ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT FACT SHEET – PRELIMINARY DRAFT

Permit Number: **AK0053384**

Ward Cove Wastewater Treatment Facility

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

Public Comment Period Start Date: DRAFT
Public Comment Period Expiration Date: DRAFT

Alaska Online Public Notice System

Technical Contact: James Gomez DeMolina
Alaska Department of Environmental Conservation
Division of Water
Wastewater Discharge Authorization Program
555 Cordova St
Anchorage, AK 99501
(907) 269-0291
james.demolina@alaska.gov

Proposed issuance of an Alaska Pollutant Discharge Elimination System (APDES) permit to

FULL CYCLE LLC

For wastewater discharges from
Ward Cove Wastewater Treatment Facility
7559 North Tongass Highway
Ketchikan, AK, 99901

The Alaska Department of Environmental Conservation (the Department or DEC) proposes to reissue an APDES individual permit (permit) to Full Cycle LLC. The permit authorizes and sets conditions on the discharge of pollutants from this facility to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility and outlines best management practices to which the facility must adhere.

This fact sheet explains the nature of potential discharges from the Ward Cove Wastewater Treatment Facility (WWTF) and the development of the permit including:

- information on public comment, public hearing, and appeal procedures
- a listing of effluent limits and other conditions
- technical material supporting the conditions in the permit
- monitoring requirements in the permit

Public Comment

Persons wishing to comment on or request a public hearing for the draft permit for this facility, may do so in writing by the expiration date of the public comment period. Commenters are requested to submit a concise statement on the permit condition(s) and the relevant facts upon which the comments are based. Commenters are encouraged to cite specific permit requirements or conditions in their submittals.
A request for a public hearing must state the nature of the issues to be raised, as well as the requester's name, address, and telephone number. The Department will hold a public hearing whenever the Department finds, on the basis of requests, a significant degree of public interest in a draft permit. The Department may also hold a public hearing if a hearing might clarify one or more issues involved in a permit decision or for other good reason, in the Department's discretion. A public hearing will be held at the closest practicable location to the site of the operation. If the Department holds a public hearing, the Director will appoint a designee to preside at the hearing. The public may also submit written testimony in lieu of or in addition to providing oral testimony at the hearing. A hearing will be tape recorded. If there is sufficient public interest in a hearing, the comment period will be extended to allow time to public notice the hearing. Details about the time and location of the hearing will be provided in a separate notice.

All comments and requests for public hearings must be in writing and should be submitted to the Department at the technical contact address, fax, or email identified above (see also the public comments section of the attached public notice). Mailed comments and requests must be postmarked on or before the expiration date of the public comment period.

After the close of the public comment period and after a public hearing, if applicable, the Department will review the comments received on the draft permit. The Department will respond to the comments received in a Response to Comments document that will be made available to the public. If no substantive comments are received, the tentative conditions in the draft permit will become the proposed final permit. The proposed final permit will be made publicly available for a five-day applicant review. The applicant may waive this review period. After the close of the proposed final permit review period, the Department will make a final decision regarding permit issuance. A final permit will become effective 30 days after the Department's decision, in accordance with the state's appeals process at 18 Alaska Administrative Code (AAC) 15.185.

The Department will transmit the final permit, fact sheet (amended as appropriate), and the Response to Comments to anyone who provided comments during the public comment period or who requested to be notified of the Department's final decision.

Informal Reviews and Adjudicatory Hearings

A person authorized under a provision of 18 AAC 15 may request an informal review of a contested decision by the Division Director in accordance with 18 AAC 15.185 and/or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. See DEC's "Appeal a DEC Decision" web page https://dec.alaska.gov/commish/review-guidance/ for access to the required forms and guidance on the appeal process. Please provide a courtesy copy of the adjudicatory hearing request in an electronic format to the parties required to be served under 18 AAC 15.200. Requests must be submitted no later than the deadline specified in 18 AAC 15.

Documents are Available

The permit, fact sheet, application, and associated documents are available for public review via the DEC's Wastewater Discharge Authorization Program website: http://dec.alaska.gov/water/wastewater/ or can be obtained by visiting or contacting the DEC offices located in Anchorage, Fairbanks, and Juneau between 8:00 a.m. and 4:30 p.m. Monday through Friday at the addresses below. Please contact the office of your choice to arrange for hard copies of the documents to be available for review.

- 555 Cordova Street, **Anchorage**, AK 99501; (907) 269-6285
- **Mail**: P.O. Box 111800
  In Person: 410 Willoughby Avenue, Suite 303; **Juneau**, AK 99811-1800; (907) 465-5180
- 610 University Avenue; **Fairbanks**, AK 99709; (907) 451-2183

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Appendix A. Basis for Effluent Limitations

1.0 INTRODUCTION

1.1 Applicant

This fact sheet provides information on the preliminary draft Alaska Pollutant Discharge Elimination System (APDES) permit for the following entity:

Permittee:	Full Cycle LLC
Facility:	Ward Cove Wastewater Treatment Facility
APDES Permit Number:	AK0053384
Facility Location:	7559 North Tongass Highway, Ketchikan, AK 99901
Mailing Address:	PO Box 772, Ward Cove, AK 99928
Facility Contact:	Mr. Greg Black

The map in Section 2.1 Figure 1 shows the location of the treatment plant and the location of the outfall. The process flow diagram in Section 2.1 Figure 2 illustrates the treatment process.

1.2 Authority

Section 301(a) of the Clean Water Act (CWA) and Alaska Administrative Code (AAC) 18 AAC 83.015 provide that the discharge of pollutants to water of the U.S. is unlawful except in accordance with an APDES permit. The individual permit reissuance is being developed per 18 AAC 83. A violation of a condition contained in the Permit constitutes a violation of the CWA and subjects the permittee of the facility with the permitted discharge to the penalties specified in Alaska Statutes (AS) 46.03.760 and AS 46.03.761.

1.3 Permit History

The Ward Cove Wastewater Treatment Facility (WWTF, or the facility) was originally constructed to treat the domestic wastewater generated at the Ketchikan Pulp Company (KPC) pulp mill. In 1997 the pulp mill shut down. On December 15, 1998, the United States Environmental Protection Agency (EPA) issued National Pollutant Discharge Elimination System (NPDES) permit AK000092 to the facility authorizing domestic wastewater discharge, storm water discharges and treated landfill leachate from the KPC Ward Cove Landfill.

In 1999 the facility was sold to Gateway Forest Products (GFP) and in 2002 Ketchikan Gateway Borough assumed ownership and operation of the facility. The EPA issued NPDES permit AK0053384 for the domestic wastewater discharge effective on August 24, 2004 and expired on September 30, 2009. In 2007 the dissolved oxygen (DO) Total Maximum Daily Load (TMDL) was revised for Ward Cove.

Authority of the NPDES permit transferred to DEC on October 31, 2008, upon EPA's approval of DEC's application to administer the NPDES Program under the APDES Program. The Administrative Procedures Act and 18 AAC 83.155(c) allow for a federally issued NPDES permit or a state APDES permit to be administratively continued provided that the permittee submits a timely and complete application for a new permit prior to expiration of the permit. A complete application for reissuance was received on April 8, 2009 and APDES permit AK0053384 was administratively continued by DEC on December 17, 2009.

In 2011 the facility was sold to Power Systems & Supplies of Alaska LLC. On October 23, 2013 DEC received an updated complete APDES permit application naming the responsible party as Full Cycle LLC. The reissued APDES permit AK0053384 for the domestic wastewater discharge became effective on November 1, 2014 and expired on October 30, 2019. Full Cycle LLC submitted a complete application for reissuance to DEC on June 21, 2019. The permit was administratively continued from October 30, 2019 to May 31, 2020. The reissued permit became effective on June 1, 2020 and expired on May 31, 2025. Full Cycle LLC submitted a complete application for reissuance to DEC on February 28, 2025. DEC notified the applicant that the permit was administratively continued May 20, 2025.

The storm water and landfill leachate discharges, which remain the responsibility of KPC, are authorized under APDES permit AK0053392.

2.0 BACKGROUND

2.1 Facility Information

The Ward Cove WWTF is located on the northern boundary of the Tongass Narrows, approximately 5 miles north of the city of Ketchikan, southeast Alaska (see Figure 1). The facility is owned by Power Systems & Supplies of Alaska LLC and is operated by Full Cycle LLC.

The facility treats domestic wastewater from the Ward Cove industrial site and former KPC manufacturing site (approximate population of 165 people, equating to approximately 6,800 gallons per day (gpd)), wastewater and filtrate generated by the onsite sludge composting facility, and domestic sludge and septage from septic tanks and marine vessels (approximately 10,000 gpd). The sludge press/compost facility is located adjacent to the WWTF. Dewatered solids are containerized and shipped to a disposal facility and the filtrate/wastewater is sent to a holding tank that discharges to the WWTF at a maximum rate of 10,000 gpd. The facility does not receive significant contributions from industrial users and the collection system is not combined with a storm water sewer system.

Figure 2 provides a schematic of the facility's process flow system. Wastewater enters the facility via an underground separate sanitary sewer pipeline collection system. Internal Outfall 001A discharges treated wastewater effluent into a wooden stave pipe that carries freshwater from Connell Lake, a waterbody approximately 3 miles east of the facility. The combined effluent from the WWTF and Connell lake water is sampled at Outfall 001B; a man-hole that is located approximately 122 feet southeast of Internal Outfall 001A (see Figure 3). The treated wastewater is discharged to the marine waters of Ward Cove through the wooden stave pipeline that extends approximately 100 feet, terminating in a single port discharge unit. The outfall terminus is positioned approximately 25 feet below the mean lower low water (MLLW) for Ward Cove.

Since the previous permit issuance, the permittee constructed a cruise ship dock in Ward Cove that was operational in August 2021. A warehouse on the property was converted into a visitor center. Additionally, the operators of the cruise ship dock have acquired a decommissioned ferry from the Alaska Marine Highway System which is moored at the industrial pier in Ward Cove. Both facilities discharge domestic wastewater directly to the WWTF and combined provide approximately 700,000 gallons per year.

Figure 1: Ward Cove Wastewater Treatment Facility Map (Topographic)

Figure 2: Ward Cove Wastewater Treatment Facility Process Flow Diagram

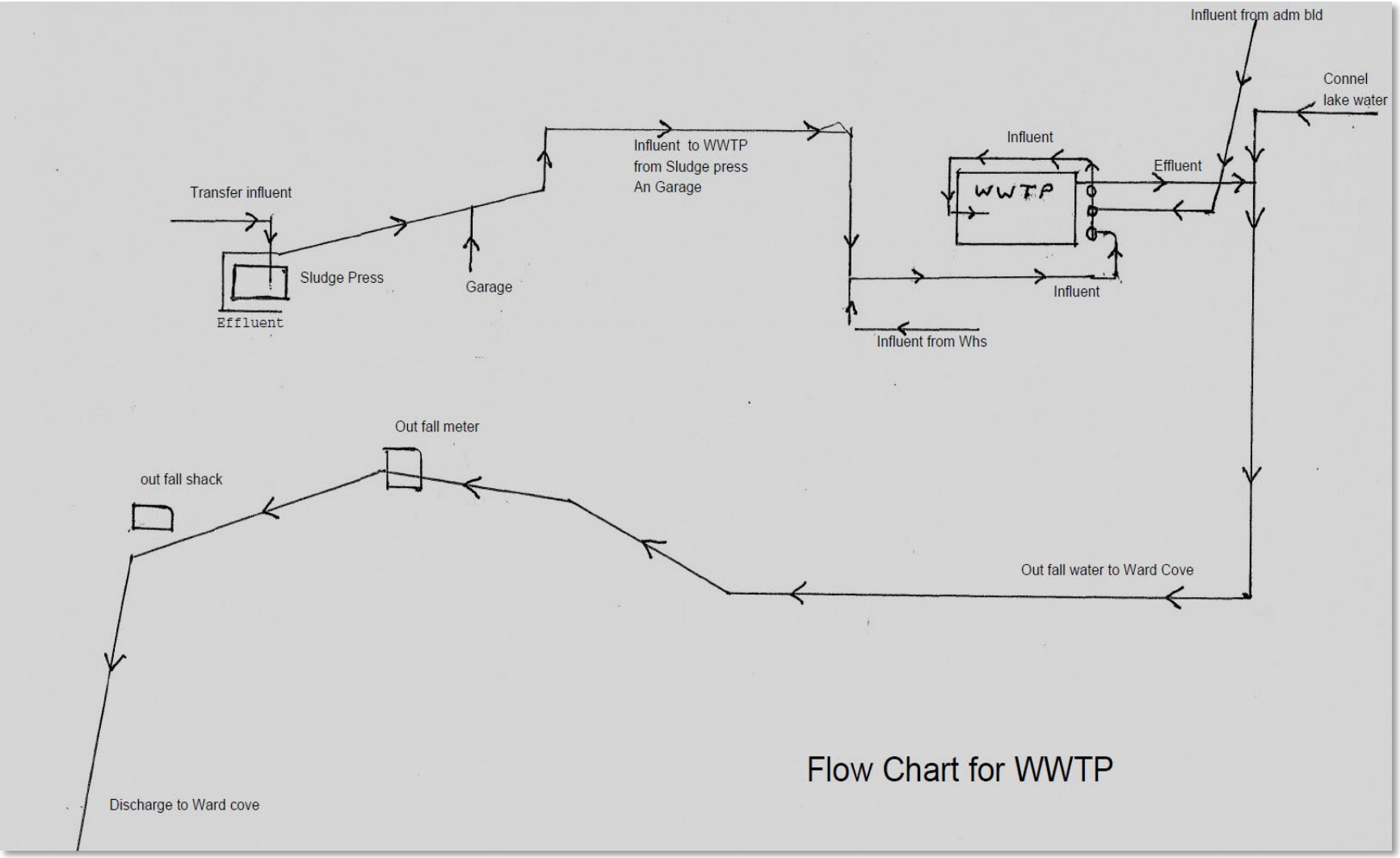
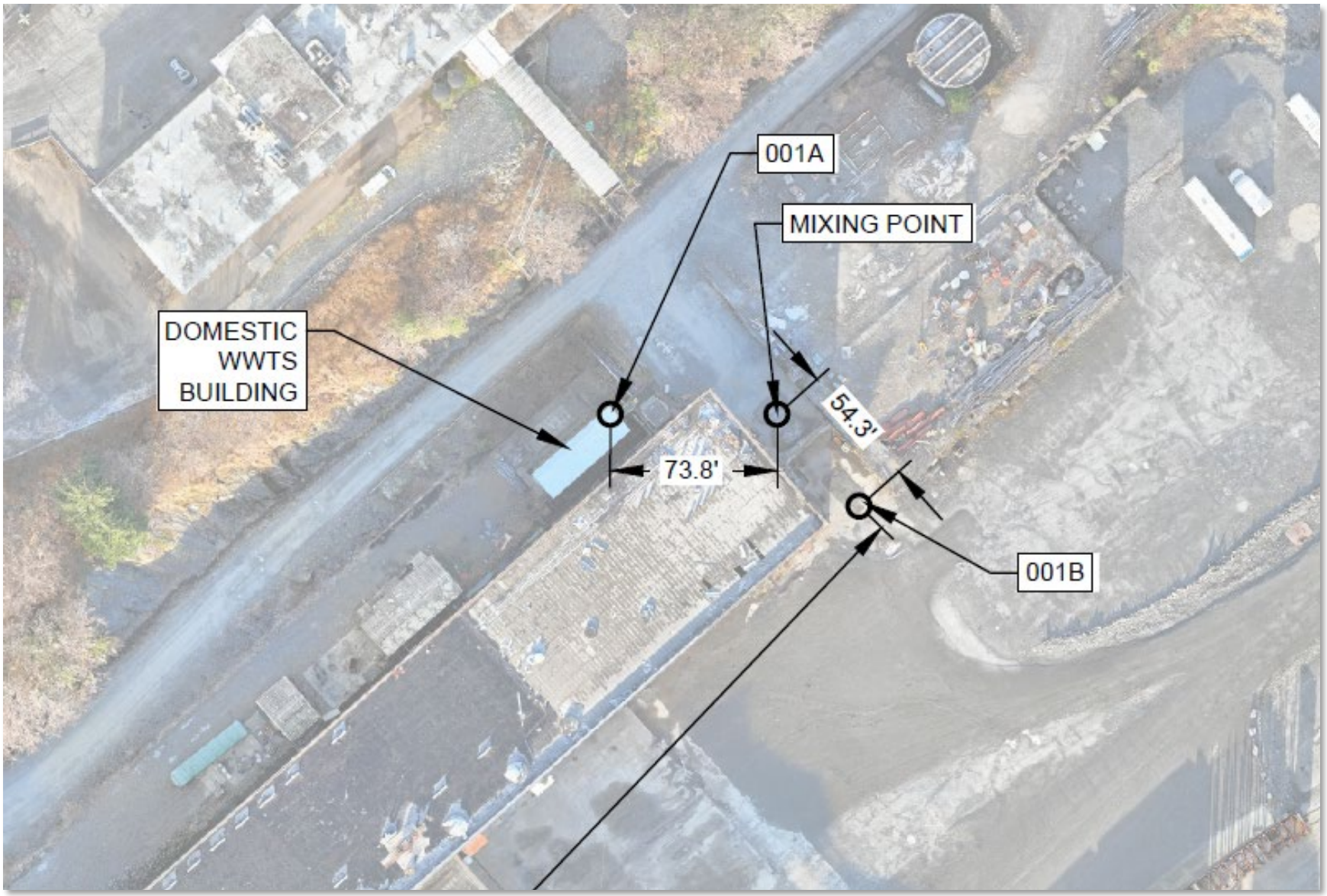


Figure 3: Facility Map (Aerial)



2.2 Wastewater Treatment

The facility was designed and constructed to provide secondary treatment of domestic wastewater using activated sludge and extended aeration prior to final discharge into the marine waters of Ward Cove. Treatment involves preliminary treatment via screening, primary treatment via clarifiers, secondary treatment via activated sludge and extended aeration, further clarification via skimming and settling followed by chlorine disinfection (see Figure 2). The average daily design flow rate for the facility is 25,000 gpd.

Influent is directed through a bar screen and comminutor to remove large solids (greater than 1 inch) and to promote bacterial digestion. After the initial screening the wastewater flows into an aeration tank where it is combined with return activated sludge. The effluent is aerated by submerged bottom air diffusers. A rotary blower mounted at the top of the settling tank provides air in 15-minute intervals, piped to the diffusers at the bottom of the aeration tank. Decomposition of organic waste takes place in the presence of oxygen supplied by the air diffusers. Adequate mixing is achieved by introducing air along one side of the tank through bottom air diffusers, creating mixing currents within the wastewater whilst maintaining adequate air supply for the activated sludge. The aeration tank is designed to provide at least 24 hours detention of the full design flow of 25,000 gpd and contains baffles to prevent the accumulation of sewage solids.

From the aeration tank, the aerated treated wastewater and activated sludge mix passes through a port in the wall that provides flow to a settling tank/clarifier at a rate that sustains a four-hour retention time. A skimmer removes floating solids and discharges them back into the aeration tank. Activated sludge settles and is returned continuously to the aeration tank by an air lift sludge return system. Extended aeration is achieved as the returned activated sludge is fermented using the influent wastewater as the carbon source to promote biological phosphorous removal, nitrification and removal of biochemical oxygen demand (BOD_5).

The treated effluent flows over a weir into the discharge line and passes into a 750-gallon chlorine contact tank. Effluent flows over chlorine tablets (up to 68%) that disintegrate over time. Baffles in the tank ensure effluent is mixed with the chlorine for 30 to 45 minutes before it is discharged from the tank. Treated effluent is tested for residual chlorine three times a week to determine if additional disinfection is needed.

Following disinfection, the final effluent flows past a sample collection point, internal Outfall 001A, used to determine compliance with secondary treatment requirements per 18 AAC 83.010(c), prior to discharging into a wooden stave pipeline that carries freshwater diverted from Connell Lake. In 2022, the sample collection point for Outfall 001B was relocated to mitigate saltwater intrusion from Ward Cove. The new effluent sampling point for Outfall 001B is located in a manhole and meets the requirements found in permit section 1.2.5. The wooden stave pipeline carries the treated wastewater effluent mixed with freshwater from Connell Lake and terminates approximately 100 feet from the shoreline into Ward Cove.

2.2.1 Sludge Processing

The facility accepts sludge and septage from septic tanks and marine vessels throughout Ketchikan Gateway Borough. The mixed liquid sludge and septage is stored in an aerated sludge storage tank before it is screened and pumped to a belt filter press for dewatering. The belt filter thickens and

dewaters the mixture to approximately 12%. Filtrate and spray water from the sludge dewatering process is stored in a holding tank until enough volume is collected to be discharged to the WWTF for treatment at a maximum rate of 10,000 gpd. The screenings are compacted, and the dewatered sludge is conveyed to a shipping container. Sludge processed at the facility does not have industrial waste characteristics and meets ceiling concentrations in
Table 1 of 40 CFR 503.13 and pollutant concentrations in Table 3 of 40 CFR 503.13. Dewatered solids are shipped to the Rabanco (Republic Services Company) RCRA Subtitle D certified landfill in Washington State.

2.3 Pollutants of Concern

Pollutants of concern known to be present in the effluent of the Ward Cove WWTF consist of domestic wastewater conventional pollutants regulated in the technology-based effluent limits (TBELs) via the secondary treatment standards, including biochemical oxygen demand (BOD_5), total suspended solids (TSS) and pH. Additional domestic wastewater pollutants known to be in the discharge are dissolved oxygen (DO), total residual chlorine (TRC), fecal coliform (FC) bacteria, enterococci bacteria, and copper. The TMDL for Ward Cove identified residues and DO as pollutants of concern (see Section 4.4). Additionally, temperature has been identified as a potential pollutant of concern for POTWs. Those pollutants reported above water quality criteria and/or permit limits are listed in Table 1.

The previous APDES permit required additional monitoring at Connell Lake to determine background concentrations of copper. Monitoring for copper at internal Outfall 001A generated data to establish associated WQBELs. Based on the number of samples collected last permit cycle, the associated results above the WQS criteria, and the results of reasonable potential analysis calculations, copper remains a pollutant of concern. Monitoring required in the previous APDES permit is continued and extended in the permit. For more information regarding copper monitoring rationale see Appendix section 3.4.8. The state derived a maximum expected concentration (MEC) of copper after reviewing effluent data from June 2020 to June 2025. The permittee provided the final report that provided a dilution factor of 158.7 in the wood stave pipe prior to discharge to Ward Cove. The assumed dilution results in a concentration that is below the chronic marine aquatic life water quality standard for copper of 3.1 µg/L.

(Table 1: Ward Cove Wastewater Treatment Facility Map
located on the following page.)

Table 1: Pollutants Observed in Effluent Above Criteria or Permit Limit

Pollutant	Units [a]	Internal Outfall 001A		Outfall 001B	
		Maximum Observed Concentration	Permit Limit or Water Quality Criteria [b]	Maximum Observed Concentration	Water Quality Criteria
Biochemical Oxygen Demand (BOD_5)	mg/L	48.27	30	N/A	
Total Suspended Solids (TSS)	mg/L	32	30	N/A	
pH (Daily Minimum)	S.U.	5.78 (lowest)	6.0	5.8 (lowest)	6.5
pH (Daily Maximum)	S.U.	N/A		9.39	8.5
Temperature	° C	19.7	15	17.0	15
Total Residual Chlorine (TRC) [c]	mg/L	1.09	1.0	0.1	0.0075 (chronic)
				0.1	0.013 (acute)
Fecal Coliform (FC) Bacteria	FC/ 100 mL	31,000	800	118	43
Enterococci bacteria	cfu/ 100 mL	4200	Report	74	35
Copper, total recoverable	µg/L	177	Report	54	4.8 (acute)

Footnotes:

a. Units: mg/L = milligrams per liter, S.U.= standard units, FC/100mL = Fecal Coliform per 100 milliliters, cfu/100 mL = colony forming units per 100 milliliters, and µg/L = micrograms per liter.
b. Daily Maximum unless specified otherwise.
c. The TRC effluent limits are not quantifiable using EPA-approved analytical methods. DEC will use the minimum level (ML) of 0.1 mg/L as the compliance evaluation level for this parameter.

2.4 Compliance History

DEC reviewed Discharge Monitoring Reports (DMRs) submitted by Full Cycle LLC for monitoring periods from June 2020 to June 2025 to determine the facility's compliance with effluent limits. The DMR review revealed inconsistent effluent monitoring and identified multiple permit exceedances. Effluent limit exceedances for internal Outfall 001A are summarized in Table 2, and in Table 3 for Outfall 001B.

DEC's Compliance and Enforcement Program conducted a facility inspection on November 14, 2022. The inspection report indicated that the facility was not operating within the permit requirements. DEC's Compliance and Enforcement Program issued a Notice of Violation (NOV) to the permittee on

December 14, 2022. The NOV addressed non-compliance with effluent limits, absence of effluent monitoring and deficiencies in the reporting of monitoring results. The NOV also requested that the permittee update the Quality Assurance Project Plan (QAPP).

As required by the NOV, the permittee provided a response to DEC's Compliance and Enforcement Program on January 27, 2023. The response included the submission of an updated facility QAPP and BMP Plan, as well as missing DMR submissions, noncompliance reports and explanations for exceedances.

Table 2: Outfall 001A Effluent Limit Exceedances

Parameter	Units [a]	Basis	Permit Limit	Number of Exceedances	Maximum Reported Value	Date of Maximum Reported Value
BOD_5	mg/L	Weekly average	45	1	48.27	May 2024
BOD_5	mg/L	Monthly average	30	1	48.27	May 2024
TSS	mg/L	Daily maximum	60	1	70.00	July 2024
TSS	mg/L	Monthly average	30	1	32.00	November 2020
pH	S.U.	Daily minimum	6.0	1	5.78	June 2021
TRC	mg/L	Daily maximum	1.0	1	1.09	August 2020
FC Bacteria	FC/100 mL	Daily maximum	800	5	31000	January 2021
FC Bacteria	FC/100 mL	Weekly average	400	3	31000	January 2021
FC Bacteria	FC/100 mL	Monthly average	200	1	8570	May 2021

Footnotes:
a. Units: mg/L = milligrams per liter, S.U.= standard units, and FC/100 mL = Fecal Coliform per 100 milliliters.

Table 3: Outfall 001B Effluent Limit Exceedances

Parameter	Units [a]	Basis	Permit Limit	Number of Exceedances	Maximum Reported Value	Date of Maximum Reported Value
pH	S.U.	Daily maximum	8.5	1	9.39	December 2019
pH	S.U.	Daily minimum	6.5	4	5.8 (lowest)	March 2021
FC bacteria	FC/100 mL	Daily maximum	43	5	46.1	March 2021
FC bacteria	FC/100 mL	Monthly average	14	4	118	March 2021
Enterococci	cfu/100mL	Monthly average	35	1	74	August 2021

Footnotes:
a. Units: S.U. = standard units, cfu/100mL = colony forming units per 100 milliliters, and FC/100 mL = Fecal Coliform per 100 milliliters.

3.0 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

3.1 Basis for Permit Effluent Limits

Per 18 AAC 83.015, the Department prohibits the discharge of pollutants to waters of the U.S. unless the permittee has first obtained a permit issued by the APDES Program that meet the purposes of AS 46.03 and is in accordance with the CWA Section 402. Per these statutory and regulatory provisions, the

Permit includes effluent limits that require the discharger to (1) meet standards reflecting levels of technological capability, (2) comply with 18 AAC 70 – WQS, and (3) comply with other state requirements that may be more stringent.

The CWA requires that the limits for a pollutant be the more stringent of either TBELs or WQBELs. TBELs are set according to the level of treatment that is achievable using available technology. A WQBEL is designed to ensure that the WQS are met. WQBELs may be more stringent than TBELs.

The permit contains a combination of both TBELs and WQBELs. The Department first determines if TBELs are required to be incorporated into the permit. TBELs for publicly owned treatment works (POTWs), which apply to the Ward Cove WWTF, are derived from the secondary treatment standards found in Title 40 Code of Federal Regulations (40 CFR) §133.102 and 40 CFR §133.105, adopted by reference 18 AAC 83.010(e). The following section summarizes the proposed effluent limits. A more expansive technical and legal basis for the proposed effluent limits is provided in Appendix A Basis for Effluent Limitations.

3.2 Basis for Effluent and Receiving Water Monitoring

In accordance with AS 46.03.110(d), the Department may specify in a permit the terms and conditions under which waste material may be disposed. Monitoring in a permit is required to determine compliance with effluent limits. Monitoring may also be required to gather effluent and receiving water data to determine if additional effluent limits are required and/or to monitor effluent impact on the receiving waterbody quality.

The Department may also require the permittee to perform the additional effluent monitoring required by the APDES application Form 2A for POTWs, so that this data will be available when the permittee applies to reissue the APDES permit. The permittee is responsible for conducting the monitoring and submitting the results with the application for renewal of the APDES permit. The permittee should consult and review Form 2A upon permit issuance to ensure that the required monitoring in the application will be completed prior to submitting a request for permit renewal.

3.3 Effluent Limits and Monitoring Requirements

The wastewater characteristics of Ward Cove WWTF are identical to a POTW and effluent limits have been established to meet requirements based on available wastewater treatment technology. Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance, and to evaluate effluent quality and variability.

The permittee has the option of taking more frequent samples than required under the permit. These additional samples must be used for averaging (for pollutants results reported on a monthly or weekly average) if they are conducted using the Department approved test methods (found in 18 AAC 70 and 40 CFR §136, adopted by reference in 18 AAC 83.010). For all effluent monitoring the permittees must use a sufficiently sensitive EPA approved test method that quantifies the pollutants to a level lower than applicable limits or water quality standards or use the most sensitive test method available, per 40 CFR §136, adopted by reference in
18 AAC 83.010(f).

3.3.1 Internal Outfall 001A

The permit requires influent and effluent monitoring at internal Outfall 001A. The permit carries forward the monitoring requirements and effluent limits for BOD_5, TSS, pH, TRC, DO and FC bacteria from the previous permit, including case-by-case TBELs based on Best Professional Judgment (BPJ) consistent with the requirements found in 40 CFR §133.102 (adopted in 18 AAC 83.010). Further information outlining the details of the effluent limits and monitoring requirements for internal Outfall 001A can be found in Table 2 of the permit and in Appendix A.

The permit requires that the total discharge flow is monitored for internal Outfall 001A. The effluent limit for total discharge flow is based on the design flow for the Ward Cove WWTF and is changed from an average monthly limit to a maximum daily limit, per 18 AAC 83.520.

The permit requires monitoring of BOD_5, TSS and pH. Effluent limits are based on the secondary treatment standards adopted in 18 AAC 83.010(e). The monitoring requirements and effluent limits are carried forward from the previous permit. This includes the permit requirement to monitor the influent for BOD_5 and TSS to calculate monthly removal rates for these parameters.

The permit requires monitoring of DO concentration based on the standard recommended minimum concentration of DO for wastewater facilities with mixed liquor aeration tank systems, applicable to Ward Cove WWTF. The monitoring requirement and effluent limit are carried forward from the previous permit.

The permit requires monitoring of TRC concentrations and loadings. Effluent limits are based on standard operating procedures for domestic wastewater plants that use chlorine to disinfect wastewater, applicable to Ward Cove WWTF. The monitoring requirement and effluent limits are carried forward from the previous permit.

The previous permit required monitoring total ammonia as nitrogen. DEC reviewed effluent monitoring data from June 2020 to June 2025 at Outfall 001A. Of the 14 daily maximum samples reported, 8 were non-detect and the detectable samples ranged from 0.0 mg/L to 10.9 mg/L with an average value of 1.24 mg/L. Based on the low results, in conjunction with the dilution occurring between internal Outfall 001A and Outfall 001B, DEC determined that ammonia is not a pollutant of concern; therefore, the Department removed the ammonia monitoring requirement for Internal Outfall 001A.

The permit requires monitoring of FC bacteria and enterococci bacteria. Effluent limits are based on BPJ consistent with the requirements in 40 CFR §133.102 (adopted in 18 AAC 83.010), 18 AAC 72.050 and 18 AAC 72.990. The monitoring requirement and effluent limits are carried forward from the previous permit.

The permit requires monitoring for temperature. Temperature was identified as a potential pollutant of concern associated with a POTW, applicable to the Ward Cove WWTF. The monitoring requirement is carried forward from the previous permit.

The permit requires monitoring for copper. As discussed in Section 2.3 above, copper continues to be identified as a pollutant of concern and the monitoring requirement is carried forward.

3.3.2 Outfall 001B

The permit requires effluent monitoring after the last treatment unit and after mixing with water from Connell Lake and puts in place case-by-case WQBELs. Limits and monitoring requirements for total

discharge flow, pH, DO, TRC, and FC bacteria have been retained from the previous permit. Effluent limits are from the Alaska WQS 18 AAC 70.020. Further information outlining the details of the effluent limits and monitoring requirements for Outfall 001B can be found in Table 3 of the permit and in Appendix A.

During the last permit cycle, the permittee shifted the monitoring location for Outfall 001B. The permittee reported seawater intrusion during high tides at the previous monitoring location, impacting TRC results during analysis. The new Outfall 001B monitoring location is higher in the outfall line but is still in compliance with section 1.2.5 of the permit.

The permit requires the reporting of TRC maximum daily and average monthly concentrations. Effluent limits are based on the acute and chronic limits for aquatic life for marine water in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances*. Monitoring frequency is carried forward in this permit to sufficiently monitor the facility's performance and variability.

The previous permit required monitoring total ammonia as nitrogen. DEC reviewed daily maximum effluent monitoring results from June 2020 to June 2025 for Outfall 001B. Of the 12 samples collected, 8 were non-detect and detectable samples ranged from 0.0 mg/L to 0.2 mg/L with an average value of 0.06 mg/L. Upon reviewing the effluent data from Outfall 001A and Outfall 001B, the state did not recognize a relationship between ammonia levels at the two outfalls. DEC determined that ammonia is not a pollutant of concern at Outfall 001B, therefore the ammonia monitoring requirement for Outfall 001B was removed.

The monitoring frequency for FC bacteria is carried forward to the next permit to sufficiently monitor the facility's performance and variability.

The permit includes seasonal monitoring and effluent limits for enterococci bacteria. Effluent limits are taken from the WQS in 18 AAC 70.020(b)(14)(B). Monitoring frequency of monthly reporting is required to sufficiently monitor the facility's performance and variability and monitor Outfall 001B's compliance with the Alaska WQS.

The permit requires monitoring for temperature. The parameter is identified as potential pollutants of concern associated with POTW, applicable to the Ward Cove WWTF. The monitoring requirement is carried forward from the previous permit.

The permit requires monitoring for copper. Copper continues to be identified as a pollutant of concern. Monitoring frequency of monthly reporting is required to sufficiently monitor the facility's performance and variability, and to continue to produce a robust dataset for conducting reasonable potential analysis for the next permit reissuance.

3.4 Whole Effluent Toxicity Monitoring

Per 18 AAC 70.030 WQS require that an effluent discharged to a waterbody may not impart chronic toxicity to aquatic organisms, expressed as 1.0 chronic toxic unity (TUc), at the point of discharge, or if the Department authorizes a mixing zone in a permit, approval, or certification, at or beyond the mixing zone boundary, based on the minimum effluent dilution achieved in the mixing zone. 18 AAC 83.435 requires that a permit contain limitations on whole effluent toxicity (WET) when a discharge has reasonable potential to cause or contribute to an exceedance of a WQS.

WET tests are laboratory tests that measure total toxic effect of an effluent on living organisms, WET tests use small vertebrate and invertebrate species and/or plants to measure the aggregate toxicity of an effluent. WET testing is not included in the permit as the discharge from the Ward Cove WWTF is expected to meet the water quality criteria at Outfall 001B. The Department has determined that compliance with the terms and conditions of the permit will ensure that reasonable potential for WET does not exist. The Department has established permit monitoring requirements for other specific 'indicator' pollutants, e.g. total residual chlorine and copper, to evaluate pollutants of concern associated with the effluent that have the highest likelihood of imparting toxicity.

4.0 RECEIVING WATERBODY

4.1 Description of Receiving Waterbody

Ward Cove is an estuary on the west side of Revillagigedo Island approximately 5 miles north of the city of Ketchikan, in southeast Alaska. The area surrounding the cove is mountainous and largely forested. The predominant orientation of the cove is from northeast at the head to southwest at the mouth, which opens onto the Tongass Narrows.

The cove is approximately 1 mile long and 0.5-mile-wide at its widest point. The depth at the head of the cove (the northeast portion) is 10 feet below mean lower low water (MLLW) and at the mouth (the southwest portion) is 200 feet below MLLW. The shoreline is mostly rocky basalt and is relatively steep.

Ward Creek is the cove's primary source of fresh water, with Walsh Creek and other unnamed intermittent streams also entering the cove. Runoff from precipitation enters Ward Cove along the shoreline from the immediate watershed. The cove is characterized by an estuarine flow pattern with relatively low salinity waters near the surface and saline waters at depth. Currents in Ward Cove are driven by a semidiurnal tide with a mean tidal range of 13.3 feet. Flow velocities vary with depth and there appears to be no area of stagnation in Ward Cove. Benthic habitats of the cove are comprised of areas of soft substrate as well as areas of exposed rock. Soft substrates consist of varying amounts of clay, silt, and sand.

4.2 Outfall Description

The Ward Cove WWTF continually discharges treated effluent into Ward Cove through Outfall 001B, a single port discharge without a diffuser. The terminus of Outfall 001B is positioned approximately 100 feet from the north shore and approximately 25 feet below the mean lower low water (MLLW). Geographic coordinates of the outfall are 55º24'15" North latitude and 131º43'58" West longitude.

4.3 Water Quality Standards

Section 301(b)(1)(C) of the CWA required the development of limits in permits necessary to meet water quality standards by July 1, 1977. Per 18 AAC 83.435, APDES permits must include conditions to ensure compliance with WQS. Additionally, regulations in 18 AAC 70 require that the conditions in permits ensure compliance with the WQS. The State's WQS are composed of waterbody use classifications, numeric and/or narrative water quality criteria, and an Antidegradation Policy. The use classification system identifies the designated uses that each waterbody is expected to achieve. The

numeric and/or narrative water quality criteria are the criteria deemed necessary by the state to support the designated use classification of each waterbody. The antidegradation policy ensures that the existing uses and the level of water quality necessary to protect the uses are maintained and protected.

Water bodies in Alaska are designated for all uses unless the water has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some waterbodies in Alaska can also have site-specific water quality criterion per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b). The receiving water for this discharge, Ward Cove, has not been reclassified, nor have site-specific water quality criteria been established. Therefore, existing uses and designated uses are the same and Ward Cove must be protected for all marine use classes as per 18 AAC 70.020(a)(2) and 18 AAC 70.050. The designated use classes for marine water include (A) water supply (aquaculture, seafood processing, and industrial), (B) water recreation (contact and secondary), (C) growth and propagation of fish, shellfish, other aquatic life, and wildlife, and (D) harvesting for consumption of raw mollusks or other raw aquatic life.

The discharge from the Ward Cove WWTF is expected to meet water quality standards to protect all uses at the Outfall 001B. The permit does not include receiving waterbody limits or monitoring requirements.

4.4 Water Quality Status of Receiving Water

Any part of a waterbody for which the water quality does not, or is not expected to, intrinsically meet applicable WQS is defined as a "water quality limited segment" and placed on the state's impaired waterbody list. For an impaired waterbody Section 303(d) of the CWA requires states to develop a TMDL management plan for the waterbody. The TMDL documents the amount of a pollutant a waterbody can assimilate without violating a state's WQS and allocates that load to known point sources and nonpoint source.

Ward Cove was placed on the Section 303(d) list in 1990 for non-attainment of WQS for residues and dissolved gas criteria due to pulp residues, logs, bark and woody debris, and low DO concentrations from historical discharges and associated activity from the Ketchikan Pulp Company (KPC) pulp mill operations and a seafood processing facility formally located in Ward Cove.

A water quality assessment of Ward Cove was completed by 1996, and the 1996 303(d)-list included Ward Cove as water quality-limited for four pollutant parameters: residues (wood residues), dissolved gas (dissolved oxygen), color, and toxic and other deleterious substances (sediment toxicity).

The 1998 303(d) list removed color as a pollutant because KPC's mill wastewater discharges to the waterbody ceased in 1997. DO, toxics and other deleterious organic and inorganic substances and residues (debris) remained on the list and required the development of a waterbody recovery plan or TMDL. Sediment toxicity was removed from the 2004 303(d) list and Ward Cove was placed in category 4b (other pollutant controls) because the Record of Decision for the Superfund sediment remediation project for Ward Cove was accepted as a pollution control requirement that achieved WQS for sediment toxicity.

The sediment toxicity impairment was removed from Section 303(d)/Category 5 list and moved to Category 2 in the 2006 Integrated Report. EPA completed and finalized a TMDL for Ward Cove in 2007 with WLAs in place for residues and DO. These impairments were removed from Section 303(d)/Category 5 list and moved to Category 4a in the 2008 Integrated Report.

In developing the 2007 TMDL, DEC and EPA identified all permitted discharges to Ward Cove, including the discharge of wastewater from the Ward Cove WWTF. The TMDL concluded that the Ward Cove WWTF does not discharge wood residues, and the small amount of suspended sediment that the facility is permitted to discharge is not considered relevant to the residues TMDL. The TMDL established a WLA for DO that prohibited "point source loading of oxygen-demanding substances that will cause a measurable decrease (0.2 mg/L) in DO level below 5.0 mg/L from June through September". The TMDL also acknowledged that the WWTF permit requires that the standard for DO be met at the point of discharge (that no mixing zone is authorized). The TMDL outlines that it expects that the freshwater discharge of the facility will rise in the water and be contained above the pycnocline in the summer. The impaired waters were those waters below the pycnocline.

The 2024 Integrated Water Quality Monitoring and Assessment Report classifies Ward Cove as a Category 4a waterbody, impaired with a recovery plan, with the Category 4a parameters being DO and residues. Category 4a waterbodies are defined as being impaired but an EPA approved TMDL has been established. Category 3 parameters are Temperature, pH, Nickel, Copper, pH and Zinc. Category 3 identifies waterbodies where there is not enough information to determine that WQS are attained for all or some designated uses. Category 2 parameters are fecal coliform and enterococcus (previously identified as a Category 3 in the 2022 Integrated Report), and organic enrichment. Waterbodies are classified as a Category 2 if there is enough information to determine that water quality standards are attained for all or some of their designated uses.

The permit includes the DO WQS effluent limit of 6.0 mg/L for Outfall 001B. Since this is met prior to discharge to Ward Cove the discharge will not contribute to a depletion of DO from what had previously been permitted and the TMDL is met.

4.5 Mixing Zone Analysis

In accordance with 18 AAC 70.240, the Department may authorize a mixing zone in a permit. Determination of the mixing zone requires an evaluation of critical conditions of the flow regimes of the receiving waterbody, effluent characterization and concentration projections, and discharge rates. These critical conditions are addressed in the permit application. A chronic mixing zone is sized to protect the ecology of the waterbody as a whole and an acute mixing zone is sized to prevent lethality to passing organisms.

The permittee did not request a mixing zone for the discharge from the Ward Cove WWTF. Accordingly, the Department has not considered authorization of a mixing zone for this permit. Compliance monitoring at internal Outfall 001A and Outfall 001B as required by the permit will continue to verify that the effluent is in compliance with applicable water quality criteria prior to discharge.

4.6 Additional Monitoring

The Connell Lake additional monitoring in the previous permit was used to determine background concentrations of FC bacteria and enterococci. Of the 63 FC bacteria samples collected, there were 19 reported non-detects with an average value of 7.68 FC/100mL for those samples with detectable values. The Department determined that this was a sufficient number of data to terminate the additional monitoring for FC bacteria. Of the 27 enterococci samples collected, there were 16 non-detects with an

average reported value of 9.18 cfu/100mL for those samples with detectable values. The Department determined that this was a sufficient number of data to terminate the additional monitoring for enterococci bacteria.

The required additional monitoring at Connell Lake for copper was intended to generate a sufficient dataset to characterize background concentrations in the wood stave pipe prior to confluence of the lake-fed water with effluent from Outfall 001A. DEC reviewed 23 samples, 15 of which were non-detect, with those detectable results ranging from 1.42 µg/L to 1980 µg/L. Based on the copper levels reported from Connell Lake and the dilution the effluent receives in the wood stave pipe prior to discharge, the Department determined the dilution received in the pipe is more than sufficient for the attainment of water quality criteria prior to discharge to Ward Cove. The Department has chosen to discontinue the additional copper monitoring in Connell Lake from the previous permit (see section A.4.3.7) but may decide to reinstate monitoring after data review during the next permit cycle.

5.0 ANTIBACKSLIDING

18 AAC 83.480 requires that "interim effluent limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit, unless the circumstances on which the previous permit was based have materially and substantially changed since the permit was issued, and the change in circumstances would cause for permit modification or revocation and reissuance under 18 AAC 83.135." 18 AAC 83.480(c) also states that a permit may not be reissued "to contain an effluent limitation that is less stringent than required by effluent guidelines in effect at the time the permit is renewed or reissued."

Effluent limitations may be relaxed as allowed under 18 AAC 83.480, CWA §402(o) and CWA §303(d)(4). 18 AAC 83.480(b) allows relaxed limitations in renewed, reissued, or modified permits when there have been material and substantial alterations or additions to the permitted facility that justify the relaxation, or, if the Department determines that technical mistakes were made.

The effluent limitations in this permit reissuance are consistent with 18 AAC 83.480. Therefore, the permit effluent limitations, standards, and conditions in AK0053384 are as stringent as in the previously issued permit. Accordingly, no further backsliding analysis is required for this permit reissuance.

6.0 ANTIDEGRADATION

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 waterbody's designated uses, WQBELs may be revised as long as the revision is consistent with the State's Antidegradation policy. The State's Antidegradation policy is found in the
18 AAC 70 Water Quality Standards (WQS) regulations at 18 AAC 70.015. The Department's approach to implementing the Antidegradation policy is found in 18 AAC 70.016 *Antidegradation implementation methods for discharges authorized under the federal Clean Water Act*. Both the Antidegradation policy and the implementation methods are consistent with 40 CFR 131.12 and approved by EPA. This section analyzes and provides rationale for the Department's decisions in the permit issuance with respect to the Antidegradation policy and implementation methods.

Using the policy and corresponding implementation methods, the Department determines a Tier 1 or Tier 2 classification and protection level on a parameter-by-parameter basis. A Tier 3 protection level applies to a designated water. At this time, no Tier 3 waters have been designated in Alaska.

18 AAC 70.015(a)(1) states that the existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected (Tier 1 protection level).

Ward Cove is listed in Category 4a on DEC's most recent 2024 Integrated Water Quality Monitoring and Assessment Report (Alaska's 2024 Integrated Report)*;* the listed parameters of DO and residues have been identified where <u>only</u> the Tier 1 protection level applies. Accordingly, this antidegradation analysis conservatively assumes that the Tier 2 protection level applies to all other parameters, consistent with 18 AAC 70.016(c)(1).

18 AAC 70.015(a)(2) states that if the quality of water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality must be maintained and protected, unless the Department authorizes a reduction in water quality (Tier 2 protection level).

The Department may allow a reduction of water quality only after the specific analysis and requirements under 18 AAC 70.016(b)(5)(A-C), 18 AAC 70.016(c)(7)(A-F), and 18 AAC 70.016(d) are met. The Department's findings are as follows:

18 AAC 70.016(b)(5)

(A) existing uses and the water quality necessary for protection of existing uses have been identified based on available evidence, including water quality and use related data, information submitted by the applicant, and water quality and use related data and information received during public comment;

(B) existing uses will be maintained and protected; and

(C) the discharge will not cause water quality to be lowered further where the department finds that the parameter already exceeds applicable criteria in 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b).

18 AAC 70.020 and 18 AAC 70.050 specify the protected water use classes for the State; therefore, the most stringent water quality criteria found in 18 AAC 70.020 and in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* (DEC 2022) apply and were evaluated. This will ensure existing uses and the water quality necessary for protection of existing uses of the receiving waterbody are fully maintained and protected.

The permit places limits and conditions on the discharge of pollutants. The limits and conditions are established after comparing TBELs and WQBELs and applying the more restrictive of these limits. The WQ criteria, upon which the permit effluent limits are based, serve the specific purpose of protecting the existing and designated uses of the receiving water. WQBELs are set equal to the most stringent water quality criteria available for any of the protected water use classes.

Conventional pollutants of concern in domestic wastewater are BOD_5, TSS, and pH. Additional domestic wastewater pollutants are temperature, DO, FC bacteria, and enterococci bacteria. Another wastewater pollutant of concern in the Ward Cove WWTF effluent is copper. The permit includes numeric effluent limits or continued monitoring addressing each of these pollutants of concern. The permit requires facilities to implement an Operation and Maintenance (O&M) Plan to minimize the

production of waste and the discharge of pollutants to waters of the U.S., to ensure that domestic wastewater facilities provide for the protection or attainment of existing and designated uses.

Section 1.2.2 of the permit requires that the discharge shall not cause or contribute to a violation of the Alaska WQS at 18 AAC 70. Ward Cove is designated as a Category 4a impaired water body for DO with an associated TMDL, therefore Tier 1 antidegradation analysis is required for the parameter of DO (see Fact Sheet Section 4.4). The Department concludes the terms and conditions of the permit will be adequate to fully protect and maintain the existing uses of the water and that the findings under 18 AAC 70.016(b)(5) are met.

18 AAC 70.016(c)

> ***(c) Tier 2 analysis for the lowering or potential lowering of water quality not exceeding applicable criteria.*** *Tier 2 applies when the water quality for a parameter in a water of the United States within this state does not exceed the applicable criteria under 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b) and receives the protection under 18 AAC 70.015(a)(2).*
>
> > *(3) the department will not conduct a Tier 2 antidegradation analysis for*
> >
> > > *(A) reissuance of a license or general or individual permit for a discharge that the applicant is not proposing to expand;*

In 2025, DEC conservatively assumed that the discharge from the Ward Cove WWTF was a discharge to a Tier 2 waterbody and accordingly conducted a Tier 2 antidegradation analysis. DEC determined that the Ward Cove WWTF permit would meet the Antidegradation Policy and implementation regulations.

18 AAC 70.016(c)(2)(A) states that when evaluating development of a license or general or individual permit for a discharge, the department will conduct a Tier 2 antidegradation analysis for a proposed new or expanded discharge. 18 AAC 70.990(75) states that new or expanded with respect to discharges means discharges that are regulated for the first time or discharges that are expanded such that they could result in an increase in a permitted parameter load or concentration or other changes in discharge characteristics that could lower water quality or have other adverse environmental impacts. Discharge is further defined in 18 AAC 83.990(22) as a discharge of a pollutant.

All pollutants regulated under the permit were also regulated under the prior permit, therefore, not considered a new discharge. The discharge covered under AK0053384 is not expanded from the previous permit. There will not be an increase in the permitted parameter load, concentration, or other change in discharge characteristics that could lower water quality or have other adverse environmental impacts.

18 AAC 70.016(c)(3)(A) states that the Department will not conduct a Tier 2 antidegradation analysis for reissuance of a license or general or individual permit for a discharge that the applicant is not proposing to expand. Therefore, consistent with 18 AAC 70.016(c)(2)(A) and 18 AAC 70.16(c)(3)(A), DEC is not conducting a Tier 2 antidegradation analysis for this permit reissuance.

> ***18 AAC 70.016(c)(7)(F)*** *18 AAC 70.015 and this section have been applied consistent with 33 U.S.C. 1326 (Clean Water Act, sec. 316) with regard to potential thermal discharge impairments.*

Discharges authorized under the permit are not associated with a potential thermal discharge impairment; therefore, the finding is not applicable.

7.0 OTHER PERMIT CONDITIONS

7.1 Quality Assurance Project Plan

The permittee is required to develop procedures to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The permittee is required to update, implement and maintain the QAPP. The QAPP shall consist of standard operating procedures the permittee must follow for collecting, handling, storing, and shipping samples; laboratory analysis; precision and accuracy requirements; data reporting, including method detection/reporting limits; and quality assurance/quality control criteria. The permittee is required to amend the QAPP whenever any procedure addressed by the QAPP is modified. The plan shall be retained on site and made available to the Department upon request.

7.2 Operation and Maintenance Plan

The permittee is required to properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance are essential to meet discharge limitations, monitoring requirements, and all other permit requirements. The permittee is required to update, implement and maintain the Operations and Maintenance Plan and ensure that it includes appropriate best management practices and pollution prevention measures. The plan shall be retained on site and made available within 120 days of the effective date of the final permit and to the Department upon request.

7.3 Industrial User Survey

18 AAC 83.340 requires POTWs to identify and locate all Significant Industrial Users (SIUs) that discharge process wastewaters and associated pollutants to their wastewater treatment system. General and specific pretreatment prohibitions at 40 CFR 403.5, adopted by reference at 18 AAC 83.010(g)(2), contain prohibitions that apply to each industrial user introducing pollutants into a POTW, whether or not the industrial user is subject to other National Pretreatment Standards, or any national, State, or local Pretreatment Requirements. Therefore, in order to assess whether an industry or business has the potential to violate any general or specific pretreatment prohibition, and to determine if a pretreatment program should be developed and/or if pretreatment requirements should be included in the Ward Cove WWTF wastewater discharge permit, the permittee is required to submit with their permit reissuance application, Form 2A, a list of those industries or businesses that discharge and/or have the potential to discharge non-domestic wastewater to the Ward Cove WWTF's collection system. DEC may request further information on specific industries or business to assist in this evaluation.

7.4 Electronic Discharge Monitoring Report

The permittee must submit DMR data electronically through NetDMR per Phase I of the E-Reporting Rule (40 CFR 127) upon the effective date of the permit. Authorized persons may access permit information by logging into the NetDMR Portal (https://cdx.epa.gov/). DMRs submitted in compliance with the E-Reporting Rule are not required to be submitted as described in permit Appendix A – Standard Conditions unless requested or approved by the Department. Any DMR data required by the Permit that cannot be reported in a NetDMR field (e.g. mixing zone receiving water data, etc.), shall be included as an attachment to the NetDMR submittal. DEC has established an e-Reporting Information website at https://dec.alaska.gov/water/compliance/electronic-reporting-rule that contains general

information about this new reporting format. Training materials and webinars for NetDMR can be found at https://usepa.servicenowservices.com/oeca_icis?id=netdmr_homepage..

Phase II of the E-Reporting rule integrates electronic reporting for all other reports required by the Permit (e.g., Annual Reports and Certifications). All wastewater permit required submissions (e.g., Notices of Intent (NOI's), Notice of Terminations (NOT), Annual Reports, Noncompliance Notification, and Corrective Action reports are to be submitted electronically through DEC's Environmental Data Management System (EDMS, accessible via https://dec.alaska.gov/water/edms), unless prior approval has been obtained from DEC for an alternative means.

7.5 Standard Conditions

Appendix A of the permit contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

8.0 OTHER LEGAL REQUIREMENTS

8.1 Ocean Discharge Criteria Evaluation (ODCE)

Section 403(a) of the CWA, Ocean Discharge Criteria, prohibits the issuance of a permit under Section 402 of the CWA for a discharge into the territorial sea, the water of the contiguous zone, or the oceans except in compliance with Section 403. Permits for discharges seaward of the baseline of the territorial seas must comply with the requirements of Section 403, which include development of an ODCE.

Interactive maps and downloadable data showing the U.S. baseline, territorial sea, and contiguous zone are available at U.S. Office of Coast Survey. The charts and maps are provided for information purposes only. The U.S. Baseline committee makes the official determinations on baseline. Ocean Discharge Criteria are not applicable for marine discharges to areas located landward of the baseline of the territorial sea.

A review of the baseline line maps revealed that the Ward Cove WWTF Outfall 001B terminus is positioned landward of the baseline of the territorial sea; therefore, Section 403 of the CWA does not apply to the permit, and an ODCE analysis is not required to be completed for this permit reissuance. Further, the permit requires compliance with WQS such that 40 CFR 125.122(b) is met and therefore the discharge is presumed not to cause unreasonable degradation of the marine environment.

8.2 Endangered Species Act (ESA)

The ESA requires federal agencies to consult with the National Oceanic and Atmospheric Administration (NOAA), NMFS and the USFWS if their actions could beneficially or adversely affect any threatened or endangered species. As a state agency, DEC is not required to consult with these federal agencies regarding permitting actions; however, DEC voluntarily contacts the agencies to notify them of the proposed permit issuance and to obtain listings of threatened and endangered species near the discharge.

DEC contacted USFWS and the NMFS on January 3, 2025 and requested them to identify any threatened or endangered species under their jurisdiction in the vicinity of the Ward Cove WWTF Outfall 001B terminus. NMFS did not respond with a determination.

DEC used the USFWS online IPAC (Information, Planning, and Conservation) tool to produce an endangered species list for Ward Cove. Accordingly, there are no federally listed, proposed or candidate species within the project area. Further information on this can be found on the USFWS website: https://ecos.fws.gov/ipac/.

The fact sheet and the permit will be provided to the agencies for review during the public notice period. Any comments received from these agencies will be considered prior to issuance of the permit.

8.3 Essential Fish Habitat (EFH)

EFH includes the waters and substrate (sediments, etc.) necessary for fish from commercially fished species to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires federal agencies to consult with National Oceanic Atmospheric Administration (NOAA) Fisheries (NMFS) when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. As a state agency, DEC is not required to consult with NFMS on EFH; however, DEC voluntary contacts NMFS to notify them of the proposed permit issuance and to obtain listings of EFH in the area.

DEC emailed NOAA on January 3, 2025. The ADF&G **Error! Hyperlink reference not valid.** and associated Atlas are the appropriate documents for determining EFH in Ward Cove. Accordingly, the freshwater stream that runs into the head of Ward Cove and the tributaries of this stream support spawning and rearing of sockeye (*Oncorhynchus nerka*), coho (*Oncorhynchus kisutch*), pink (*Oncorhynchus gorbuscha*), and chum salmon (*Oncorhynchus keta*), as well as Dolly Varden trout (*Salvelinus malma*) and steelhead. All these anadromous fishes migrate through Ward Cove as rearing smolt and adults returning to spawn. Juvenile salmon also use nearshore habitat during spring and early summer for feeding and predator avoidance prior to migration out to sea.

This fact sheet and the permit will be provided to the agencies for review during the public notice period and any comments received from these agencies will be considered prior to issuance of the permit.

8.4 Sludge (Biosolids) Requirements

Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. State and federal requirements regulate the management and disposal of sewage sludge (biosolids). The permittee must consult both state and federal regulations to ensure proper management of the biosolids and compliance with applicable requirements.

State Requirements

The Department separates wastewater and biosolids permitting. The permittee should contact the Department's Solid Waste Program for information regarding state regulations for biosolids. The permittee can access the Department's Solid Waste Program webpage for more information and who to contact.

Federal Requirements

EPA is the permitting authority for the federal sewage sludge regulations at 40 CFR Part 503. Biosolids management and disposal activities are subject to federal requirements in Part 503. The Part 503 regulations are self-implementing, which means that a permittee must comply with the regulations even if no federal biosolids permit has been issued for the facility.

A POTW is required to apply for an EPA biosolids permit. The permittee should ensure that a biosolids permit application has been submitted to the EPA. In addition, the permittee is required to submit a biosolids permit application to the EPA for the use or disposal of sewage sludge at least 180 days before this APDES permit expires in accordance with 40 CFR §122.21(c)(2) and §122.21(q) (see also 18 AAC 83.110(c) and 18 AAC 83.310, respectively). The application form NPDES Form 2S can be found on the EPA website www.epa.gov under NPDES forms. The completed NPDES Form 2S should be submitted to:

U.S. Environmental Protection Agency,
Region 10, NPDES Permits Unit OWW-130,
Attention: Biosolids Contact,
1200 Sixth Avenue, Suite 900,
Seattle, WA 98101-3140.

The EPA Region 10 telephone number is 1-800-424-4372. Information about EPA's biosolids program and CWA Part 503 is available at www.epa.gov and either search for 'biosolids' or go to the EPA Region 10 website link and search for 'NPDES Permits'.

8.5 Permit Expiration

The permit will expire five years from the effective date of the permit.

9.0 REFERENCES

Alaska Architects & Engineers, June 4, 2025. FINAL REPORT.pdf.

Alaska Department of Environmental Conservation (ADEC). https://dec.alaska.gov/water/water-quality/integrated-report, accessed January 30, 2026

ADEC, 2025. 18 AAC 70, Water Quality Standards, as amended through August 9, 2025.

ADEC, 2022. Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances, as amended through September 8, 2022.

ADEC, 2014. Alaska Pollutant Discharge Elimination System Permits Reasonable Potential Analysis and Effluent Limits Development Guide.

Alaska Department of Fish & Game (ADF&G), 2025. Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes.

U.S. Fish and Wildlife Service iPac Information for Planning and Consultation https://ecos.fws.gov/ipac/ January 3, 2025.

Appendix A. BASIS FOR EFFLUENT LIMITATIONS

A.1 Statutory and Regulatory Basis

18 Alaska Administrative Code (AAC) 70.010 prohibits conduct that causes or contributes to a violation of the water quality standards (WQS). 18 AAC 15.090 requires that permits include terms and conditions to ensure criteria are met, including operating, monitoring, and reporting requirements.

The regulations require the permitting authority to make this evaluation using procedures that account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving waterbody. The limits must be stringent enough to ensure that WQS are met and must be consistent with any available wasteload allocation (WLA). The Clean Water Act (CWA) requires a Publicly Owned Treatment Works (POTWs) to meet effluent limits based on available wastewater treatment technology, specifically, secondary treatment effluent limit standards found at Title 40 Code of Federal Regulations (40 CFR) 133, adopted by reference in Alaska Administrative Code (AAC) 18 AAC 83.010(e). The Department may find, by analyzing the effect of an effluent discharge on the receiving waterbody, that secondary treatment effluent limits are not sufficiently stringent to meet Alaska water quality standards (WQS). In such cases, the Department is required to develop more stringent water quality-based effluent limits (WQBELs), which are designed to ensure that the WQS of the receiving waterbody are met.

Secondary treatment effluent limits for POTWs do not limit every parameter that may be present in the effluent. Limits have only been developed for five-day biochemical oxygen demand (BOD5), total suspended solids (TSS), and pH. Effluent from a POTW may contain other pollutants, such as bacteria, total residual chlorine (TRC), total ammonia as nitrogen (ammonia), or metals, depending on the type of treatment system used and the quality of the influent to the POTW (e.g., industrial facilities, as well as residential areas discharging into the POTW). When technology-based effluent limits (TBELs) do not exist for a particular pollutant expected to be in the effluent, the Department must determine if the pollutant may cause or contribute to an exceedance of a water quality criterion for the waterbody. If a pollutant causes or contributes to an exceedance of a water quality criterion, a WQBEL for the pollutant must be established in the permit.

If DEC does not authorize a mixing zone, TBELs are selected for those parameters that are solely technology based, and water quality criteria are applied. The permittee has not requested a mixing zone so the Department did not consider a mixing zone authorization, and the discharge must meet water quality criteria at Outfall 001B.

A.2 Secondary Treatment Effluent Limitations

The CWA requires a POTW to meet requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as "secondary treatment," that all POTWs were required to meet by July 1, 1977. The secondary treatment standards in 40 CFR §133.102, which the Department has adopted in 18 AAC 83.010(e), are TBELs that apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD_5, TSS, and pH. In addition to the federal secondary treatment regulations in
40 CFR Part 133.102, the State of Alaska requires a maximum daily limitation (MDL) of 60 mg/L for both BOD_5 and TSS. This is defined in DEC Wastewater Disposal Regulations 18 AAC 72.990. The Wastewater Disposal regulations do not specify percent removal requirements; therefore, DEC applied those found in 40 CFR 133.

The secondary treatment standards (TBELs) are not directly applicable to the Ward Cove WWTF since the facility is not a POTW. Because the wastewater characteristics are identical to a POTW, the Department established case-by-case TBELs based on Best Professional Judgment (BPJ) consistent with the requirements found in 40 CFR §133.102 (adopted in 18 AAC 83.010) and 18 AAC 72.990. The TBELs listed in Table A-1 are applicable to internal Outfall 001A, domestic wastewater discharge, before any mixing occurs with the freshwater diverted from Connell Lake in the wooden stave discharge pipe.

Application of secondary treatment standards at internal Outfall 001A rather than Outfall 001B is appropriate because the domestic wastewater at internal Outfall 001A is treated separately and then combined with water prior to final marine discharge to Ward Cove. Per 18 AAC 83.550(a) "When permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible, effluent limitations or standards for dischargers of pollutants may be imposed on internal waste streams before mixing with other waste streams". As such, and as in the previous permit, internal Outfall 001A is established to apply the secondary treatment standards and to ensure that other water does not dilute the domestic waste stream to the point where the pollutants are not detectable. The TBELs applicable at internal Outfall 001A (including BPJ TBELs as described below) are listed in Table A-1.

Table A-1: Technology Based Effluent Limits at Internal Outfall 001A

Parameter	Units [a]	Average Monthly Limit (AML)	Average Weekly Limit (AWL)	Maximum Daily Limit (MDL)
BOD_5	mg/L	30	45	60
TSS	mg/L	30	45	60
BOD_5 and TSS Percent Removal	Percent (%)	85% (minimum)	N/A	N/A
pH	S.U.	6.0 – 9.0 SU at all times		
Total Residual Chlorine (TRC)	mg/L	0.5	0.75	1.0
Fecal Coliform Bacteria	FC/100 mL	200	400	800

a. Units: mg/L = milligrams per liter, S.U.= standard units, FC/100 mL = Fecal Coliform per 100 milliliters,

A.2.1 Total Residual Chlorine (TRC)

The internal Outfall 001A effluent limits for TRC outlined in Table A-1 are carried forward from the previous permit.

Ward Cove WWTF uses chlorine to disinfect wastewater prior to discharge. For internal Outfall 001A, a 0.5 mg/L TRC average monthly limit is derived from standard operating practices. The Water Pollution Control Federation's Chlorination of Wastewater (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate disinfection if a 0.5 mg/L chlorine residual is maintained after 15 minutes of contact time. Ward Cove WWTF effluent has a chlorine contact time of approximately 45 minutes; adequate for internal Outfall 001A to meet a 0.5 mg/L average monthly limit. These limits serve as Best Professional Judgment (BPJ) case-by-case TBELs consistent with the requirements found in 40 CFR §133.102 (adopted in 18 AAC 83.010) and State 18 AAC 72.990. In addition to average monthly limitations (AMLs), DEC regulations at 18 AAC 83.530 require that effluent limitations for POTWs be expressed as average weekly limits (AWLs) unless impracticable. The AWL for internal Outfall 001A is calculated to be 1.5 times the AML, consistent with the "secondary treatment" limits for BOD_5 and TSS. This results in an AWL for TRC of 0.75 mg/L.

A.2.2 Fecal Coliform Bacteria

The internal Outfall 001A effluent limits fecal coliform (FC) bacteria outlined in Table A-1 are carried forward from the previous permit.

The basis for these limits was described in the previous permit fact sheet as follows. The probable basis for the limits (widely implemented in other domestic wastewater discharge permits) is the definition of disinfection found in 18 AAC 72.990 (21)(A) & (B). The definition states that facilities that disinfect using different technologies, including chlorination, designed to eliminate pathogenic organisms, can produce effluent with the characteristics of meeting an AML of 200 FC/100 mL and an AWL of 400 FC/100 mL. These limits serve as BPJ case-by-case TBELs consistent with the requirements found in 40 CFR §133.102 (adopted in 18 AAC 83.010) and 18 AAC 72.990.

A.3 Mass-Based Limitations

Per 18 AAC 83.540 effluent limits are required to be expressed in terms of mass unless they cannot appropriately be expressed by mass, if it is infeasible, or if the limits can be expressed in terms of other units of measurement. In addition, 18 AAC 83.520 requires that effluent limits for a POTW be calculated based on the design flow of the facility in million gallons per day (mgd). The design flow of the Ward Cove WWTF is 0.025 mgd. The Department used the design flow to calculate loading limits in the permit for BOD_5, TSS, and TRC. The mass-based limits are expressed in pounds per day (lbs/day) and are calculated as follows:

Mass based limit (lbs/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

Where: 8.34 is a conversion factor with units (lbs x L) / (mg x gallon x 10^6)

A.4 Water Quality Based Effluent Limitations

WQBELs included in Alaska Pollutant Discharge Elimination System (APDES) permits are derived from WQS. APDES regulation 18 AAC 83.435(a)(2) requires that permits include WQBELs that can achieve WQS established under CWA Section 303, including state narrative criteria for water quality. The State's WQS are composed of use classifications, numeric and/or narrative water quality criteria, and an antidegradation policy. The use classification system identifies the designated uses that each waterbody is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary by the state to support the designated use classification of each waterbody. Designated uses are those uses specified in WQS for each waterbody or segment whether or not they are being attained [40 CFR Section 131.3(f)]. Existing uses are those uses actually attained in a waterbody on or after November 28, 1975, whether or not they are included in the WQS [40 CFR Section 131.3].

Waterbodies in Alaska are designated for all uses unless the water has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some waterbodies in Alaska can also have site–specific water quality criteria per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b).

Permit AK0053384 authorizes discharge of secondary treated domestic wastewater to marine water. The designated uses for marine water that have not been reclassified are water supply for aquaculture, seafood processing and industrial; contact and secondary recreation, and growth and propagation of fish, shellfish, other aquatic life, and wildlife, and harvesting for consumption of raw mollusks or other raw aquatic life.

A.4.1 Specific Water Quality-Based Effluent Limits

A.4.1.1 pH

The WQS at 18 AAC 70.020(b)(18)(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife states that the pH water quality criteria for marine waters may not be less than 6.5 or greater than 8.5 Standard Units (S.U.).

DEC reviewed pH monitoring data for Outfall 001B from June 2020 to June 2025. During this time period the average pH value observed was 6.78 S.U. The previous permit implemented WQBELs for pH that required a minimum of 6.5 S.U. and a maximum of 8.5 S.U., monitored once per quarter. The WQBEL and monitoring frequency requirement for Outfall 001B is carried forward in the permit.

A.4.1.2 Temperature

The WQS at 18 AAC 70.020(b)(22)(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife state that temperature may not cause the weekly average temperature to increase more than 1ºC. The maximum rate of change may not exceed 0.5ºC per hour. Normal daily temperature cycles may not be altered in amplitude or frequency. The next most stringent criteria is for water supply and may not exceed 15º C.

Temperature is being monitored at both internal Outfall 001A and Outfall 001B. The permit requires the permittee to monitor temperature of the effluent at internal Outfall 001A three times per week, and to report the temperature of the total discharge at Outfall 001B once per quarter.

A.4.1.3 Dissolved Oxygen

Aerobic microorganisms require dissolved oxygen (DO) in order to metabolize organic wastes into inorganic byproducts and reproduce. Municipal wastewater exerts a demand on the oxygen resource of waterbodies via BOD_5.

The 2004 Recommended Standards for Wastewater Facilities recommends a minimum concentration of 2.0 mg/L of DO in the mixed liquor aeration tank in design requirements for a mechanical aeration system. Ward Cove WWTF uses an activated sludge process with mechanical aeration. As such, a minimum DO concentration of 2.0 mg/L monitored at internal Outfall 001A is required to ensure a healthy microorganism population and the successful treatment of biological wastes.

The WQS at 18 AAC 70.020(b)(15)(A)(i) for aquaculture water supply are the most stringent standards for DO. The standards require that DO must be greater than 6 mg/L in receiving waters for a depth of one meter except when natural conditions cause this value to be depressed. The 2007 TMDL developed for Ward Cove requires that no point source loading of oxygen-demanding substances that will cause a measurable decrease (0.2 mg/L) in dissolved oxygen level below 5.0 mg/L from June through September. In no case may DO be greater than 17 mg/L. The concentration of total dissolved gas may not exceed 110% of saturation at any point of sample collection.

DEC reviewed DO monitoring data for both internal Outfall 001A and Outfall 001B from June 2020 to June 2025. The concentrations ranged from 2.08 mg/L to 16.99 mg/L at internal Outfall 001A and from 10.03 mg/L to 17.22 mg/L at Outfall 001B. The previous permit implemented WQBELs for DO that required a minimum DO of 2.0 mg/L at internal Outfall 001A, monitored once per month, and a DO range of 6.0 to 17 mg/L at Outfall 001B monitored once per quarter. The WQBEL and monitoring frequency requirements are carried forward in the permit.

A.4.1.4 Total Residual Chlorine (TRC)

The WQS at 18 AAC 70.020(b)(23)(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife state that the concentration of substances in water may not exceed the numeric criteria for aquatic life for marine water and human health for consumption of aquatic organisms only shown in the *Alaska Water Quality Criteria Manual*, or any chronic and acute criteria established in this chapter, for a toxic pollutant of concern, to protect sensitive and biologically important life stages of resident species of this state. The *Alaska Water Quality Criteria Manual* lists aquatic life for marine water criteria for total residual chlorine (TRC) as 0.0075 mg/L (chronic) and 0.013 mg/L (acute).

DEC reviewed TRC monitoring data for end of pipe Outfall 001B from June 2020 to June 2025. Results ranged from non-detect to 0.1 mg/L. The permit carries forward WQBELs for TRC at Outfall 001B of a maximum daily limit of 0.013 mg/L (in line with the WQS acute limit), and an average monthly level of 0.0075 mg/L (in line with the WQS chronic limit). The TRC effluent limits are not quantifiable using

EPA-approved analytical methods. DEC will use the minimum level (ML) of 0.1 mg/L as the compliance evaluation level for this parameter. The monitoring frequency is carried forward into this permit. The daily maximum/monthly average limits and monitoring requirements are WQBELs that will be carried forward in the permit.

A.4.1.5 Fecal Coliform (FC) Bacteria

Fecal coliform bacteria are a non-pathogenic indicator species whose presence suggests the likelihood that pathogenic bacteria are present. The WQS at 18 AAC 70.020(b)(14)(D) for harvesting of raw mollusk or other aquatic life criterion specifies that the fecal coliform (FC) bacteria concentration shall not exceed 14 FC/100 mL and not more than 10% of samples shall exceed a FC bacteria concentration of 43 FC/100 mL.

DEC reviewed FC bacteria monitoring data for Outfall 001B from June 2020 to June 2025. The results ranged from 0 to 118 cfu/100mL with an average value of 12.0 cfu/100mL. Based on the reported results, the Department determined that there is continued potential for FC bacteria to exceed water quality criteria at Outfall 001B. DEC carries the previous monitoring and effluent limits at Internal Outfall 001A forward in the permit.

The permit carries forward WQBELs for FC bacteria at Outfall 001B of a maximum daily limit of 43 FC bacteria/100mL, and an average monthly limit of 14 FC bacteria/100mL. The monitoring frequency carries forward from the previous permit. The WQBEL is carried forward from the previous permit.

Full Cycle LLC does not have direct control over the flow from Connell Lake into the wooden stave outfall pipeline. The dilution factor submitted by Full Cycle LLC is 158.7. When this is applied to the FC bacteria maximum daily limit of 800 cfu/100, the WQS of 14 cfu/100 at 18 AAC 70.020 (14)(D) is met.

A.4.1.6 Enterococci Bacteria

Enterococci bacteria are indicator organisms of harmful pathogens recommended by the EPA to protect primary contact recreation for marine waters.

The EPA Beaches Environmental Assessment and Coastal Health Act (BEACH Act) requires states and territories with coastal recreation waters to adopt enterococci bacteria criteria into their WQS. The WQS at 18 AAC 70.020(b)(14)(B) for contact recreation specifies that the enterococci bacteria concentration shall not exceed 35 enterococci cfu/100mL, and not more than 10% of the samples may exceed a concentration of 130 enterococci cfu/100mL.

DEC reviewed enterococci bacteria monitoring data for internal Outfall 001A from June 2020 to June 2025. Of the 24 results, 10 were non-detects, and detectable samples ranged from 1 cfu/100mL to 4200 cfu/100mL. The Department determined that enterococci has potential to exceed Alaska WQS. The monitoring requirements are carried forward from the previous permit to monitor pollutant levels at the internal compliance point and to monitor impact on pollutant levels at Outfall 001B.

The permit carries forward WQBELs for enterococci bacteria at Outfall 001B of a maximum daily limit of 130 enterococci bacteria/100mL and an average monthly limit of 35 enterococci bacteria/100mL. The monitoring frequency has been carried forward in the permit. Enterococci bacteria monitoring is required to be performed at the same time as FC bacteria monitoring and shall be collected at both internal Outfall 001A and Outfall 001B on the same day, seasonally between May 1 – September 30, determined to be when the receiving water would most likely be used for primary contact recreation. This WQBEL is carried forward from the previous permit to reflect end of pipe compliance with the Alaska WQS.

A.4.1.7 Copper

The WQS at 18 AAC 70.020(b)(23)(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife state that the concentration of substances in water may not exceed the numeric criteria for aquatic life for marine water and human health for consumption of aquatic organisms only shown in the

Alaska Water Quality Criteria Manual, or any chronic and acute criteria established in this chapter, for a toxic pollutant of concern, to protect sensitive and biologically important life stages of resident species of this state. The *Alaska Water Quality Criteria Manual* lists aquatic life for marine water criteria for dissolved copper as 3.1 µg/L (chronic) and 4.8 µg/L (acute).

Copper was identified as a pollutant of concern in the previous permit and monitoring requirements were included for internal Outfall 001A. DEC reviewed copper monitoring data for internal Outfall 001A from June 2020 to June 2025. Of the 59 results, only one was non-detect and the detectable results ranged from 0.85 µg/L to 177 µg/L, with an average of 51.12 µg/L reported. The Department determined that, because the available data set is limited and highly variable, same-day monitoring at Outfalls 001A and 001B at the current frequency remains necessary to evaluate copper dilution at Outfall 001B. Similarly, copper is a pollutant of concern whose MEC is determined with the dilution factor as stated in Section 2.3 of this fact sheet. The monitoring only requirement for Outfall 001B is carried forward in the permit.

A.4.1.8 Residues: Floating solids, debris, sludge, deposits, foam, scum, or other residues.

The Alaska WQS (2025) for residues are narrative. The most stringent standard for marine water, found at 18 AAC 70.020(b)(20)(C), "May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use, or cause acute or chronic problem levels as determined by bioassay or other appropriate methods; may not, alone or in combination with other substances, cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines." This narrative standard is carried forward from the previous permit.

A.5 Selection of the Most Stringent Limitations

Table A-2 provides a summary and reference for parameters that have effluent limits at the internal Outfall 001A and Outfall 001B at Ward Cove WWTF.

Table A-2: Summary of Effluent Limits

Parameter	Fact Sheet Reference	Type of Effluent Limit
BOD_5	Fact Sheet Part 3.3 Appendix A.1	TBEL (including minimum percentage removal) implemented at internal Outfall 001A
TSS		
pH	Fact Sheet Part 3.3 Appendix A.1, A.3.4.1	TBEL implemented at internal Outfall 001A. WQBEL equal to 18 AAC 70 WQS implemented at Outfall 001B
Dissolved Oxygen	Fact Sheet Part 3.3 Appendix A.3.4.3	WQBEL equal to 18 AAC 70 WQS implemented at Outfall 001B
Total Residual Chlorine	Fact Sheet Part 3.3 Appendix A.1.1, A.3.4.4	BPJ TBEL implemented at internal Outfall 001A. WQBEL equal to 18 AAC 70 WQS implemented at Outfall 001B
FC Bacteria	Fact Sheet Part 3.3 Appendix A.1.2, A.3.4.5	BPJ TBEL implemented at internal Outfall 001A. WQBEL equal to 18 AAC 70 WQS implemented at Outfall 001B
Enterococci Bacteria	Fact Sheet Part 3.3 Appendix A.3.4.6	WQBEL equal to 18 AAC 70 WQS implemented at Outfall 001B

A.6 Total Discharge Flow

Flow is based on the hydraulic design capacity of the wastewater treatment facility (flow rate as gallons or million gallons per day (mgd)) and is determined by a professional engineer and approved by DEC during the WWTF plan review process conducted per 18 AAC 72. A flow limit based on the design capacity ensures that the WWTF operated within its capabilities to receive and properly treat sustained average flow quantities and specific pollutants.

Per 18 AAC 83.520, permit effluent limits for a POTW are required to be calculated based on the design flow of the facility in mgd, and that the measure of production must be calculated over a time period corresponding to the permit limitations. The permit carries forward the monitoring frequency and effluent limit of 0.025 mgd; equal to the design flow of the facility.

The permit also carries forward monitoring of the total discharge flow at Outfall 001B. This data is required in accordance with mass-based limitations discussed in section A.3 of this appendix. Monitoring data for total discharge flow will also be used to monitor Connell Lake's influence on the dilution of effluent from internal Outfall 001A.