Alaska Department of Environmental Conservation (DEC) Response to Comments for the Draft Certificate of Reasonable Assurance for the Municipality of Skagway Borough Wastewater Treatment Plant (WWTP) National Pollutant Discharge Elimination System (NPDES) Permit No. AK0020010.

Summary

The Environmental Protection Agency and DEC jointly public noticed NPDES Permit AK0020010 and DEC's Draft Certificate of Reasonable Assurance for the Municipality of Skagway Borough (Skagway) WWTP between July 28, 2023 and September 13, 2023. DEC received three comments on the Draft Certificate of Reasonable Assurance, all from the Municipality of Skagway. This document summarizes the comments and the justification for any action taken or not taken by DEC in response to the comments.

1. Fecal Coliform and Enterococcus Bacteria Compliance Schedule

Comment Summary

Skagway stated that the five-year compliance schedule is not enough time to secure funding, complete a disinfection study, design, and construct a disinfection system and therefore requested an extension of the five-year compliance schedule to ten years. Skagway estimates that disinfection will likely cost more than 10 million dollars which will be a significant burden on rate payers and that ten years will allow the Skagway time to obtain grants and/or alternative funding. Skagway proposed an alternate schedule that with the exception of construction startup, (the compliance schedule in the Draft Certificate of Reasonable Assurance specifies that construction commence four years after the effective date of the permit vs seven years proposed by Skagway), doubles the allowable time for each sequential interim requirement.

DEC Response

40 Code of Federal Regulations, Duration of permits §122.46(a), limits the length of NPDES permits to a fixed term not to exceed five years. Alaska implements the NPDES program as the Alaska Pollutant Discharge Elimination System (APDES) program. DEC regulations at 18 Alaska Administrative Code (AAC) 83.020, Term of permit (a), states that an APDES permit is effective for a fixed term that must be listed in the permit and must not exceed five years. The fecal coliform and enterococcus compliance schedule is a condition of the permit; therefore, the compliance schedule cannot extend beyond the five-year permit term.

18 AAC 83.560, Schedules of compliance, states that any schedule of compliance must require compliance as soon as possible. 18 AAC 83.560(b)(1) specifies that the time between interim requirements must not exceed one year. The interim requirements contained in the Draft Certificate of Reasonable Assurance that will lead to compliance with the final fecal coliform and enterococcus bacteria effluent limits and the dates for their achievement are attainable progressive actions that will ensure that Skagway complies with the final effluent limits as soon as possible, but no later than 5 years after the effective date of the permit.

2. Copper Effluent Limits

Comment Summary

Skagway commented that copper exhibited extensive variation from a peak high in 2016 to extremely low concentrations during the pandemic years of 2020 and 2021. They state that reasons are both

partially known and unknown and presents issues with determining reasonable potential to exceed water quality criteria. Transient resident populations and lack of cruise ship tourists contributes to variations. Other unknown causes could include water supply changes, construction, conservation, changes in flows, and/or other. They state that if a dataset could be justified that results in determining that the Skagway WWTP can statistically meet the proposed copper limits based on historical variation in effluent monitoring, that this option is preferred. Otherwise, they propose a two-year study to investigate and understand the dataset before setting proposed effluent limitations. They propose that if a dataset cannot be justified that results in attainable proposed copper limits, and an interim study is not granted, then they would require at the least, a 10 year compliance schedule to fund, evaluate, design, construct, and startup in order to meet the currently unattainable effluent limitations.

DEC Response

DEC reevaluated and updated the data set used in the reasonable potential analysis (RPA) using the last five years of data, January 2019-December 2023. The results of the RPA demonstrated that copper has reasonable potential to exceed Alaska copper marine water quality criteria; therefore, copper water quality based effluent limits were developed (79 µg/L daily maximum, 37 µg/L monthly average). Skagway's effluent copper concentrations have not exceeded 79 µg/L since April 2017. Discharge monitoring results since then indicate that the Skagway WWTP is capable of achieving the daily maximum copper effluent limit of 79 µg/L. Most recently, the 2022 daily maximum monitoring results ranged from 7.2 µg/L to 34.9 µg/L, with an average of 18 µg/L, and the 2023 daily maximum monitoring results ranged from 7.7 µg/L to 52 µg/L with an average of 25 µg/L.

The prior NPDES permit required copper monitoring once per month. Therefore, if Skagway only monitored copper once per month, the result must be reported on the Discharge Monitoring Report (DMR) as both the daily maximum and monthly average result. The reissued permit requires sampling twice per month. Both samples must be used for averaging. More samples reduces the likelihood of a monthly average exceedance. According to Skagway's NPDES permit, Section III.D., *Additional Monitoring by Permittee*, Skagway can elect to monitor more frequently than required by the permit and then the results, if they were obtained using test procedures approved under 40 CFR 136, must be used in calculations, and reported on the DMR. It would be advisable for Skagway to initially sample early in a given month and then evaluate the benefit of additional monitoring beyond what is required in the permit.

3. Dilution Factors

Comment Summary

Skagway stated that the copper effluent limits in Table 1 of the NPDES permit were calculated using dilution factors of 8.5 and 14; however, the NPDES fact sheet and the 401 Certification states that the dilution factors are 16 and 28 with chlorine driving the dilution factors, that typically it is the dilution factors of the mixing zone driver that are used for effluent limits, and that the 401 Certification did not state that separate dilution factors were used for each parameter. Skagway also requested that due to the variations of the data set over the years, that the dilution factors should be changed calculated from the data set that is most representative of conditions at the Skagway WWTP because of the likely change in the maximum expected concentration.

DEC Response

DEC updated the RPA using the most recent five years of effluent data, January 2019- December 2023. The data set from this time period contained 60 detected copper results (copper had been monitored

once per month) ranged from a low of 3.4 µg/L in May 2020 to a high of 52 µg/L in September 2023 with an overall average of 17 µg/L. Variations in the data set could be attributed to any number of factors including corrosion in the drinking water system and fewer active sewer connections and tourists during the pandemic years of 2020 and 2021. However, as indicated in DEC's above response to comment number 2, the effluent limits are obtainable. The daily maximum limit of 79 µg/L has not been exceeded since April 2017, and with the increase to twice per month sampling and the option to sample more frequently, the likelihood of exceeding the monthly average of 37 µg/L is reduced.

The 2019-2023 data set also included 35 TRC results; 13 were reported with detected results and 22 were reported as non-detects. During the last five years, Skagway used chlorine during the months of April through October in 2019, 2022, and 2023. During 2020 they used it March through October, and in 2021 April through November. Of the detected results, the highest were reported in 2020 and 2021. TRC was not detected during any of the months that chlorine was used (April – October) in 2023.

Copper requires an acute dilution of 15:1 and a chronic dilution of 24:1 to meet copper water quality criteria (5.8 µg/L acute, 3.7 µg/L chronic). Total residual chlorine requires an acute dilution of 19:1 and a chronic dilution of 32:1 to meet total residual chlorine water quality criteria (13 µg/L acute, 7.5 µg/L chronic).

The NPDES permit contains a 5-year compliance schedule for fecal coliform and enterococcus bacteria. Final effluent limits must be met as soon as possible, but no later than 5 years after the effective date of the permit. In order to achieve compliance with the final effluent limits, DEC expects that Skagway will not only disinfect with chlorine but will also dechlorinate in order to meet TRC effluent limits. Therefore, DEC expects Skagway to not only achieve compliance with the TRC effluent limits, but to also demonstrate that they can meet TRC water quality criteria prior to discharge into Taiya Inlet.

DEC considers the TRC dilution factors and their associated effluent limits as interim dilution factors and effluent limits, and using the TRC dilution factors to calculate copper's effluent limits results in copper effluent limits that may result in the discharge of copper in concentrations that are unduly higher than the WWTP's observed performance. Therefore, DEC used the dilution factors associated with copper to calculate copper's effluent limits and the dilution factors associated with TRC to calculate TRC's effluent limits.

DEC has revised the 401 Certification to specify the dilution factors used in the copper and TRC effluent limit calculations. Updated effluent limits are also included in the Final 401 Certification.