

**Department of Environmental Conservation
Final Permit - Response to Comments**

For

**APDES Individual Permit
AK0038661 – Hilcorp Alaska, LLC Endicott Operations**

Public Noticed June 28, 2018 – July 30, 2018

September 27, 2018



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

1 Introduction

1.1 Summary of Facility / Permit

Hilcorp Alaska, LLC (HAK or permittee) operates Endicott Operations located at the end of Endicott Road, three miles off shore on Duck Island, in Stefansson Sound of the Beaufort Sea. The complex consists of two separate gravel islands: the main production island (MPI) which includes a seawater treatment plant (STP) and the satellite drilling island (SDI). The STP produces waterflood for injection into oil producing formations to maintain formation pressures that enhance oil recovery. The complex also includes a potable water treatment system (POW) and a domestic wastewater treatment plant (WWTP) to support camp population.

The Alaska Department of Environmental Conservation (Department or DEC) proposes to reissue Alaska Pollutant Discharge Elimination System (APDES) Permit AK0038661 – Hilcorp Alaska, LLC – Endicott Operations (Permit). The Permit authorizes discharges of combined STP backwash and reverse osmosis reject from the POW in internal Outfall 002A and WWTP effluent in internal Outfall 002B. These internal outfalls combine into a single discharge port, Outfall 001A. Outfall 003A is a seawater recirculation loop that maintains open water conditions at the seawater intake basins during the winter.

The Permit imposes monitoring and/or limits for flow, temperature differential (ΔT) and total residual chlorine (TRC) at all outfalls associated with the main Outfall 001A, and requires monitoring and/or limits for pH, 5-day biological oxygen demand (BOD_5), total suspended solids (TSS), fecal coliform bacteria (FC), and enterococcus bacteria (EC) at Outfall 002B. Chronic whole effluent toxicity (WET) monitoring is required at Outfall 001A. Flow and ΔT monitoring are required at Outfall 003A. The combined discharge of the STP/POW (Outfall 002A) and domestic wastewater (Outfall 002B) through Outfall 001A includes the authorization of a chronic mixing zone for temperature, TRC, and WET, as well as an acute mixing zone for TRC. Outfall 003A is for a seawater loop that is monitored for flow and temperature and does not include a mixing zone.

1.2 Opportunities for Public Participation

To ensure participation by the public, agencies, and tribal and local governments during Permit reissuance, the Department:

- identified the permit on the annual Permit Issuance Plan posted online at: <http://dec.alaska.gov/water/wastewater/>;
- notified potentially affected tribes that the Department would be working on the Permit via letter, fax and/or email on November 10, 2015;
- posted the Preliminary Draft Permit online for a 10-day applicant review and notified tribes, local governments, and agencies;
- posted the Draft Permit on-line for a 30-day applicant review on June 28, 2018 and notified tribes, local governments and other agencies;
- published public notice(s) in the Arctic Sounder on June 28 through July 3, 2018 (one week).
- posted the public notice on the Department's public notice web page June 28, 2018 for a 30-day public review on the Draft Permit and Fact Sheet;
- posted the Proposed Final Permit on-line for a 30-day applicant review on June 28, 2018 and notified tribes, local governments and other agencies; and
- sent email notifications via the APDES Program List Serve when the Preliminary Draft, Draft, and Proposed Final Permits were available for review.

The Department requested comments on the Preliminary Draft documents from HAK and the Environmental Protection Agency (EPA), National Marine Fishery Services (USFWS), and States agencies including, but not limited to, the Alaska Department of Fish and Game (DFG) and the Alaska Department of Natural Resources (DNR). During the 10-day applicant review period, DEC received comments on the Preliminary Draft Permit and Fact Sheet from HAK only. During the 30-day public review period, the Department again received comments on the Draft Permit and Fact sheet from only HAK. Lastly, HAK provided a written request to shorten the five-day applicant review to three days and provided comments on the Proposed Final Permit and Fact Sheet. HAK's comments were in character with a comment received during the 30-day public notice period and provided additional information, resulting in modifications to the Proposed Final Permit and Fact Sheet.

1.3 Final Permit

The Final Permit was adopted by the Department on September 27, 2018. There were minor changes from the Draft Permit and Fact Sheet after public notice to correct typographical errors and to clarify information. Changes resulting from comments received on the Draft Permit and Fact Sheet were identified in this response to comments and reflected in the Proposed Final Permit and Fact Sheet issued for a shortened five-day applicant review. Similarly, changes to the Proposed Final Permit and Fact Sheet resulting from comments received during the shortened five-day applicant review are also identified in this response to comments with any changes described in this Response to Comments document (RTC) as reflected in the Final Permit and Fact Sheet. However, comments on the Proposed Final Permit and Fact Sheet that did not result in changes to the Final Permit and Fact Sheet are not included in this RTC.

2 Comments Summary

2.1 Comments by HAK on the Draft Permit and Fact Sheet

Comments received from HAK during the 30-day public review period are summarized and responded to in the following paragraphs.

2.1.1 Permit document in general

HAK Comment: Notes that page numbers in headers of document are out of sequence and that the page numbers for the Appendices in the Table of Contents (TOC) are incorrect.

DEC Response: DEC concurs with HAK, and has corrected the page number sequence in the headers and Appendices in the TOC.

2.1.2 Section 1.2.4 of Permit – Request that Clarification be provided for Monitoring Requirements for Outfall 001A

HAK Comment: HAK requests that a statement be included that indicates the monitoring requirements in Table 2 are only required when discharges from outfalls 002A and 002B are simultaneously occurring preventing duplicative data from being collected for either 002A or 002B.

DEC Response: DEC understands the monitoring schedule for 002A, 002B, and 001A (002A and 002B combined) may be duplicative for TRC and ΔT during periods when all sources are not contributing to the combined discharge in 001A. However, DEC points out that developing monitoring schedules based on if/then

decision trees can become confusing and difficult to enforce. In addition, DEC purposefully requires data collection at Outfall 001A whenever discharges occur as this could support elimination of internal outfalls or removal of water-quality based effluent limits on internal outfalls in the future. Not having data specific to the combined location may lead to difficulty in using the data for this ultimate objective. Lastly, while there is some duplicative sampling for TRC and ΔT , these parameters are commonly monitored onsite using field instrumentation, which is not foreseen to present a significant burden. No changes to the Permit or Fact Sheet have been made based on this comment.

2.1.3 Table 2 of Permit – Request that sampling for WET be accomplished by use of grab or composite samples

HAK Comment: HAK requests that the type of sampling for WET tests be grab or composite samples rather than changed to exclusively composite samples.

DEC Response: DEC states that a primary objective for requiring chronic WET monitoring in the Permit is to collect representative samples that can be used to detect possible effects of integrated effluent streams occurring at a facility over time periods when the quality of one or more of those streams changes. Per the *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA 1995), Section 8.1.2 “The decision on whether to collect grab or composite samples is based on the objectives of the test and an understanding of the short and long-term operations and schedules of the discharger.” Per the definition of composite sampling in Appendix C, “Composite samples must consist of at least eight equal volume grab samples.” DEC believes that composite sampling is the most appropriate for the objective of characterizing chronic toxicity of effluent in the combined outfall 001A. However, DEC is not as knowledgeable about operations and schedules that may affect sample collection. Therefore, DEC has modified the Permit and Fact Sheet to include the requirement to collect at least eight equal volume grab samples over a period as described in the Quality Assurance Project Plan. This modification will hopefully allow HAK the flexibility to meet the objective of collecting representative samples without hindering operations or complicating remote shipping logistics. The following modifications have been made in the Permit and Fact Sheet based on this comment:

Fact Sheet Section 4.3.10. Add the following paragraph after designation of vertebrate and invertebrate species:

“Chronic WET samples must consist of eight equal volume grab samples over a specified period that accounts for facility operations and schedules at the time of sample collection. The sampling methods used must be included in the Quality Assurance Project Plan (QAPP). See Section 7.2 for QAPP requirements.”

Fact Sheet Section 7.2. Add the following sentence before the last sentence in the paragraph:

“In addition, the QAPP must define the composite sampling techniques used to ensure chronic WET samples collected per Section 4.3.10, represent the combined effluent quality of Outfall 001A at the time of sample collection.”

Permit Section 1.4.3. Add new Section 1.4.3.1 and renumber existing sections. New Section 1.4.3.1 reads:

“Composite Sampling: Chronic WET samples must consist of eight equal volume grab samples over a specified period that accounts for facility operations and schedules at the time of sample collection. The sampling methods used must be included in the Quality Assurance Project Plan (QAPP). See Section 3.1.6.2.”

Permit Section 3.1.6. Add new Section 3.1.6.2 and renumber existing sections. New Section 3.1.6.2 reads:

”Composite sampling methods for chronic WET monitoring of Outfall 001A that meets the objectives of characterizing the combined effluent while considering the operation and schedules of contributing systems at the time of collection. If a system is operational but discharges are intermittent (e.g., POW), the composite sampling must be taken during an intermittent discharge event.”

2.1.4 Section 1.4.2 of Permit – Request for change from referencing Section 1.2.2 to Section 1.4

HAK Comment: HAK states that Section 1.4.2 should reference Section 1.4 rather than 1.2.2 as it presently does.

DEC Response: DEC concurs and has changed the reference to Section 1.4.

2.1.5 Section 1.5.2 of Permit – Request that “written” or “in writing” be included in sentence

HAK Comment: HAK requests that if additional monitoring is requested by DEC, the request be in writing.

DEC Response: DEC concurs and has revised the first sentence of Section 1.5.2 to read “or DEC may require collection of additional samples through a written request.”

2.1.6 Section 2.1 of Fact Sheet – Request for Grammar Correction and Clarification

HAK Comment: HAK notes that the second to the last sentence appears to be incomplete and also provides clarification that domestic wastewater has not been injected historically.

DEC Response: DEC has modified the second to last sentence in paragraph two to read:

“Lastly, camp domestic wastewater is treated in a wastewater treatment plant and commingled with effluent from the POW and STP and discharged out of Outfall 001A.”

2.1.7 Section 2.1.1.1 of Fact Sheet – Revised Comment from Review of Preliminary Draft Fact Sheet

HAK Comment: - 1st Paragraph HAK states that their comment made on the Preliminary Draft Fact Sheet regarding sodium chloride being used as a disinfectant was incorrect. HAK requests that the Final Fact Sheet be modified to the more generic statement, “Disinfection occurs after straining but prior to multimedia filters to prevent biofouling due to bacterial growth in the system”.

DEC Response to 1st Paragraph Comment: DEC concurs and has revised the sentence as requested.

HAK Comment: - 2nd Paragraph: HAK requests clarification of the last paragraph and that the sentence that STP and POW effluents are commingled prior to merging with the WWTP effluent is incorrect.

DEC Response to 2nd Paragraph Comment: DEC acknowledges that STP and POW effluent are not commingled prior to merging with WWTP effluent and has edited the last paragraphs in Sections 2.1.1.1, and 2.1.1.2 to give an accurate description of the processes and compliance points. In addition, DEC modified Permit Section 1.1 to clarify the compliance points for the STP and POW.

Fact Sheet Section 2.1.1.1. The last sentence in Section 2.1.1.1 has been replaced with the following two sentences that read:

“After treatment, the POW wastewater is commingled with the WWTP discharge then merges with effluent from Outfall 002A. Given the similarity in characteristics and dominance of the volume in the total flow from the STP (99 percent), the point of compliance for the STP is also the point of compliance for the POW.”

Fact Sheet Section 2.1.1.2. The last two sentences in Section 2.1.1.1 have been replaced with the following two sentences that read:

“After the final treatment step, dechlorinated effluent from internal Outfall 002B is commingled with POW effluent, then with effluent from Outfall 002A and discharged through combined Outfall 001A. The compliance point for Outfall 002B is prior to commingling.”

Permit Section 1.1, 2nd Bullet. The representation of the STP for the POW in Outfall 002A is qualified by modifying the second bullet to read:

- Outfall 002A – Includes the STP that also represents the POW, as an internal outfall.

2.1.8 Fact Sheet Section 7.3 – Comment on Apparent Typographical Error in First Sentence of 2nd Paragraph

HAK Comment: HAK states that the first sentence of the second paragraph should read “Within 90 days of the effective date of the Permit, the BMP Plan must be revised and implemented.”

DEC Response: DEC acknowledges the typographical error and has edited the sentence to reflect 90 days rather than 120 days.

2.2 Comments by HAK on the Proposed Final Permit and Fact Sheet

2.2.1 Permit Section 1.2.4 - Request that Clarification be provided for Monitoring Requirements for Outfall 001A

HAK Comment: As a follow up to the comment submitted on July 20, 2018 specific to this section, it is still recommended to include clarification within the section to highlight that monitoring requirements for Outfall 001 are required only when 001A and 001B are simultaneously occurring to minimize duplicative data. This recommendation is provided for the following reasons:

- MTR2 provided in Flow Diagram 11A-1 is a high flow meter. If just discharge of 002B is occurring, the meter will not provide a true reading as the measurement device is designed for greater flows and a high pipe volume. As such, the accurate flow would be that of just internal Outfall 002B.
- If just discharge of 002B is occurring, duplicative data will be collected for ΔT on the same discharge but at a different time/location.
- If just discharge 002B is occurring, it is not anticipated that the TRC value will change significantly between SP3 and SP2. As such, duplicative data will be collected on the same discharge, just at a different time/location.
- WET is only required when the STP or POW are operational and clarifying chemicals are added. Therefore, if just discharge of 002B is occurring, no WET monitoring will be required

DEC Response: DEC determined that this comment is in character with a similar comment provided by HAK during the 30-day public comment period and is modifying the Proposed Final Permit and Fact Sheet to this subsequent comment. Based on updated comments provided by the permittee, DEC understands and concurs with the permittee, and will add sections for flow in the permit (1.3.1), and fact sheet (4.3.5) to clarify flow measurements or calculations and add a clarifying sentence regarding temperature and TRC to sections 1.3.2 and 1.3.3 respectively in the permit and sections 4.3.6 and 4.3.7 respectively in the fact sheet. The last bullet referring to WET was addressed in Section 1.4 in the Final Permit.

Permit Section 1.3.1 and Fact Sheet Section 4.3.5: Insert new sections and renumber existing sections. New sections read:

“Flow Conditions. Flow measurements or calculations are reported using available meters that provide accurate accounting of flows given the existing meter types, locations, and flow conditions. For example, when only discharge 002B – WWTP is discharging and not the POW or STP, the meter from internal 002B may be used for reporting the flow on external outfall 001A. In addition, given there is no flow meter available for internal outfall 002A, the flow for 002A may calculated by subtracting the flow from internal outfall 002B from the external outfall 001A. All procedures for measuring or calculating flows in varying discharge scenarios must be clearly described in the Quality Assurance Project Plan (QAPP).”

Permit Section 1.3.2 and Fact Sheet Section 4.3.6: Insert last paragraphs that read:

“In situations where only one internal outfall is discharging, the measurement of temperature on the internal outfalls 002A or 002B, may be used for reporting temperature on external Outfall 001A. All procedures for measuring and reporting temperature in varying discharge scenarios must be clearly described in the QAPP.”

Permit Section 1.3.3 and Fact Sheet Section 4.3.7: Insert last sentences that read:

“Similar as in Section 1.3.2, in situations where only one internal outfall is discharging, the measurement of TRC on the internal outfalls 002A or 002B, may be used for reporting TRC on external Outfall 001A. All procedures for measuring and reporting TRC in varying discharge scenarios must be clearly described in the QAPP.”

Permit Section 1.4: Insert sentence after the first sentence that reads:

“Chronic WET testing is not required if domestic wastewater is the only discharge occurring.”

2.2.2 Permit Table 2 – Recommendation to Modify Requirement Type

HAK Comment: I recommend modifying the ΔT the flow monitoring requirement type from “Meter” to “Meter or Grab” as compliance will have to be completed through both a meter reading and sample as MTR2 identified in Flow Diagram 11A-1 is strictly a flow meter.

DEC Response: DEC concurs and has made the change to Table 2 of the Final Permit.

2.2.3 Permit Table 3 – Recommendation to Modify Requirement Type

HAK Comment: I recommend modifying the flow monitoring requirement type from “Meter” to “Meter or Calculation”. There is no flow meter available for Outfall 002B, and as such, this will have to be a calculation based on the subtraction of Outfall 002B flows from Outfall 001A flows.

DEC Response: DEC concurs and has made the change to Table 3 and 4 of the Final Permit.

2.2.4 Permit Section 1.4.2 - Incorrect Reference

HAK Comment: This Section currently references Section 1.4.2. I believe this should reference Section 1.4, as is indicated in the RTC.

DEC Response: DEC concurs and has made this change to the Final Permit.

2.2.5 Fact Sheet Section 2.1.1.1 – Recommendation to Modify Statement

HAK Comment: STP description: I recommend modifying the statement “Disinfection with occurs after straining...” to “Disinfection occurs after straining...”

DEC Response: DEC concurs and has made this change to the Final Permit.

2.2.6 Appendix A. Figures of Fact Sheet – Identification of Temperature Meter

HAK Comment: We have identified that there is a temperature meter between the underdrain commingle point and STP/WWTP commingle point with Outfall 001A. Please let me know if you need updated figures that show this available meter point.

DEC Response: DEC acknowledges there is a temperature meter at the stated location and confirms that it appears on the updated figures provided by HAK showing corrected outfall designations.

2.3 Minor Modifications Associated with Outfall Designations

During administrative procedures to setup the Permit into the Integrated Compliance Information System (ICIS), DEC discovered that outfall designations in the previous permit were no longer consistent with ICIS data entry needs. The previous designated outfalls 001A and 001B were internal outfalls to 001 and require having a different descriptor than 001. In addition, entries into ICIS for new NetDMR requires alpha numeric outfall designations so the previous outfall designation 001 is no longer appropriate. Therefore, DEC is making a minor modification to the Final Permit and Fact Sheet to align outfall designations to be consistent with ICIS input requirements. The following provides the previous inappropriate designations with the corrected designations in the Final Permit and Fact Sheet:

| Previous in Appropriate Designations | Final Corrected Designations |
|--------------------------------------|---|
| Outfall 001 (001A and 001B Combined) | Outfall 001A (Outfall 002A and 002B Combined) |
| Outfall 001A – STP/POW | Outfall 002A – STP/POW |
| Outfall 001B - WWTP | Outfall 002B - WWTP |
| Outfall 002 - CFS | Outfall 003A - CFS |

These modifications have been included in the Final Permit, Fact Sheet, and this response to comments document.