

**Department of Environmental Conservation
Response to Comments**

For

Juneau-Douglas Wastewater Treatment Facility

APDES Permit No. AK0023213

Public Noticed December 5, 2014 – January 5, 2015

April 13, 2015



**Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501**

1 Introduction

1.1 Summary of Facility / Permit

The Juneau-Douglas Wastewater Treatment Facility (JD WWTF), owned and operated by the City and Borough of Juneau (CBJ), collects and treats primarily domestic wastewater from Juneau, West Juneau and the City of Douglas. The collection system consists of a combination separate and combined sewer system and is the only combined sewer system in the State of Alaska. The last combined sewer overflow (CSO) discharge event occurred in 2005. Secondary treatment is provided by an activated sludge biological process, with an average monthly design flow rate of 2.76 million gallons per day. The treatment process includes grit removal, comminution, aeration (dual basins) secondary clarification (dual tanks), sludge digestion and ultra-violet disinfection. Waste sludge is dewatered and shipped out of state for disposal. The secondary treated effluent is discharged into Gastineau Channel through a 300 foot long outfall and diffuser system at a depth of 30 feet below mean lower low water.

1.2 Opportunities for Public Participation

The Department of Environmental Conservation (DEC or the Department) proposed to issue an Alaska Pollutant Discharge Elimination System (APDES) wastewater discharge permit to CBJ for the JD WWTF. To ensure public, agency, and tribal notification and opportunities for participation, the Department:

- identified the permit on the annual Permit Issuance Plan posted online at: <http://www.dec.state.ak.us/water/wwdp/index.htm>
- notified potentially affected tribes that the Department would be working on this permit via letter, fax and/or email
- posted a preliminary draft of the permit on-line for a 10-day applicant review October 30, 2014 and notified tribes and other agencies
- formally published public notice of the draft permit on December 5, 2014 in the Juneau Empire newspaper and posted the public notice on the Department's public notice web page
- posted the proposed final permit on-line for a 5-day applicant review on March 20, 2015
- sent email notifications via the APDES Program List Serve when the preliminary draft, draft, and proposed final permits were available for review

The Department did not receive comments from the public on the draft permit and supporting documents. In addition to the public, the Department also requested comments from the Alaska Departments of Natural Resources and Fish and Game, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the U.S. Environmental Protection Agency (EPA). EPA was the sole agency to submit comments. This document summarizes the comments submitted by EPA and the justification for any action taken or not taken by DEC in response to the comments.

1.3 Final Permit

The final permit was adopted by the Department on April 13, 2015. There were changes from the public noticed permit. Significant changes are identified in the response to comments and reflected in the final fact sheet for the permit.

2 Combined Sewer Overflows

2.1 Comment Summary

Permit Page 1, Fact Sheet Section 9.4. EPA states the following in regards to the three JD WWTF CSO outfalls:

- The CSO outfalls should be identified on page one of the permit.
- The fact sheet and permit should state that JD WWTF is not incurring any CSO-related bypasses due to high combined influent flows.
- The fact sheet should explain how the facility and permit requirements are consistent with EPA's CSO policy.
- DEC should consider incorporating post-Phase II CSO permit requirements.

Response:

- The CSO outfalls have been identified on page one of the permit.
- A statement has been added to Section 9.4 of the Fact Sheet indicating that the JD WWTF is not incurring any CSO-related bypasses due to high combined influent flows.
- Fact Sheet Section 9.4 has been revised to address the consistency of the JD WWTF permit with EPA's CSO Policy.
- Post-Phase II CSO permit requirements, including both technology and water-quality based, have been incorporated into Permit Section 1.6.

3 Water Quality Standards

3.1 Comment Summary

Fact Sheet Section 6.3. EPA recommends that DEC list the designated and existing uses for Gastineau Channel rather than referring the reader to Alaska Water Quality Standards (WQS).

Response:

Section 6.3 of the Fact Sheet explains that existing and designated uses are the same and Gastineau Channel must be protected for all marine designated uses found at 18 AAC 70.020(a)(2). DEC has added a list of all marine designated uses found at 18 AAC 70.020(a)(2).

4 Effluent Limits and Monitoring Requirements

4.1 Comment Summary

Fact Sheet Section 5, Appendix B. EPA provided the following comments in regards to effluent limits and monitoring requirements:

- The fact sheet should provide a discussion and summary for priority pollutants.
- The fact sheet must explain how pollutants of concern were identified and selected or not selected for effluent limits and/or monitoring.

Response:

- Discussion has been added to Appendix B.4 in regards to priority pollutants and pollutants of concern and how DEC identified them in the JD WWTF effluent. Appendices B.6.3, C, and D have been updated and contain details for ammonia limits. Section 5.4 of the Fact Sheet contains details on Enterococci Bacteria monitoring, and Section 5.5 of the Fact Sheet contains details for copper monitoring. Dissolved oxygen limit details may be found in Appendix B.6.1 and Fecal Coliform Bacteria limit details may be found in Appendix B.6.2.

5 Fecal Coliform Bacteria

5.1 Comment Summary

Fact Sheet B.6.2. EPA states that DEC should clarify the basis for the fecal coliform (FC) bacteria limit and how it is protective of designated and existing uses.

Response:

Further detail for FC bacteria limits has been added to Fact Sheet B.6.2.

6 Total Ammonia

6.1 Comment Summary

Fact Sheet Appendix B.6.3. EPA provided the following comments in regards to ammonia:

- The fact sheet should include a discussion and summary on ammonia monitoring data.
- The fact sheet needs more clarity on ammonia's reasonable potential and meeting water quality standards at the edge of the mixing zone.
- EPA states that an average monthly limit for ammonia is required as per 40 CFR 122.45(d).
- EPA recommends that DEC present the derivation of effluent limits based on DEC guidance for calculating effluent limits.
- EPA recommends a monthly monitoring frequency for ammonia to determine compliance with average monthly and maximum daily limits.

Response:

- More detail is provided in Appendix B.6.3 in regards to ammonia monitoring data.
- Appendix C of the Fact Sheet describes the Department's reasonable potential procedure. Ammonia is used in the example.
- An average monthly limit of 14 mg/L and an average weekly limit of 21 mg/L as per 40 CFR 122.45(d) has been added to the permit.
- Appendix D had been modified to present DEC's derivation of effluent limits. Ammonia is used in the example.
- The monitoring frequency for ammonia has been increased from quarterly to monthly.

7 BOD₅ and TSS

7.1 Comment Summary

Permit Table 2. EPA recommends increased monitoring for BOD₅ and TSS from once per month to weekly. EPA states that monthly monitoring is not sufficient to determine compliance with the limits and that they recommend weekly BOD₅ and TSS monitoring for facilities discharging greater than one million gallons per day.

Response:

DEC reviewed BOD₅ and TSS monitoring data between 2011 and 2013. In March and April of 2011, JD WWTF exceeded BOD₅ and TSS effluent limits. For each month and for each pollutant, there was one exceedance of an average monthly, average weekly, maximum daily, and minimum percent removal limit. In April some corresponding BOD₅ and TSS concentration-based pounds per day violations were also reported. In 2012 CBJ did not report any effluent violations, and in 2013 CBJ reported one TSS average weekly limit violation both in August and September. There was also one maximum daily limit concentration violation with a corresponding pounds per day violation reported in September.

Based on these recent monitoring results DEC maintains that increased monitoring of BOD₅ and TSS is not warranted and that the monthly monitoring frequency that was required in the prior permit remains sufficient. DEC will review the discharge monitoring results during the next permit cycle and will consider increased monitoring if the effluent results indicate a benefit from doing so.

There are no changes to the permit or fact sheet based on this comment.

8 Water Quality Standard Narrative

8.1 Comment Summary

Permit Section 1.2. EPA states that it is unclear whether the limitation at Permit Section 1.2 is providing sufficient specificity to evaluate and ensure compliance with 18 AAC 70.020(a)(17): petroleum hydrocarbons, oils and grease, for marine water uses, 18 AAC 70.020(a)(20): residues, for marine water uses: floating solids, debris, sludge, deposits, foam, scum, or other residues and 18 AAC 70.020(a)(21): sediment, for marine water uses. EPA provided example language extracted from prior NPDES permits issued in Alaska.

Response:

DEC has added language at Permit Section 1.2.3 to address more specifically the regulations stated above.

9 Sufficiently Sensitive Test Methods

9.1 Comment Summary

EPA states that DEC should ensure that all references used in NPDES permits in regards to monitoring, reporting, and application submissions reflect a recently finalized EPA rule that requires NPDES permits to prescribe that only sufficiently sensitive methods be used for analysis of pollutants identified in the permit. EPA also recommends that DEC develop required minimum levels for monitoring and incorporate permit language requiring the use of sufficient sensitive test methods.

Response:

DEC will consider EPA's APDES program-related comments in future permitting actions; in the interim, DEC has added a requirement for sufficiently sensitive test methods in Permit Section 1.2.4.

10 Whole Effluent Toxicity Testing

10.1 Comment Summary

Fact Sheet. EPA states the following in regards to Whole Effluent Toxicity (WET):

- The fact sheet should include some discussion and summary of the four quarterly WET tests.
- DEC should consider including a 100% effluent in the WET dilution series.
- The permit should require that WET be conducted at a time when the facility is treating combined flows.

Response:

- Fact Sheet Section 5.6 summarizes the results of the previous permit's WET requirements.
- 18 AAC 70.030 states that if the Department authorizes a mixing zone in a permit that an effluent discharged to a water may not impart chronic toxicity expressed as 1.0 chronic toxic units (TUC) at or beyond the mixing zone boundary, based on the minimum effluent dilution achieved in the mixing zone. The WET dilution series in the JD WWTF is based on the available dilution in the mixing zone. The authorized mixing zone in the permit provides a dilution factor of 20. This corresponds to an instream waste concentration at the boundary of the authorized mixing zone of 5% effluent, and a chronic toxicity trigger of 20 TUC, whereby if toxicity is detected, accelerated testing is required. The greatest concentration required in the dilution series, 20%, is four times greater than the instream waste concentration at the boundary of the mixing zone. Toxicity detected at this level, or the next lower concentration in the dilution series, 10%, will also trigger accelerated testing. If toxicity is detected in any of the accelerated tests, the permittee is required to initiate a Toxicity Reduction Evaluation to identify and mitigate the specific cause of toxicity. DEC maintains that the dilution series as required in the permit is sufficient to detect toxicity in

the JD WWTF effluent and is protective of Alaska WQ criteria for WET at the boundary of the mixing zone.

- There have been no CSO-related discharges to Gastineau Channel since 2005. All combined flows have been flowing to JD WWTF for treatment for over nine years. It is therefore highly likely that WET tests are already being conducted when the facility is treating combined flows.

There are no changes to the permit or fact sheet based on these comments.

11 Operation and Maintenance Plan

11.1 Comment Summary

Permit Section 2.0. EPA recommends that the Operation and Maintenance Plan include the requirement that the JD WWTF conduct a survey of industrial users connected to the JD WWTF once per permit cycle.

Response

An industrial user survey requirement has been added to Permit Section 2.4.