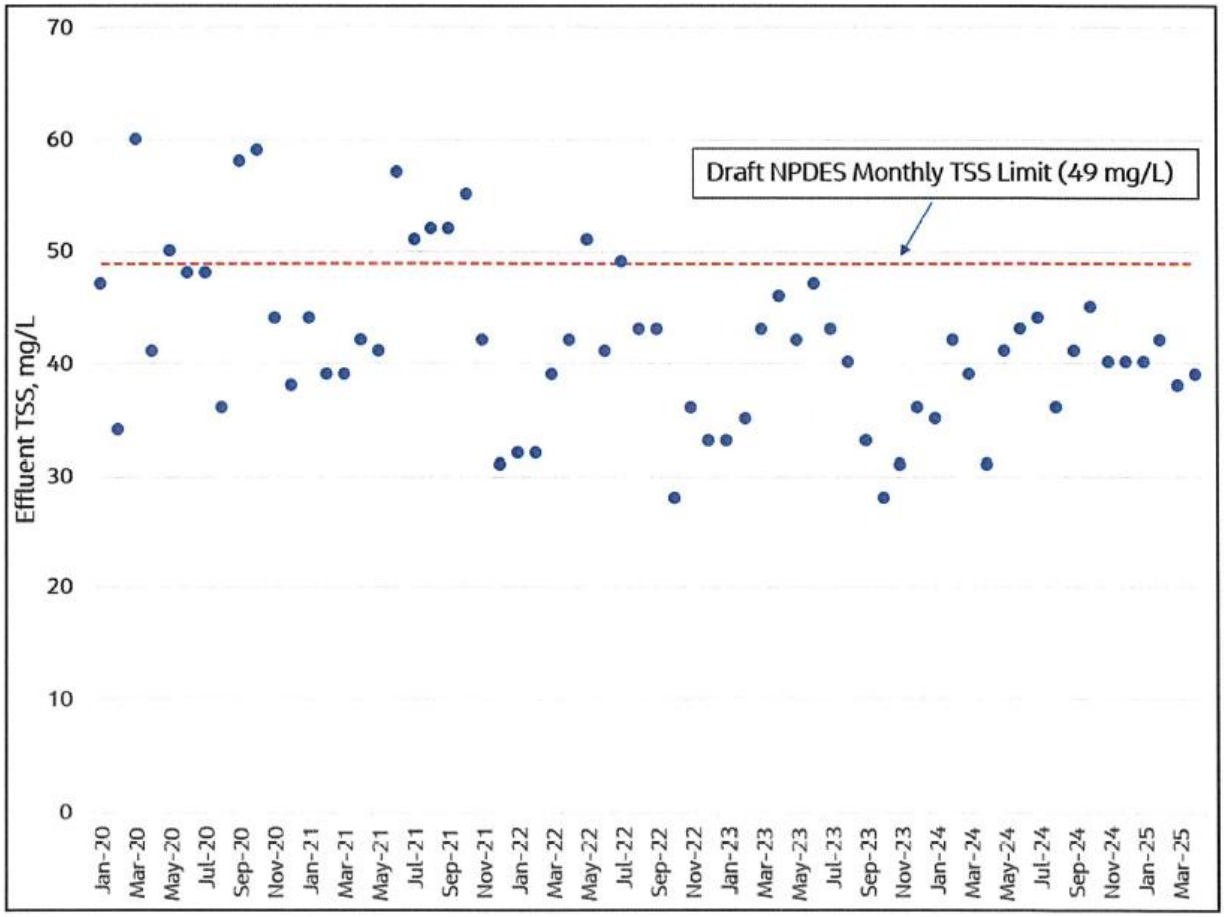

Figure 1. Plot of Monthly Average Effluent TSS Data for January 2020 to March 2025

NPDES Permit Comment #3 (Table 1)

Ketchikan is requesting that the revised monthly average TSS effluent limit be set at no lower than 60 mg/L. Ketchikan is also requesting that a new footnote be included in Table 1 in the NPDES permit stating the following: 'Effluent BOD5 and TSS limits were calculated based on past removal performance and not the 30% removal effectiveness required in Section 301(h) of the Clean Water Act, and these effluent limits may be revised or increased up to the minimum 30% removal effectiveness required in the Clean Water Act without triggering anti-backsliding conditions."

Response 3

During permit development the EPA typically evaluates the past five years of effluent data, which corresponds with the five-year NPDES permit cycle in 40 CFR 122.46. To better assess the performance of the Ketchikan WWTP over a longer period, the EPA requested data for all weekly TSS samples collected at the facility since 2015, which demonstrated effluent variability that was not captured in only reviewing the past 5 years of data. To account for this variability, the EPA calculated new performance-based TSS limits that are representative of the discharge over a 10-year period. The new TSS performance-based limits are:

Concentration Limits

Average Monthly: 56 mg/L

Average Weekly: 81 mg/L

Loading Limits

Average Monthly: 56 mg/L X 4.0MGD X 8.34 = 1,859 lbs/day

Average Weekly: 81 mg/L X 4.0MGD X 8.34 = 2,711 lbs/day

The EPA has incorporated these recalculated limits in the final permit at Permit Part I.B.1. – Table 1. See Appendix A for the concentration-based TSS limit calculations and data.

At the next permit cycle, the EPA will evaluate current effluent and receiving water data to determine the appropriate and representative effluent limits for the facility. If effluent limits are less stringent than the previous effluent limits, the EPA will determine whether any of the antibacksliding exceptions apply. As such, it is unnecessary to add the antibacksliding footnote suggested by the commenter.

Comment 4

Copper and Zinc

Effluent limits specified in Table 1 for copper and zinc were developed by EPA through analyses of effluent data (April 2019-February 2024) to establish performance-based effluent concentration limits in accordance with Section 301(b)(1)(C) of the Clean Water Act to meet water quality standards. These revised performance-based effluent limits for copper and zinc include the following changes from the existing NPDES Permit:

- Effluent Total Copper concentration limits reduced from 157 ug/L to 39 ug/L (MA) and 290 ug/L to (Max. Day) [existing reported maximum Cu is 54.2 ug/L]
- Effluent Total Zinc concentration limits reduced from 4,682 ug/L to 552 ug/L (MA) and 9,384 ug/L to 1107 ug/L (Max. Day) [existing reported maximum Zn is 95 ug/L]

Wastewater influent and effluent concentrations of copper and zinc are determined by the City's drinking water source, collection system pipe corrosion, groundwater infiltration into the collection system, and other minor sources. The primary treatment system at the Charcoal Point WWTP is not designed for removing influent copper and zinc concentrations other than with suspended solids removal.

NPDES Permit Comment #4 (Table 1):

Ketchikan is requesting that a new footnote be included in Table 1 in the NPDES permit stating the following: “Effluent copper and zinc limits calculated based on past effluent monitoring data may not reflect effluent monitoring data collected during this permit period and the Charcoal Point WWTP does not treat to remove copper and zinc, therefore these new effluent limits may be revised or increased without triggering Antibacksliding conditions."

Response 4

As explained in the fact sheet, the discharge from the WWTP has reasonable potential to cause or contribute to an excursion above Alaska's water quality standards for copper and zinc ("reasonable potential"). Pursuant to 40 CFR 122.44(d)(1)(i), when there is reasonable potential, water quality-based effluent limitations (WQBELs) must be established in the permit. As such, the EPA calculated WQBELs for copper and zinc and included them in the draft permit. While facility performance is taken into consideration when evaluating whether a discharge has reasonable potential to cause or contribute to an excursion above water quality standards (WQS), the calculation of WQBELs is not based on facility performance or the concentration of pollutants within the discharge. Rather, WQBELs are calculated taking into consideration effluent flow, the physical and chemical characteristics of the receiving water, and applicable WQS. As shown in Appendix E – Table 18 of the fact sheet, the EPA calculated WQBELs using Alaska's water quality criteria and the acute and chronic mixing zones authorized by the Alaska Department of Environmental Conservation (ADEC).

At the next permit cycle, the EPA will evaluate current effluent and receiving water data to determine the appropriate WQBELs for the facility. If effluent limits are less stringent than the previous effluent limits, the EPA will determine whether any of the antibacksliding exceptions apply. As such, it is unnecessary to add the footnote suggested by the commentor.

No changes have been made to the permit as a result of this comment.

Comment 5

Fecal Coliform and Enterococcus.

Effluent limits specified in Table 1 for Fecal Coliform bacteria include Interim limits for undisinfected wastewater discharges during the new permit period until the new disinfection system is operational in 2030. The Fecal Coliform concentrations specified as Interim limits will require the continuation of the existing Fecal Coliform Mixing Zone defined in Section 1.B.4 Receiving Water Quality Monitoring Requirements in the existing NPDES Permit for the wastewater discharge to meet Alaska water quality standards for bacteria at the mixing zone boundary. The existing Fecal Coliform Mixing Zone defined in Section 1.B.4 Receiving Water Quality Monitoring Requirements is stated as follows:

"The fecal coliform mixing zone is defined as the area contained 30 meters above a 3,200 m long (1,600 m on each side of the diffuser running parallel to the shoreline), by 250 m wide rectangle (125 m on either side of the diffuser perpendicular to the shoreline)."

Effluent limits specified in Table 1 for Enterococcus bacteria include Interim limits to monitor and report measured concentration until the new disinfection system is operational in 2030. It is reasonable to assume that wastewater discharges of Enterococcus bacteria prior to the new disinfection system operation will also require the inclusion of the existing Fecal Coliform Mixing Zone to meet Alaska water quality standards for bacteria.

NPDES Permit Comment #5 (Table 1)

Ketchikan is requesting that a new footnote be included in Table I in the NPDES permit stating the following:

During the permit period with Interim limits for Fecal Coliform and Enterococcus (prior to operational

disinfection) the following Fecal Coliform Mixing Zone will remain in effect and include Enterococcus bacteria: "The fecal coliform and Enterococcus mixing zone is defined as the area contained 30 meters above a 3,200 m long (1,600 m on each side of the diffuser running parallel to the shoreline), by 250 m wide rectangle (125 m on either side of the diffuser perpendicular to the shoreline)."

Response 5

ADEC included the final enterococcus and fecal coliform effluent limits, mixing zones, and compliance schedule as conditions of its CWA 401 certification. ADEC's notice of review of the draft 401 certification was provided to the permittee at the beginning of the public comment period on April 15, 2025. As noted on page 2 of the fact sheet, comments regarding the terms and conditions of the draft 401 certification (included as Appendix G in the fact sheet) should have been directed to ADEC. Please refer to the response to comments document ADEC has developed for comments related to the conditions of the 401 certification.

The mixing zones were not used to calculate the interim fecal coliform effluent limits in the permit. As explained on page 37 of the fact sheet, interim fecal coliform limits were derived by analyzing effluent data over the last five years and taking the maximum of weekly geometric mean values, and the 95th percentile of weekly and monthly geometric mean values, for the maximum daily, average weekly, and average monthly interim limits, respectively. The facility does not have to meet the final fecal coliform limits until five years after the effective date of the permit.

There are no interim enterococcus limits in the draft permit. The final enterococcus limits in the draft permit are conditions of Alaska's 401 certification. A compliance schedule has been authorized by ADEC and included in the permit; the facility does not have to meet the final effluent limits until five years after the effective date of the permit.

No changes have been made to the draft permit as a result of this comment.

Comment 6

Dissolved Oxygen.

Table 1 in the Draft NPDES Permit includes effluent limits of 5.0 to 17.0 mg/L for dissolved oxygen (DO). These effluent limits for DO are new limits and are not necessary. The Draft NPDES Permit Fact Sheet states: "The analysis indicates the effluent BOD5 will result in a worst-case DO depletion of O.2mg/L at the boundary of the ZID at the bottom of the receiving water, with a final BOD5 concentration of 5.0 mg/L after initial mixing. These results indicate that both near field and far field DO impacts meet Alaska WQS. For a complete analysis of DO please refer to Appendix E of the 301(h) TDD. Based on the above analyses and that presented in the 301(h) TDD, the discharge will not contribute to an excursion above Alaska WQS for DO. The permit retains the DO limits from the 2001 permit to ensure the facility continues to meet Alaska WQS."

The last sentence in this paragraph in the Draft Fact Sheet is incorrect since the existing NPDES permit does not include effluent DO limits for the Charcoal Point WWTP, only monitoring of effluent DO.
As defined under ADEC Criteria for Water Quality Impairment of Conventional Pollutants in the Alaska Consolidated Assessment and Listing Methodology (ADEC, 2021), reduction in receiving water DO under critical conditions (4 mg/L at depths below the surface) must be limited to less than a 10% reduction in

ambient DO due to a discharge source. The following mass balance equation was used to calculate the mixed effluent and receiving water DO concentration after rapid mixing near the Ketchikan outfall diffuser:

$$\frac{(RW\ conc * DF - 1) + Efflt\ conc = Mixed\ cone}{DF}$$

Where: RW conc is receiving water concentration; Efflt conc is effluent concentration; and DF is the dilution factor. Assuming a worst-case effluent discharge of 1 mg/L DO concentration into receiving waters near the outfall diffuser with 4 mg/L DO concentration demonstrates that a dilution of 8 would be sufficient to avoid a 10% reduction in ambient DO. Assuming the defined dilution of 11.8 at the proposed DEC acute zone boundary (10 meters from diffuser), results in a calculated reduction of only 6.4% in ambient DO (for an effluent DO of 1 mg/L). These calculations show that even a worst-case effluent DO of 1 mg/L into receiving waters near the outfall diffuser with 4 mg/L DO concentration would not exceed the 10% reduction in ambient DO due to an effluent discharge.

In addition, ADEC has included a mixing zone for dissolved oxygen in the 401 Certification in Appendix G of the Permit Fact Sheet.

NPDES Permit Comment #6 (Table 1)

Ketchikan is requesting that the dissolved oxygen effluent limits of 5.0 to 17.0 mg/L be removed from Table I in the NPDES Permit and effluent dissolved oxygen monitoring be retained in Table 1 as monitoring only.

Response 6

The EPA acknowledges that the prior permit does not contain DO limits and that the DO limits in the draft permit were included in error. The EPA used the data gathered during the existing permit cycle to conduct a reasonable potential analysis and concluded there is no reasonable potential for DO to cause or contribute to an excursion of Alaska's WQS for DO (see fact sheet, pg. 34). The EPA stated in the fact sheet that the DO limits from the previous permit would be retained; however, as stated above, the previous permit did not contain DO limits. Thus, this statement was incorrect. Since there is no reasonable potential and there were no DO limits in the previous permit, the EPA has removed the DO limits from Permit Part I.A - Table 1 and DO monitoring has been added.

Comment 7

1.B.9 PFAS Monitoring (Page 10)

The NPDES Permit Section 1.B.9 requires monitoring for PFAS chemical in influent, effluent and biosolids (sludge) during two years in the permit period. In addition, Permit Section l.B.9.c states: "If any PFAS chemicals are detected in influent, effluent or sludge sampling completed by three years after the effective date of the permit, the permittee must sample the discharges of industrial users identified as potential sources of PFAS chemicals in the inventory required by Permit Part Il.D.g. at least once for the PFAS chemicals listed in Table 2." Ketchikan recommends that EPA should include a threshold level of detected PFAS chemicals that would trigger this requirement to sample the discharges of industrial users identified as potential sources of PFAS chemicals, rather than any detection in influent, effluent or sludge samples.

NPDES Permit Comment #7

Ketchikan is requesting that Permit Section I.B.9.c text be modified to read: "If any PFAS chemicals are detected in influent, effluent or sludge samples at concentrations above EPA's recommended freshwater chronic water quality criterion or above EPA"s saltwater acute water quality benchmark (EPA-842-R-24-002 and EPA-842-R-24-003, September 2024), then the permittee must sample the discharges of industrial users identified as potential sources of PFAS chemicals in the inventory required by Permit Part II.D.g. at least once for the PFAS chemicals listed in Table 2."

Response 7

As discussed in the April 2025 fact sheet, the purpose of these monitoring and reporting requirements is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of WQBELs. In December 2022, the EPA released a guidance memo[1] to the EPA Regions and states for addressing PFAS in NPDES permitting. The memo recommends PFAS monitoring for all POTW permits since they are known contributors of PFAS into the aquatic environment through a variety of industrial, commercial, and consumer sources, and that monitoring should include each of the "detectable" 40 PFAS parameters. The permit conditions reflect the recommendations in the memo as well as the EPA's commitments in the PFAS Strategic Roadmap, which directs the Office of Water to leverage NPDES permits to reduce PFAS discharges to waterways "at the source," and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources. The EPA has not developed PFAS criteria or exposure benchmarks for salt water. The only benchmark applicable to saltwater is for PFOS. The PFOS saltwater benchmark is orders of magnitude higher than the method detection limit (0.55 mg/L[2] vs. 0.63 ng/L[3]). The PFAS benchmarks and criteria applicable to freshwater are also orders of magnitude higher than their respective MDLs. Since PFAS monitoring is to include each of the "detectable" PFAS parameters,[1] and the benchmarks and criteria are orders of magnitude higher than the method detection limits,[2,3] adding a benchmark or criteria threshold for PFAS reporting is not consistent with the intent or direction of the guidance memo[1] or Strategic Roadmap.

No changes were made to the permit as a result of this comment.

Comment 8

The Draft NPDES Permit does not include definitions of the EPA's defined Zone of Initial Dilution (ZID) or the ADEC's defined Acute and Chronic Mixing Zones (include only in Appendix G -ADEC Certificate of Reasonable Assurance for Section 401 of Clean Water Act). Since the Charcoal Point WWTP is required to monitor effluent and receiving waters to comply with Alaska Water Quality Standards at the EPA's ZID and ADEC's defined Acute and Chronic Mixing Zones, these mixing zone regions definitions must be included in the NPDES Permit. In addition, the Interim effluent limits for Fecal Coliform bacteria specified in Table 1 require continuation of the existing Fecal Coliform Mixing Zone to meet Alaska water quality standards for bacteria until the disinfection improvements are operational.

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[1] Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs, Office of Water, USPEA, December 2022.

[2] Final Recommended Aquatic Life Criteria and Benchmarks for Select PFAS – Fact Sheet. September 2024.

[3] Draft National Recommended Human Health Ambient Water Quality Criteria for PFOA, PFOS, and PFBS – Technical Fact Sheet. December 2024.

NPDES Permit Comment #8 (Section l.B.)

Ketchikan is requesting that Section 1.B in the NPDES Permit include a new section 1.B.10 in the NPDES Permit with definitions for the following three mixing zones for the Charcoal Point WWTP outfall:
"Zone of Initial Dilution (ZID) consists of a rectangle 64 meters in length (32 meters north and south of the diffuser) and 125 meters in width (perpendicular to shore), centered on the outfall diffuser. The critical initial dilution at the ZID is 52."
"Acute and Chronic Mixing Zones include an Acute Mixing Zone as a rectangular area with a length of 20 meters (parallel to the shoreline) and width of 62 meters centered over the diffuser; and a Chronic Mixing Zone as a rectangular area with a length of 28 meters (parallel to the shoreline) and width of 64 meters centered over the diffuser (as defined by ADEC in the 401 Certification in Appendix G to the Permit)"
"Fecal Coliform and Enterococcus Bacteria Mixing Zone is defined as the area contained 30 meters above a 3,200 m long (1,600 m on each side of the diffuser running parallel to the shoreline), by 250 m wide rectangle (125 m on either side of the diffuser perpendicular to the shoreline)."

Response 8

Permit Part I.D. requires receiving water monitoring at the ZID and ZID boundary, shoreline sites, and reference sites. The draft permit does not require receiving water monitoring at ADEC's acute or chronic mixing zones.

The location and spatial boundaries of the ZID are defined in the permit at Permit Part I.D.2. and in the fact sheet at Part IV.A.3.b. The permit specifies the precise locations of the ZID monitoring stations to ensure compliance with the Receiving Water Monitoring requirements.

The acute and chronic mixing zones have been defined in ADEC's draft 401 certification which can be found in Appendix G of the fact sheet. The mixing zones were used to calculate certain WQBELs as discussed in the fact sheet and final 401 certification. Since receiving water monitoring is not required at the edge of the mixing zone, it is not necessary to include a definition of the mixing zones in the permit. See Response to Comment 5, above.

No changes were made to the permit as a result of this comment.

Comment 9

C. Whole Effluent Toxicity (WET) Testing Requirements (Page 13)

The NPDES Permit Section 1.C requires Whole Effluent Toxicity testing be conducted quarterly for the first years testing three (3) species: bivalve embryo larvae, echinoderm larvae, and topsmelt larvae. From recent experience we have determined that there is only one main supplier of topsmelt larvae for WET testing in the U.S. WET testing labs have recommended that an alternative species - the inland silverside *(Menidia)* – should be allowed for these larval tests. The State of California allows the use of *Menidia* as an alternative fish larvae for WET tests.

NPDES Permit Comment #9 (Section 1.C)

Ketchikan is requesting that NPDES Permit Section 1.C.2 be modified to include inland silverside *(Menidia)* as an alternative fish species for these larval tests. Also request addition of inland silverside *(Menidia)* into Table 3 as an alternative fish species for WET testing.

Response 9

The EPA agrees that it is appropriate to include an alternative test species for the reasons set forth in the comment. Permit Part I.C.2. has been modified to include inland silverside (Test Method 1006.0) as an alternative fish species in the event topsmelt is unavailable from suppliers.

Comment 10

D. Receiving Water Monitoring (Page 17)

The NPDES Permit Section 1.D requires receiving water monitoring "must be conducted during the lowest daylight slack tide of the monitoring month, unless impractical for safety or logistical concerns (i.e., inclement weather)." This specific wording does not allow sufficient flexibility to account for safety, logistics, and staffing this task. We are recommending that the language in permit be revised to allow for sampling within 3 days of the lowest daylight slack tide.

NPDES Permit Comment #10 (Section 1.D)

Ketchikan is requesting that NPDES Permit Section 1.D, first paragraph, be modified to read "receiving water monitoring must be conducted within three (3) days of the lowest daylight slack tide of the monitoring month, unless impractical for safety or logistical concerns (i.e., inclement weather)."

Response 10

Draft Permit Part I.D. requires receiving water monitoring to be conducted during the lower slack tide to ensure that monitoring occurs during critical conditions pursuant to 40 CFR 125.62. The National Oceanic and Atmospheric Administration provides hourly tide predictions that can be used to plan for low slack tide events several years in advance.

The draft permit includes a clause to allow for some flexibility when monitoring is impractical for safety or logistical concerns. This language takes into consideration the concerns set forth in the comment. However, to provide further clarity, the EPA has added language to Permit Part I.D. to state "...unless impractical for safety or logistical concerns (i.e., inclement weather or insufficient staffing)."

Comment 11

D. Receiving Water Monitoring (Table 4 Receiving Water Monitoring Requirements)

Table 4 in NPDES Permit Section 1.D specifies sampling as grab samples at the surface and every 5 meters to the bottom for temperature, salinity, dissolved oxygen, pH, and turbidity. Marine monitoring is typically performed using a water quality instrument on a cable that allows for continuous profile measurements of all of these parameters rather than collecting separate grab samples. Water quality instruments such as a YSI Pro-DSS or Sea Bird SBE-19 are routinely used to collect detailed water column profile measurements of depths requires receiving water monitoring temperature, salinity, dissolved oxygen, pH, and turbidity.

NPDES Permit Comment #11 (Section 1.D -Table 4)

Ketchikan is requesting that NPDES Permit Section l.D - Table 4 include a new footnote linked to sample type and sample depth in the table column headers that states "Receiving water monitoring measurements of temperature, salinity, dissolved oxygen, pH, and turbidity may be collected as

continuous water column profile measurements using a calibrated water quality instrument to measure from surface to near-bottom."

Response 11

The EPA agrees with the comment.

A new footnote has been included in Permit Part I.D. – Table 4, which reads: "*Receiving water measurements for temperature, salinity, DO, pH, and turbidity must be collected as continuous water column profile measurements using a calibrated water quality instrument to measure from surface to near-bottom."*

Comment 12

D. Receiving Water Monitoring (Table 4 Receiving Water Monitoring Requirements)

Table 4 in NPDES Permit Section 1.D specifies the sampling location for fecal coliform and Enterococcus bacteria as the "ZID Station, ZID Boundary, Reference Sites, Additional Sites". These sampling sites for collecting surface bacteria samples to assess compliance with the water quality standard {14 MPN fecal coliform) are not correct until after the new wastewater disinfection system is operational at the Charcoal Point WWTP at the end of the compliance schedule period. The collection of surface water samples for fecal coliform and Enterococcus bacteria analyses at the ZID Station, ZID Boundary, Reference Sites, and Additional (shoreline) Sites prior to operation of the new wastewater disinfection system at the Charcoal Point WWTP would be expected to yield bacteria concentrations greater than the water quality standards (14 MPN fecal coliform and 35 CFU for Enterococcus). The correct sampling locations for fecal coliform and Enterococcus bacteria during the first five (5) years of the NPDES Permit period should remain the same as the monitoring stations specified in the 2001 NPDES Permit. These bacteria sampling locations are defined under the permit comment below.

NPDES Permit Comment #12 (Section 1.D -Table 4)

Ketchikan is requesting that NPDES Permit Section l.D - Table 4 include the following specific sampling locations (or the equivalent sites at the Fecal coliform mixing zone boundary and outside) in the table or as a new footnote to the table:

"Receiving water monitoring station locations (a) for fecal coliform and Enterococcus bacteria will be the following until the new wastewater disinfection system is operational at the Charcoal Point WWTP:

1. Fecal coliform mixing zone boundary Site 1 (1,600-m south of diffuser site and mid-channel),

2. Fecal coliform mixing zone boundary Site 2 (1,600-m north of diffuser site and mid-channel),

3. Shoreline Site 1 {1,200 meters north of diffuser on east shoreline),

4. Shoreline Site 2 {1,000 meters south of diffuser on east shoreline near entrance to Thomas Basin Harbor),

5. Reference Site 1 (2,000-m south of diffuser site and outside fecal coliform mixing zone),

6. Reference Site 2 (2,000-m north of diffuser site and outside fecal coliform mixing zone).

(a) Bacteria monitoring station locations are near the Receiving Water Sampling Locations depicted in Appendix A of NPDES Permit."

"Receiving water monitoring station locations for fecal coliform and Enterococcus bacteria will change to the ZID Station, ZID Boundary, Reference Sites, and Additional (shoreline) Sites defined in the NPDES Permit after the new wastewater disinfection system at the Charcoal Point WWTP is operational."

Response 12

See Response 5.

Comment 13

NPDES Permit Comment #13 (Section 1.0 -Table 4- Footnote 6)

Ketchikan is requesting that NPDES Permit Section 1.D - Table 4 Footnote 6 change wording to the following for clarity:

"(6) Receiving water monitoring for fecal coliform can be discontinued if the permittee achieves 12 consecutive months of compliance with the final fecal coliform effluent limits. In the event of any violation of the final fecal coliform effluent limits, the permittee must restart the receiving water monitoring for fecal coliform until 12 consecutive months of compliance is achieved."

Response 13

The EPA agrees with the comment.

Permit Part I.D. Table 4, Footnote 6 has been revised to read: "*Receiving water monitoring for fecal coliform can be discontinued if the permittee achieves 12 consecutive months of compliance with the final fecal coliform effluent limits. In the event of any violation of the final fecal coliform effluent limits, the permittee must restart the receiving water monitoring for fecal coliform until 12 consecutive months of compliance is achieved."*

Comment 14

E. Biological Monitoring for Benthic Infauna (Page 20)

E.5 Biological Monitoring for Benthic Infauna - Sunflower Sea Star Observations

The NPDES Permit Section I.E.5 states that "data shall be collected on the presence and density of sunflower sea stars (*Pycnopodia helianthoides*) during the benthic survey and the results included in the report in Permit Part I.E.6." This permit requirement assumes that the benthic infauna sampling is collected by divers and this is not true. Benthic infauna sediment samples are collected using a grab sampler deployed from a work vessel. In addition, diving at the Charcoal Point WWTP outfall diffuser site is difficult requiring commercial divers and safety procedures. The outfall diffuser is located at a depth of-110 feet below MLLW and divers at the diffuser are within plume of undisinfected wastewater. This requirement should be changed to a conditional requirement.

NPDES Permit Comment #14 (Section I.E.5)

Ketchikan is requesting that NPDES Permit Section I.E.5 change wording to the following: "Sunflower Sea Star Observations: If commercial divers are contracted to inspect the Charcoal Point WWTP outfall diffuser, then observations shall be made on the presence and density of sunflower sea stars

(Pycnopodia helianthoides) on the seabed and the observations will be included in the report in Permit Part 1.E.6. If no dive inspection is conducted then no observations are required."

Response 14

The EPA appreciates the logistical and safety concerns highlighted by the comment. As discussed in Part VI. A of the Fact Sheet, the sunflower sea star observations were identified as a condition of the consultation between the EPA and the National Marine Fisheries Service pursuant to Section 7 of the Endangered Species Act and cannot be removed from the permit without reinitiating consultation.

The EPA does not believe a grab sampler alone will provide adequate data to fulfill the intent of the biological monitoring requirements in Permit Part I.E., CWA Section 301(h)(3), or 40 CFR 125.57. Language has been included in Permit Part I.E.3. which requires that in addition to the physical samples, "…visual monitoring of the sampling locations shall be performed using commercially available underwater video equipment, an underwater drone/vehicle, or a diver." In addition, Permit Part I.E.5. have been revised to read: "…pictures or videos of the individuals will be taken,…" (underline added for emphasis).

Comment 15

II. SPECIAL CONDITIONS
C. Fecal Coliform and Enterococcus Schedule of Compliance
Table 5. Tasks Required Under the Schedule of Compliance for Fecal Coliform and Enterococcus (Page 25)
Section II.C - Table 5 under Task 4 (Construction Begins) describes the task activities as follows: "The permittee must begin construction to achieve the final fecal coliform and enterococcus effluent limits by four years after the effective date of the permit. Deliverable: The permittee must submit a construction completed report to EPA and ADEC no later than four years and 14 days after the effective date of the permit." This task requires construction to start four years after the effective date of the permit, however the text regarding the deliverable refers to a construction completed report. Therefore, the text needs to be changed to read "construction started report".

NPDES Permit Comment #15 (Section II.C -Table 5)

Ketchikan is requesting that NPDES Permit Section II.C Table 5, Task 4 (Page 25) change wording to the following: "The permittee must begin construction to achieve the final fecal coliform and enterococcus effluent limits by four years after the effective date of the permit. Deliverable: The permittee must submit a construction started report to EPA and ADEC no later than four years and 14 days after the effective date of the permit."

Response 15

The EPA agrees with the comment.

Permit Part II.C. – Table 5, Task 4 has been updated to read: "*The permittee must submit a construction started report to EPA and ADEC no later than four years and 14 days after the effective date of the permit.*"

Comment 16

Table 6. Additional Pollutants for Alaska 301(h) Facilities (Page 26-27)

Section II.D-Table 6 includes 2,3,7,8-TCDD analyses during the annual monitoring. The analytical cost for 2,3,7,8-TCDD analyses are significant and Ketchikan seeks to reduce the frequency of dioxin testing of effluent.

NPDES Permit Comment #16 (Section II.D.1)

Ketchikan is requesting that NPDES Permit Section II.D.1.a add the following sentence: "The permittee must perform effluent analyses for 2,3,7,8-TCDD only during the first two years of testing. However, if 2,3,7,8-TCDD is detected in the first two years of testing results, then effluent analyses for 2,3,7,8-TCDD must continue annually."

Response 16

The EPA agrees with the comment.

A footnote has been added to Permit Part II.D.1.a. that reads: The permittee must perform effluent analyses for 2,3,7,8-TCDD only during the first two years of testing. However, if 2,3,7,8-TCDD is detected in the first two years of testing results, then effluent analyses for 2,3,7,8-TCDD must continue annually."

Comment 17

APPENDIX A: RECEIVING WATER SAMPLING LOCATIONS (Page 49-50)

The figure on Page 50 titled "Receiving Water Sampling Locations Map" needs to include the existing Fecal Coliform Mixing Zone boundaries at 3,200 m long (1,600 m on each side of the diffuser running parallel to the shoreline), by 250 m wide rectangle (125 m on either side of the diffuser perpendicular to the shoreline). The stations listed as Reference Site 1 and 2 need to be relocated to outside the north and south boundaries of the Fecal Coliform Mixing Zone boundaries. See NPDES Permit Comment #10.

NPDES Permit Comment #17 (Appendix A)

Ketchikan is requesting that NPDES Permit Appendix A "Receiving Water Sampling Locations Map" include the boundaries of the existing Fecal Coliform Mixing Zone as 3,200 m long (1,600 m on each side of the diffuser running parallel to the shoreline), by 250 m wide rectangle (125 m on either side of the diffuser perpendicular to the shoreline). In addition, the stations listed as Reference Site 1 and 2 need to be relocated to align with the north and south boundaries of the Fecal Coliform Mixing Zone boundaries.

Response 17

Please refer to Response 8.

In terms of Reference Site 1 and Reference Site 2, the coordinates provided in Appendix A: Receiving Water Sampling Locations are just outside the boundary of the 3200-meter mixing zone from the 2001 permit.

No changes have been made to the draft permit as a result of this comment.

Comment 18

NPDES DRAFT PERMIT AK-002144-0 FACT SHEET

C. PERMIT HISTORY (Page 9)

The City of Ketchikan submitted additional data and records in 2024 to supplement the original Application for NPDES Permit Renewal submitted July 12, 2005.

Ill. RECEIVING WATER

111.B. RECEIVING WATER QUALITY (Page 14)

Table 3 - Receiving Water Quality Data includes maximum copper and zinc values reported from sampling by ARRI in 2021. These metals data are listed as total recoverable concentrations, however the water quality criteria for copper and zinc are dissolved metals concentrations.

NPDES Permit Fact Sheet Comment #1

Table 17 in Appendix C lists dissolved copper and zinc data and these should be added to Table 3. Note that dissolved copper and zinc values listed in Table 17 are higher than the total copper and zinc values.

Response 18

The EPA acknowledges Table 3 only lists total recoverable metals and not the dissolved values, as well as the error in Table 17 where the total and recoverable metals concentrations are incorrectly switched. These errors did not affect the final effluent limits in the draft permit since the calculations include the appropriate metals conversion factors (see fact sheet, Appendix E, Table 18).

In terms of revising the fact sheet, fact sheets describe the basis for the conditions in the draft permit. The EPA does not revise fact sheets after the public comment period. Instead, the response to comments document serves to correct or clarify statements in the fact sheet.

Comment 19

IV. EFFLUENT LIMITATIONS AND MONITORING

Table 5 - Fecal Coliform (Page 18). The Fact Sheet states the basis for the Fecal Coliform effluent limits are:
"CWA Section 301(h)(9) of the CWA and 40 CFR 125.62 require 301(h) discharges to meet state WQS and federal CWA 304(a) criteria at the boundary of the ZID. The draft permit contains fecal coliform limits that the ADEC has included as a condition of their draft 401 certification: These limits will ensure Alaska's most protective WQS are met at the boundary of the chronic mixing zone." This statement of basis ignores the interim effluent bacteria limits that apply until the Charcoal Point WWTP new disinfection system is operational in 2030.

NPDES Permit Fact Sheet Comment #2

Ketchikan requests that EPA modify the Fact Sheet text under basis for the Fecal Coliform effluent limits to the following: "CWA Section 301(h)(9) of the CWA and 40 CFR 125.62 require 301Hh) discharges to meet state WQS and federal CWA 304{a) criteria at the boundary of the ZID once final effluent bacteria limits apply. The draft permit contains interim and final fecal coliform limits that the ADEC has included as a condition of their draft 401 certification. The interim fecal coliform limits will apply until the Charcoal Point WWTP new disinfection system is operational. These interim limits will ensure Alaska's most protective WQS are met at the boundary of the existing fecal coliform mixing zone. After the new disinfection system is operational and the final fecal coliform limits apply, then Alaska's most protective WQS for fecal coliform must be met at the boundary of the ADEC's chronic mixing zone and the EPA's ZID."

Ketchikan also requests that EPA modify the Fact Sheet text under basis for the Enterococcus effluent limits to reflect the same information as listed above for the Fecal Coliform limits.

Response 19

As previously stated, the EPA does not revise fact sheets in response to public comment. Instead, the Response to Comments document provides corrections or clarifications to the fact sheet. See Response to Comments 5 & 12 regarding the fecal and enterococcus effluent limits in the final permit.

Comment 20

A. BASIS FOR EFFLUENT LIMITS

2. Technology-Based Effluent Limits (TBELs)

a. Federal Primary Treatment Effluent Limits (Page 24-25)

The Fact Sheet states: "Section 301(h) of the CWA provides for a waiver from secondary treatment if the permittee meets several specific criteria, including a requirement to achieve primary treatment. Primary treatment is defined in Section 301(h) of the CWA as 30 percent removal of BODS and TSS from the influent. The current permit requires 30 percent removal of BODS and TSS on a monthly averaging basis and the applicant has requested to maintain these limits."

The Fact Sheet also states: "The EPA has tentatively determined that the Ketchikan WWTP qualifies for a continuation of their waiver from secondary treatment under Section 301(h) of the CWA. Therefore, the draft permit maintains the 30 percent minimum monthly removal limits for TSS and BODS. For additional information on 301(h) please refer to the 301(h) TDD."

b. Concentration and Mass Based Limits

The Fact Sheet also states: "The EPA assessed influent and effluent data (2019-2024) for BODS and TSS to establish concentration-based limits reflective of facility performance."

Ketchikan used Charcoal Point WWTP monthly average effluent TSS concentration data for January 2020 to March 2025 to develop the plot shown in Figure 1 (in the NPDES Permit comments section). This plot of monthly average effluent TSS concentrations demonstrates that the proposed revised monthly average TSS effluent limit (49 mg/L) presented in the Draft NPDES Permit is likely to be exceeded. These TSS data show that the proposed revised monthly average TSS effluent limit (49 mg/L) was exceeded 17% of the time in recent years.

NPDES Permit Fact Sheet Comment #3

Ketchikan is requesting that the revised monthly average TSS effluent limit be set at no lower than 60 mg/L. Ketchikan is also requesting that the NPDES Permit Fact Sheet Section A.2.b include the following sentence: 'Effluent BOD5 and TSS limits were calculated based on past removal performance and not the 30% removal effectiveness required in Section 301(h) of the Clean Water Act, and these effluent limits may be revised or increased in the future up to the minimum 30% removal effectiveness required in the Clean Water Act without triggering anti-backsliding conditions."

Response 20

See Response 3.

Comment 21

3. Water Quality-Based Effluent Limits (WQBELs)

b. Reasonable Potential Analysis and Need for WQBELs

Correction: Page 30 - sentence above Table 10 refers to Appendices G and H. Appendix H was not provided in the Fact Sheet.

c. Reasonable Potential and WQBELs

Correction: Page 32 - last sentence in first paragraph refers to reasonable potential calculations provided in Appendix C. The reasonable potential calculations are provided in Appendix E.

Copper

The Fact Sheet states on Page 33: "Since there is reasonable potential to cause or contribute to an excursion above Alaska's WQS for copper, the EPA calculated the following WQBELs for copper:

Average monthly limit: 39 µg/L (1.29 lbs/day)
Maximum daily limit: 62 µg/L (2.07 lbs/day).

These limits are more stringent than the limits in the 2001 permit. Monthly effluent copper concentrations between 2019 and 2024 ranged from a minimum of 9.6 µg/L to maximum of 54 µg/L, with an average of 29.6 µg/L."

NPDES Permit Fact Sheet Comment #4

Ketchikan is requesting that the NPDES Permit Fact Sheet Section A.3.c include the following sentence: 'Effluent copper limits calculated based on past effluent monitoring data that may not reflect effluent monitoring data collected during this permit period. The Charcoal Point WWTP does not treat to remove copper, and these new effluent limits may be revised or increased without triggering anti-backsliding conditions."

Response 21

See Response 4.

Comment 22

Dissolved Oxygen

The Fact Sheet states on Page 34:

"The analysis indicates the effluent BODS will result in a worst-case DO depletion of 0.2mg/L at the boundary of the ZID at the bottom of the receiving water, with a final BODS concentration of 5.0 mg/L after initial mixing. These results indicate that both near field and far field DO impacts meet Alaska WQS. For a complete analysis of DO please refer to Appendix E of the 301(h) TDD. Based on the above analyses and that presented in the 301(h) TDD, the discharge will not contribute to an excursion above Alaska WQS for DO. The permit retains the DO limits from the 2001 permit to ensure the facility continues to meet Alaska WQS."

The last sentence in this paragraph in the Draft Fact Sheet is incorrect since the existing NPDES permit does not include effluent DO limits for the Charcoal Point WWTP, only monitoring of effluent DO.

As defined under ADEC Criteria for Water Quality Impairment of Conventional Pollutants in the Alaska

Consolidated Assessment and Listing Methodology (ADEC, 2021), reduction in receiving water DO under critical conditions (4 mg/Lat depths below the surface) must be limited to less than a 10% reduction in ambient DO due to a discharge source. The following mass balance equation was used to calculate the mixed effluent and receiving water DO concentration after rapid mixing near the Ketchikan outfall diffuser:

$$\frac{(RW\ conc * DF - 1) + Efflt\ cone = Mixed\ conc}{DF}$$

Where: RW conc is receiving water concentration; Efflt conc is effluent concentration; and DF is the dilution factor.

Assuming a worst-case effluent discharge of 1 mg/L DO concentration into receiving waters near the outfall diffuser with 4 mg/L DO concentration demonstrates that a dilution of 8 would be sufficient to avoid a 10% reduction in ambient DO. Assuming the defined dilution of 11.8 at the proposed DEC acute zone boundary (10 meters from diffuser), results in a calculated reduction of only 6.4% in ambient DO (for an effluent DO of 1 mg/L). These calculations show that even a worst-case effluent DO of 1 mg/L into receiving waters near the outfall diffuser with 4 mg/L DO concentration would not exceed the 10% reduction in ambient DO due to an effluent discharge.

In addition, ADEC has included a mixing zone for dissolved oxygen in the 401 Certification in Appendix G of the Permit Fact Sheet.

NPDES Permit Fact Sheet Comment #5

Ketchikan is requesting that the Fact Sheet correct the statement that "permit retains the DO limits from the 2001 permit to ensure the facility continues to meet Alaska WQS" and specify that no dissolved oxygen effluent limits are needed to meet Alaska WQS. The Fact Sheet should state that effluent dissolved oxygen monitoring be retained in Table 1 as monitoring only.

Response 22

See Response 6.

Comment 23

Zinc

The Fact Sheet states on Page 40: "Since there is reasonable potential to cause or contribute to an excursion above Alaska's WQS for total zinc, the EPA calculated the following WQBELs: an average monthly limit of 552 µg/L (18.4 lbs/day) and a maximum daily limit of 1107 µg/L (36.9 lbs/day). These limits are more stringent than the limits in the 2001 permit.

Sixty (60) monthly samples were taken between 2019 and 2024, effluent concentrations of total zinc ranged from a minimum of 1.0 µg/L to maximum of 95 µg/L, with an average of 34.1 µg/L. Based on this data, the EPA believes the facility will be able to meet the proposed limits."

NPDES Permit Fact Sheet Comment #6

Ketchikan is requesting that the NPDES Permit Fact Sheet Section A.3.c include the following sentence: 'Effluent zinc limits calculated based on past effluent monitoring data that may not reflect effluent monitoring data collected during this permit period. The Charcoal Point WWTP does not treat to remove

zinc, and these new effluent limits may be revised or increased without triggering anti-backsliding conditions."

Correction: Page 34 - the last paragraph under Dissolved Oxygen states: "The permit retains the DO limits from the 2001 permit to ensure the facility continues to meet Alaska WQS." This is incorrect as the existing permit does not include any DO limits.

Response 23

See Response 4 and Response 6.

Comment 24

d. Antibacksliding: WQBELs

The Fact Sheet states on Page 40: "Section 303(d)(4) of the CWA states that, for water bodies where the water quality meets or exceeds the level necessary to support the water body's designated uses, WQBELs may be revised if the revision is consistent with the State's antidegradation policy. The EPA is not proposing any WQBELs with limits that are less stringent than the current permit; therefore, an antibacksliding analysis is not necessary."

NPDES Permit Fact Sheet Comment #7

Ketchikan is requesting that the NPDES Permit Fact Sheet Section A.3.d under Antibacksliding WQBELs include the following sentence: 'Effluent copper and zinc limits were calculated based on past effluent monitoring data that may not reflect effluent monitoring data collected during this permit period. The Charcoal Point WWTP does not treat to remove copper or zinc, and these new effluent limits may be revised or increased without triggering anti-backsliding conditions."

Response 24

See Response 4.

Comment 25

B. MONITORING REQUIREMENTS

2. Receiving Water Monitoring

The Fact Sheet states on Page 46: "The EPA is retaining most of the receiving water monitoring program from the 2001 permit in the draft permit. Changes to the receiving water monitoring program include the addition of enterococcus to the suite of parameters analyzed and the addition of sampling locations around the boundary of the ZID. These additional sampling points will provide more complete information on dilution at the boundary of the ZID. In addition, receiving water monitoring for bacteria can be discontinued if the permittee achieves 12 consecutive months of compliance with the final bacteria limits and the following summer's receiving water sampling results demonstrate full compliance with Alaska's WQS for bacteria at all ZID Boundary (Permit Part I.D.2.b.) and Nearshore Sites (Permit Part I.D.2.d.)."

Ketchikan understands that the during the NPDES Permit period the Charcoal Point WWTP will operate with Interim Fecal Coliform bacteria limits that cannot comply with Alaska's WQS for bacteria prior to the operation of the new disinfection system at the WWTP. Further, the receiving water monitoring of

bacteria needs to occur at the existing Fecal Coliform Mixing Zone boundaries and not the EPA's ZID or ADEC's acute and chronic mixing zone boundaries.

NPDES Permit Fact Sheet Comment #8

Ketchikan requests that EPA modify the Fact Sheet text under Receiving Water Monitoring on Page 46 to include the following sentence: "CWA Section 301(h)(9) of the CWA and 40 CFR 125.62 require 301(h) discharges to meet state WQS and federal CWA 304(a) criteria at the boundary of the ZID once final effluent bacteria limits apply. The draft permit contains interim and final fecal coliform limits that the ADEC has included as a condition of their draft 401 certification. The interim fecal coliform limits will apply until the Charcoal Point WWTP new disinfection system is operational. These interim limits will ensure Alaska's most protective WQS are met at the boundary of the existing fecal coliform mixing zone. After the new disinfection system is operational and the final fecal coliform limits apply, then Alaska's most protective WQS for fecal coliform must be met at the boundary of the ADEC's chronic mixing zone and the EPA's ZID." Ketchikan also requests that EPA modify the Fact Sheet text under basis for the Enterococcus effluent limits to reflect the same information as listed above for the Fecal Coliform limits.

Response 25

See Response 5.

Comment 26

B.2 Receiving Water Monitoring (Table 14 Receiving Water Monitoring Requirements)

Table 14 in the NPDES Permit Fact Sheet specifies sampling as grab samples at the surface and every 5 meters to the bottom for temperature, salinity, dissolved oxygen, pH, and turbidity. Marine monitoring is typically performed using a water quality instrument on a cable that allows for continuous profile measurements of these parameters rather than collecting separate grab samples. Water quality instruments such as a YSI ProDSS or SeaBird SBE-19 are routinely used to collect detailed water column profile measurements of depths requires receiving water monitoring temperature, salinity, dissolved oxygen, pH, and turbidity.

NPDES Permit Fact Sheet Comment #9 (Table 14)

Ketchikan is requesting that NPDES Permit Fact Sheet Table 14 include a new footnote linked to sample type and sample depth in the table column headers that states "Receiving water monitoring measurements of temperature, salinity, dissolved oxygen, pH, and turbidity may be collected as continuous water column profile measurements using a calibrated water quality instrument to measure from surface to near-bottom."

Response 26

See Response 11.

Comment 27

Appendix G. Antidegradation Form (2G) and Draft 401 Certification

The Alaska Department of Environmental Conservation (ADEC) Draft Certificate of Reasonable Assurance in Appendix G of the Draft NPDES Permit Fact Sheet includes the following language regarding mixing zones for the Charcoal Point WWTP:

"A Final Certification of Reasonable Assurance is pending review of any public comments received and is contingent on the inclusion of the following stipulations in NPDES Permit No. AK0021440:

1. In accordance with 18 AAC 70.240, DEC authorizes mixing zones in Tongass Narrows for copper, zinc, dissolved oxygen, enterococcus bacteria, fecal coliform bacteria, temperature, and whole effluent toxicity contained in the discharge from the City of Ketchikan Charcoal Point WWTP. The mixing zones are defined as follows:

> The chronic mixing zone has a dilution of 19.7:1 and is defined as a rectangular area with a length of 28 meters and width of 64 meters centered over the diffuser with the length oriented parallel to the shoreline.
>
> The acute mixing zone has a dilution of 11.8:1 and is defined as a rectangular area with a length of 20 meters and width of 62 meters centered over the diffuser with the length oriented parallel to the shoreline."

The ADEC Draft Certificate of Reasonable Assurance for the Charcoal Point WWTP Draft NPDES Permit does not include the continuation of the existing Fecal Coliform Mixing Zone to align with the Interim Fecal Coliform effluent limits that apply in the NPDES Permit.

The chronic mixing zone boundary defined in the ADEC Draft Certificate of Reasonable Assurance for the Charcoal Point WWTP will not provide sufficient dilutions for the discharge to comply with Alaska water quality standards for fecal coliform and Enterococcus bacteria until after the new wastewater disinfection system is operational at the Charcoal Point WWTP at the end of the compliance schedule period.

NPDES Permit Fact Sheet Comment #10 (Appendix G -ADEC Draft 401 Certification)

Ketchikan is requesting that ADEC revise the Draft Certificate of Reasonable Assurance for the Charcoal Point WWTP to include the existing Fecal Coliform Mixing Zone until the new wastewater disinfection system is operational at the Charcoal Point WWTP at the end of the compliance schedule period.

Ketchikan is requesting that ADEC include the following into Item #1 in the 401 Certificate:

"Fecal Coliform and Enterococcus Bacteria Mixing Zone is defined as the area contained 30 meters above a 3,200 m long (1,600 m on each side of the diffuser running parallel to the shoreline), by 250 m wide rectangle (125 m on either side of the diffuser perpendicular to the shoreline). The bacteria mixing zone will only be valid until the new wastewater disinfection system is operational at the Charcoal Point WWTP at the end of the compliance schedule period defined in Item #2 in the 401 Certificate."

Response 27

Please refer to the response to comments document ADEC has developed for comments related to the conditions of the 401 certification. See also the first paragraph of Response 5.

Appendix A:

TSS Performance-based Effluent Limit Calculation

B	C
Performance-based Effluent Limits	
INPUT	
LogNormal Transformed Mean:	3.767
LogNormal Transformed Variance:	0.073587809
Number of Samples per month for compliance monitoring:	4
Autocorrelation factor (n_e) (use 0 if unknown):	0
OUTPUT	
E(X) = EXP(C6+C7/2)	44.8599
V(X) = (EXP((2*C6)+C7))*(EXP(C7)-1)	153.674
VARn IF(C9=0, LN(C12/(C8*(C11^2))+1), LN(C12/(C9*C11^2)+1))	0.0189
MEANn= LN(C11)-(C13*0.5)	3.7941
VAR(Xn)= IF(C9=0,C12/C8,C12/C9)	38.419
RESULTS	
Average Weekly Effluent Limit: EXP(C6+(2.326*(C7^0.5)))	**81.3**
Average Monthly Effluent Limit: =IF(AND(C9>0, C9>=10),C19,IF(AND(C9>0, C9<10), B19,IF(AND(C9=0,C8>=10),C19, IF(AND(C9=0, C8<10), B19)))), where, B19=EXP(C14+(1.645*C13^0.5)) C19=(C11+(1.645*(C15^0.5)))	**55.7**
55.71806735	55.05608173

Weekly TSS Data (2019-2025)

2019	mg/L	Ln()	2020	mg/L	Ln()	2021	mg/L	Ln()
8-Jan	33	3.497	7-Jan	53	3.970	5-Jan	31	3.434
15-Jan	33	3.497	14-Jan	47	3.850	12-Jan	47	3.850
23-Jan	37	3.611	21-Jan	38	3.638	19-Jan	35	3.555
29-Jan	35	3.555	28-Jan	37	3.611	26-Jan	36	3.584
5-Feb	52	3.951	4-Feb	43	3.761	2-Feb	52	3.951
12-Feb	40	3.689	11-Feb	45	3.807	9-Feb	38	3.638
19-Feb	51	3.932	18-Feb	36	3.584	16-Feb	29	3.367
26-Feb	48	3.871	25-Feb	61	4.111	23-Feb	38	3.638
5-Mar	70	4.248	3-Mar	40	3.689	2-Mar	49	3.892
12-Mar	63	4.143	10-Mar	48	3.871	9-Mar	36	3.584
19-Mar	65	4.174	17-Mar	45	3.807	16-Mar	41	3.714
26-Mar	54	3.989	24-Mar	51	3.932	23-Mar	40	3.689
2-Apr	44	3.784	31-Mar	51	3.932	30-Mar	73	4.290
9-Apr	57	4.043	7-Apr	53	3.970	6-Apr	38	3.638
16-Apr	48	3.871	14-Apr	49	3.892	13-Apr	54	3.989
23-Apr	48	3.871	21-Apr	45	3.807	20-Apr	64	4.159
30-Apr	42	3.738	28-Apr	41	3.714	27-Apr	60	4.094
7-May	69	4.234	5-May	50	3.912	11-May	50	3.912
14-May	58	4.060	12-May	40	3.689	18-May	58	4.060
21-May	73	4.290	19-May	40	3.689	25-May	48	3.871
28-May	56	4.025	26-May	57	4.043	2-Jun	26	3.258
4-Jun	60	4.094	2-Jun	55	4.007	8-Jun	46	3.829
11-Jun	54	3.989	9-Jun	60	4.094	15-Jun	63	4.143
18-Jun	63	4.143	16-Jun	65	4.174	22-Jun	57	4.043
25-Jun	66	4.190	23-Jun	67	4.205	28-Jun	35	3.555
2-Jul	64	4.159	30-Jun	70	4.248	6-Jul	57	4.043
11-Jul	60	4.094	7-Jul	69	4.234	13-Jul	42	3.738
16-Jul	62	4.127	14-Jul	52	3.951	20-Jul	51	3.932
23-Jul	59	4.078	21-Jul	73	4.290	27-Jul	57	4.043
30-Jul	58	4.060	27-Jul	51	3.932	3-Aug	56	4.025
6-Aug	64	4.159	7-Aug	65	4.174	10-Aug	57	4.043
13-Aug	62	4.127	11-Aug	55	4.007	17-Aug	39	3.664
20-Aug	59	4.078	18-Aug	65	4.174	24-Aug	36	3.584
27-Aug	55	4.007	25-Aug	55	4.007	31-Aug	43	3.761
3-Sep	43	3.761	31-Aug	46	3.829	7-Sep	57	4.043
10-Sep	35	3.555	8-Sep	39	3.664	14-Sep	48	3.871
16-Sep	53	3.970	16-Sep	32	3.466	21-Sep	61	4.111
24-Sep	36	3.584	22-Sep	48	3.871	28-Sep	36	3.584
30-Sep	32	3.466	29-Sep	34	3.526	5-Oct	54	3.989
1-Oct	32	3.466	6-Oct	41	3.714	12-Oct	61	4.111
7-Oct	48	3.871	13-Oct	42	3.738	20-Oct	35	3.555
22-Oct	17	2.833	22-Oct	34	3.526	26-Oct	41	3.714
29-Oct	47	3.850	27-Oct	37	3.611	2-Nov	54	3.989
5-Nov	46	3.829	3-Nov	35	3.555	9-Nov	58	4.060
12-Nov	38	3.638	10-Nov	32	3.466	17-Nov	53	3.970
19-Nov	40	3.689	17-Nov	35	3.555	22-Nov	45	3.807
25-Nov	36	3.584	23-Nov	32	3.466	30-Nov	40	3.689
5-Dec	29	3.367	1-Dec	22	3.091	7-Dec	54	3.989
10-Dec	37	3.611	8-Dec	38	3.638	14-Dec	44	3.784
17-Dec	45	3.807	15-Dec	41	3.714	21-Dec	50	3.912
23-Dec	45	3.807	22-Dec	40	3.689	28-Dec	56	4.025
30-Dec	45	3.807	29-Dec	36	3.584			

2022	mg/L	Ln()	2023	mg/L	Ln()	2024	mg/L	Ln()
4-Jan	49	3.892	5-Jan	28	3.332	4-Jan	39	3.664
11-Jan	36	3.584	12-Jan	43	3.761	11-Jan	36	3.584
18-Jan	63	4.143	19-Jan	32	3.466	18-Jan	29	3.367
25-Jan	44	3.784	26-Jan	30	3.401	25-Jan	36	3.584
1-Feb	43	3.761	2-Feb	31	3.434	1-Feb	35	3.555
8-Feb	33	3.497	10-Feb	27	3.296	8-Feb	40	3.689
15-Feb	43	3.761	16-Feb	40	3.689	17-Feb	45	3.807
22-Feb	42	3.738	23-Feb	43	3.761	22-Feb	43	3.761
1-Mar	57	4.043	2-Mar	38	3.638	29- Feb	45	3.807
8-Mar	43	3.761	9-Mar	40	3.689	7-Mar	45	3.807
15-Mar	45	3.807	16-Mar	39	3.664	14-Mar	35	3.555
23-Mar	43	3.761	23-Mar	55	4.007	23-Mar	25	3.219
29-Mar	40	3.689	30-Mar	42	3.738	28-Mar	50	3.912
5-Apr	53	3.970	6-Apr	51	3.932	19-Apr	31	3.434
12-Apr	44	3.784	13-Apr	48	3.871	24-Apr	31	3.434
19-Apr	55	4.007	20-Apr	51	3.932	3-May	28	3.332
26-Apr	45	3.807	27-Apr	32	3.466	10-May	45	3.807
3-May	63	4.143	5-May	40	3.689	16-May	34	3.526
10-May	47	3.850	11-May	47	3.850	23-May	42	3.738
17-May	62	4.127	18-May	48	3.871	30-May	56	4.025
24-May	42	3.738	25-May	33	3.497	6-Jun	40	3.689
31-May	48	3.871	1-Jun	43	3.761	13-Jun	41	3.714
7-Jun	51	3.932	9-Jun	48	3.871	20-Jun	47	3.850
14-Jun	69	4.234	15-Jun	42	3.738	27-Jun	44	3.784
21-Jun	44	3.784	22-Jun	44	3.784	3-Jul	41	3.714
28-Jun	56	4.025	28-Jun	59	4.078	11-Jul	48	3.871
6-Jul	60	4.094	6-Jul	59	4.078	19-Jul	31	3.434
12-Jul	53	3.970	13-Jul	35	3.555	25-Jul	55	4.007
19-Jul	66	4.190	20-Jul	39	3.664	1-Aug	37	3.611
26-Jul	65	4.174	27-Jul	40	3.689	8-Aug	28	3.332
2-Aug	50	3.912	3-Aug	59	4.078	16-Aug	30	3.401
9-Aug	63	4.143	10-Aug	35	3.555	23-Aug	46	3.829
16-Aug	57	4.043	17-Aug	38	3.638	30-Aug	39	3.664
23-Aug	56	4.025	24-Aug	31	3.434	5-Sep	54	3.989
30-Aug	51	3.932	31-Aug	39	3.664	12-Sep	33	3.497
6-Sep	49	3.892	7-Sep	31	3.434	19-Sep	44	3.784
13-Sep	54	3.989	15-Sep	38	3.638	26-Sep	34	3.526
20-Sep	55	4.007	21-Sep	29	3.367	3-Oct	43	3.761
28-Sep	34	3.526	28-Sep	33	3.497	10-Oct	31	3.434
4-Oct	43	3.761	5-Oct	30	3.401	17-Oct	62	4.127
11-Oct	53	3.970	12-Oct	29	3.367	14-Nov	51	3.932
18-Oct	44	3.784	19-Oct	22	3.091	21-Nov	36	3.584
25-Oct	45	3.807	26-Oct	31	3.434	27-Nov	32	3.466
1-Nov	43	3.761	2-Nov	32	3.466	5-Dec	18	2.890
8-Nov	48	3.871	10-Nov	30	3.401	12-Dec	53	3.970
15-Nov	45	3.807	16-Nov	35	3.555	19-Dec	48	3.871
21-Nov	51	3.932	22-Nov	26	3.258	24-Dec	42	3.738
29-Nov	47	3.850	30-Nov	31	3.434			
6-Dec	71	4.263	7-Dec	29	3.367			
13-Dec	44	3.784	14-Dec	53	3.970			
21-Dec	46	3.829	21-Dec	27	3.296			
28-Dec	38	3.638	28-Dec	36	3.584			

2025	mg/L	Ln()
2-Jan	52	3.951
9-Jan	36	3.584
16-Jan	35	3.555
25-Jan	28	3.332
30-Jan	47	3.850
6-Feb	38	3.638
13-Feb	61	4.111
20-Feb	36	3.584
27-Feb	32	3.466
6-Mar	43	3.761
13-Mar	40	3.689
20-Mar	37	3.611
27-Mar	30	3.401
3-Apr	37	3.611
10-Apr	43	3.761
17-Apr	40	3.689
24-Apr	34	3.526
1-May	55	4.007
8-May	40	3.689
16-May	41	3.714
22-May	41	3.714
30-May	32	3.466
5-Jun	38	3.638
12-Jun	47	3.850
18-Jun	41	3.714
25-Jun	49	3.892
2-Jul	32	3.466
9-Jul	50	3.912
16-Jul	46	3.829
23-Jul	41	3.714
30-Jul	36	3.584
4-Aug	39	3.664
13-Aug	40	3.689

Mean of Ln()	3.767	2019-2025
Variance of Ln()	0.073587809	