# Fact Sheet

The U.S. Environmental Protection Agency (EPA)

Proposes to Reissue a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:

**Quinault Indian Nation**

**Moclips River Estates Wastewater Treatment Plant**

Public Comment Start Date: January 8, 2026

Public Comment Expiration Date: February 6, 2026

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## The EPA Proposes to Reissue the NPDES Permit

The EPA proposes to reissue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant 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.

This Fact Sheet (FS) includes:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the permit
- a list of changes relative to the prior permit (see Part IV).

**CWA § 401 CERTIFICATION**

The EPA is requesting that the Quinault Indian Nation provide a CWA Certification of the permit for this facility under CWA § 401. Comments regarding the Quinault Indian Nation's intent to certify the permit should be directed to:

Kiley Smith
Quinault Division of Natural Resources
PO Box 189
Taholah, Washington 98587
Kiley.Smith@quinault.org

## CLEAN WATER ACT §401(A)(2) REVIEW

CWA Section 401(a)(2) requires that, upon receipt of an application and 401 certification, the EPA must notify a neighboring State or Tribe with TAS (neighboring jurisdiction) if the EPA determines that the discharge may affect the quality of the neighboring jurisdiction's waters. The Quinault Indian Nation is the certifying authority and is accepting comment regarding the intent to certify the permit. Once the EPA has received a final certification from the Quinault Indian Nation, the EPA will determine whether the discharge may affect a neighboring jurisdiction's waters (33 U.S.C. § 1341(a)(2)).

**PUBLIC COMMENT**

Persons wishing to comment on, or request a Public Hearing for, the draft permit may do so in writing by the expiration date of the Public Comment period. 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. All comments and requests for Public Hearings must be in writing and should be submitted to the EPA as described below.

By the expiration date of the public comment period, all written comments and requests must be submitted to EPAR10WD-NPDES@epa.gov with the subject line "Comments on Draft NPDES Permit WA0026603".

After the Public Notice expires, and all comments have been considered, the EPA will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, the EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR § 124.19.

### Documents are Available for Review

The draft NPDES permit, fact sheet and other information can be downloaded from the internet at https://www.epa.gov/npdes-permits/about-region-10s-npdes-permit-program.

The draft Administrative Record for this action contains any documents listed in the References section. The Administrative Record or documents from it are available electronically upon request by contacting Cody Piscitelli.

For technical questions regarding the Fact Sheet, contact Cody Piscitelli at (206) 553-1169 or piscitelli.cody@epa.gov.

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## ACRONYMS

| | |
|---|---|
| 1Q10 | 1 day, 10 year low flow |
| 7Q10 | 7 day, 10 year low flow |
| 30Q10 | 30 day, 10 year low flow |
| $BOD_5$ | Biochemical oxygen demand, five-day |
| $BOD_{5u}$ | Biochemical oxygen demand, ultimate |
| °C | Degrees Celsius |
| CFR | Code of Federal Regulations |
| CFS | Cubic Feet per Second |
| CSO | Combined Sewer Overflow |
| CV | Coefficient of Variation |
| CWA | Clean Water Act |
| DMR | Discharge Monitoring Report |
| DPS | Distinct Population Segment |
| DO | Dissolved oxygen |
| EFH | Essential Fish Habitat |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| FR | Federal Register |
| HUC | Hydrologic Unit Code |
| ICIS | Integrated Compliance Information System |
| lbs/day | Pounds per day |
| mg/L | Milligrams per liter |
| mL | Milliliters |
| ML | Minimum Level |
| mgd | Million gallons per day |
| MDL | Maximum Daily Limit or Method Detection Limit |
| N | Nitrogen |
| NOAA | National Oceanic and Atmospheric Administration |
| NPDES | National Pollutant Discharge Elimination System |
| O&M | Operations and maintenance |
| POTW | Publicly owned treatment works |
| QAP | Quality assurance plan |
| RP | Reasonable Potential |
| RPM | Reasonable Potential Multiplier |
| SIC | Standard Industrial Classification |
| SS | Suspended Solids |

| | |
|---|---|
| s.u. | Standard Units |
| TMDL | Total Maximum Daily Load |
| TSD | Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) |
| TSS | Total suspended solids |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | United States Geological Survey |
| UV | Ultraviolet |
| WD | Water Division |
| WQBEL | Water quality-based effluent limit |
| WQS | Water Quality Standards |
| WWTP | Wastewater treatment plant |

# I. Background Information

## A. GENERAL INFORMATION

This fact sheet provides information on the draft NPDES permit for the following entity:

**Table 1. General Facility Information**

| | |
|---|---|
| NPDES Permit #: | WA0026603 |
| Applicant: | The Quinault Indian Nation<br>Moclips River Estates Wastewater Treatment Plant (WWTP) |
| Type of Ownership | Tribally owned POTW |
| Physical Address: | The Quinault Indian Nation<br>Moclips River Estates WWTP<br>715 Quinaielt Drive<br>Taholah, Washington 98587 |
| Mailing Address: | P.O. Box 189<br>Taholah, Washington 98587 |
| Facility Contact: | Robert Edwards II<br>QIN Wastewater Treatment Supervisor<br>redwards@quinault.org<br>(360) 276-0074 |
| Facility Location: | 47.2544 °N 124.1848 °W |
| Receiving Water | Moclips River within the Quinault Indian Reservation boundary |
| Facility Outfall | 47.2461°N 124.1836 °W |

## B. PERMIT HISTORY

The most recent NPDES permit for the Moclips River Estates WWTP was issued on September 26, 2017, became effective on December 1, 2017, and expired on November 30, 2022. An NPDES application for permit issuance was submitted by the permittee on November 28, 2022. The EPA determined that the application was timely and complete. Therefore, pursuant to Title 40 Code of Federal Regulations (CFR) 122.6, the permit has been administratively continued and remains fully effective and enforceable.

## C. TRIBAL CONSULTATION

The EPA consults on a government-to-government basis with federally recognized Tribal governments when the EPA actions and decisions may affect Tribal interests. Meaningful Tribal consultation is an integral component of the federal government's general trust relationship with federally recognized Tribes. The federal government recognizes the right of each Tribe to self-government, with sovereign powers over their members and their territory. Executive Order 13175 (November 2000) entitled "Consultation and Coordination with Indian Tribal Governments" requires federal agencies to have an accountable process to assure meaningful and timely input by Tribal officials in the development of regulatory policies on matters that have Tribal implications and to strengthen the government-to-government relationship with Indian Tribes. In December 2023, the EPA issued the "EPA Policy on Consultation with Indian Tribes", which updated national guidelines and institutional controls for consultation.

On November 25, 2025, the EPA offered coordination with the Quinault Indian Nation through a 30-day pre-public notice Tribal review. On December 18, 2025, the Quinault Indian Nation concluded the review, with no comments on the draft permit package. On January 8, 2026, the EPA offered formal Tribal consultation with the Quinault Indian Nation and will continue to work with the Tribe throughout the permit development process.

# II. Facility Information

## A. TREATMENT PLANT DESCRIPTION

### 1. Service Area

The Quinault Indian Nation owns and operates the Moclips River Estates WWTP, a publicly owned treatment work (POTW), located in Taholah, Washington. The collection system has no combined sewers. The facility serves a resident population of 250. There are no major industries discharging to the facility.

### 2. Treatment Process

The design flow of the facility is 0.035 mgd. The reported actual flows from the facility range from 0.011 to 0.039 mgd (average monthly flow). The treatment process consists of a headworks, bioreactor compartments, clarifiers, clarifier skimming, microscreen filtration, and UV disinfection. A roof was installed over the facility in 2019 to regulate treatment system temperatures. The sludge is removed and transported via truck to the Aberdeen WWTP. A schematic of the wastewater treatment process and a map showing the location of the treatment facility and discharge are included in Appendix A**.** Because the design flow is less than 1 mgd, the facility is considered a minor facility.

## B. OUTFALL DESCRIPTION

The outfall consists of an open pipe with no diffuser that discharges to the surface of the Moclips River.

## C. EFFLUENT CHARACTERIZATION

To characterize the effluent, the EPA evaluated the facility's application form, discharge monitoring report (DMR) data, and additional data provided by the Moclips River Estates WWTP. The effluent quality is summarized in Table 2. Data are provided in Appendix B.

**Table 2. Effluent Characterization**

| Parameter | Minimum | Maximum | 95$^{th}$ Percentile | Notes |
|---|---|---|---|---|
| Flow (mgd) | 0.011 | 0.030 | 0.028 | Monthly Average |
| $BOD_5$ (mg/L) | 21.0 | 26.2 | 25.0 | Monthly Average |
| $BOD_5$ (lbs/day) | 0.00 | 6.16 | 5.17 | Monthly Average |
| $BOD_5$ % removal | 90.4 | 94.0 | 92.8 | Instantaneous Maximum |
| TSS (mg/L) | 19.0 | 25.4 | 21.0 | Monthly Average |
| TSS (lbs/day) | 1.85 | 4.93 | 4.12 | Monthly Average |
| TSS % removal | 92.2 | 94.0 | 92.9 | Instantaneous Maximum |
| Ammonia (as N) (mg/L) | 1.18 | 2.30 | 2.11 | Monthly Average |
| Fecal Coliform Bacteria (CFU/100ml) | 0.00 | 3.00 | 1.05 | Instantaneous Maximum |
| pH (standard units) | 6.51 | 7.54 | 7.44 | Instantaneous Maximum |
| Temperature (℃) | 11.7 | 25.4 | 19.9 | Daily Maximum |
| Source: DMR reporting data from March 2020 to March 2025. | | | | |

## D. COMPLIANCE HISTORY

Overall, the facility has had a good compliance record with no effluent limit violations in between March 2020 and March 2025.

Additional compliance information for this facility, including compliance with other environmental statutes, is available on Enforcement and Compliance History Online (ECHO). The ECHO web address for this facility is: https://echo.epa.gov/detailed-facility-report?fid=110010135923

The EPA conducted an inspection of the facility in 2021. The inspection encompassed the wastewater treatment process, records review, operation and maintenance, and the collection system. Overall, the results of the inspection found the facility to be in an overall good condition with a clean and organized laboratory. There were areas of concern related to the handling and submission of documents, such as failing to submit annual surface water monitoring reports, Operations & Maintenance (O&M) Plan, Quality Assurance Plan (QAP), Industrial Users report, Municipal Plan, Emergency Response Plan, and one Discharge Monitoring Report (DMR) from 2016. These were attributed to clerical oversights and no formal enforcement action was proposed.

# III. Receiving Water

In drafting permit conditions, the EPA must analyze the effect of the facility's discharge on the receiving water. The details of that analysis are provided in the Water Quality-Based Effluent Limits (WQBEL) section in Part IV.B.3. This section summarizes characteristics of the receiving water that impact that analysis.

This facility discharges to the Moclips River near the City of Moclips, Washington. The outfall is located upstream of the mouth of the Moclips River at the Pacific Ocean. The receiving water is freshwater and too far inland to be influenced by estuarine tidal activities.

## A. WATER QUALITY STANDARDS

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet Water Quality Standards (WQS). 40 CFR 122.4(d) requires that the conditions in NPDES permits ensure compliance with the WQS of all affected States. A State's WQS are composed of use classifications, numeric and/or narrative water quality criteria and an anti-degradation policy. The use classification system designates the beneficial uses that each water body is expected to achieve, such as drinking water supply, contact recreation, and aquatic life. The numeric and narrative water quality criteria are the criteria deemed necessary to support the beneficial use classification of each water body. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

The facility discharges to a segment of the Moclips River located within the Quinault Indian Reservation. On September 20, 2018, the Quinault Indian Nation was granted Treatment as a State (TAS) for Clean Water Act purposes; however, the Tribe does not currently have its own approved WQS. Until WQS have been promulgated by the Tribe and approved by the EPA, Washington State's WQS will be used as reference to protect downstream uses in Washington waters. The boundary of the reservation is approximately 90 meters downstream of the outfall.

### 1. Designated Beneficial Uses

This facility discharges to the Moclips River in the Moclips River Subbasin (HUC 171001020700) Water Resources Inventory Area #21. At the point of discharge, receiving water is protected for the following designated uses:

- core summer salmonid habitat;
- primary contact recreation; domestic industrial, and agricultural water supply;
- stock watering;
- wildlife habitat;
- commerce and navigation;
- boating and aesthetic values.

While shellfish harvesting is not a designated use at the point of the discharge, the outfall is located directly upstream of a waterbody that has a designated use of shellfish harvesting. In addition, shellfish harvesting occurs to the north and south of the mouth of the Moclips River. The Washington Department of Health prohibits commercial shellfish harvesting at the mouth of the Moclips River because of fecal coliform bacteria concerns (https://doh.wa.gov/sites/default/files/legacy/Documents/4400/pacific.pdf). See Figure 4 in Appendix A.

## B. RECEIVING WATER QUALITY

A. The water quality for the receiving water is summarized in Table 3. The ammonia, pH, and temperature data were collected by the permittee upstream of the outfall as part of the surface water monitoring report (SWMR) between March 2020 and March 2025. Flow data were collected by USGS gage station # 12039220 between November 1974 and September 1981.

**Table 3. Receiving Water Quality Data**

| Parameter | Units | $5^{th}$ Percentile | $95^{th}$ Percentile | Maximum |
|---|---|---|---|---|
| Temperature (July 1 – Sep 14) | °C | 11.5[1] | 15.5[1] | 15.7[1] |
| Temperature (Sep. 15 – June 30) | °C | 4.3[1] | 7.7[1] | 7.6[1] |
| pH | Standard units | 5.6[1] | 7.4[1] | 8.9[1] |
| Ammonia | mg/L | Below detection limit[1] | Below detection limit[1] | 0.01[1] |
| Fecal Coliform Bacteria | MPN/100 ml | Below detection limit[2] | 190.5[2] | 350.0[2] |
| Flow | mgd | 7.1[3] | 800[3] | 3500[3] |

Source:

1. Data collected by permittee 2020-2025.
2. Washington Department of Health Station WADOH-69-12 approximately 2 miles downstream from the outfall. Fecal coliform detection limit = 1.8 MPN/100 ml. https://apps.ecology.wa.gov/eim/search/Detail/Detail.aspx?DetailType=Location&SystemStationId=100097914&LocationUserIdSearchType=Equals&LocationUserId=WADOH_69_12
3. USGS Stream Gage #12039220. 1974-1981 https://waterdata.usgs.gov/monitoring-location/USGS-12039220/#dataTypeId=daily-00060-0&period=P1Y

### 1. Water Quality Limited Waters

The State of Washington's 2018 Water Quality Assessment (CWA § 303(d)) lists the area downstream of the outfall located offshore from the mouth of the Moclips River in marine waters, as impaired for fecal coliform bacteria. The location of the impairments, which are approximately two stream miles downstream, are shown in Figure 3 in Appendix A. A total maximum daily load (TMDL) for bacteria has not been developed at this time.

### 2. Low Flow Conditions

Critical low flows for the receiving water are summarized in. Low flows are defined in Appendix E.

**Table 4. Critical Flows in Receiving Water**

| Flows | Annual Flow (cfs) |
|---|---|
| 1Q10 | 5.1 |
| 7Q10 | 6.6 |
| 30Q5 | 7.5 |
| Harmonic Mean | 41.6 |
| Source: USGS Stream Gage #12039220. 1974-1981 https://waterdata.usgs.gov/monitoring-location/USGS-12039220/#dataTypeId=daily-00060-0&period=P1Y | |

## IV. Effluent Limitations and Monitoring

Table 5, below, presents the effluent limits and monitoring requirements proposed in the draft permit. The existing effluent limits and monitoring requirements in the current Permit are listed in Appendix D.

The draft permit includes several changes to the effluent limitations and monitoring requirements, which are as follows:

- The replacement of fecal coliform bacteria effluent limits and monitoring with *E. coli* bacteria effluent limits and monitoring.
- The addition of per- and polyfluoroalkyl substances (PFAS) effluent monitoring.
- The removal of the Floating, Suspended, or Submerged Matter effluent limit.
- Corrected five-day biochemical oxygen demand ($BOD_5$) and total suspended solids (TSS) loading effluent limits.

**Table 5. Draft Permit - Effluent Limits and Monitoring Requirements**

| Parameter | Units | Effluent Limitations | | | Monitoring Requirements | | |
|---|---|---|---|---|---|---|---|
| | | Average Monthly Limit | Average Weekly Limit | Max Daily Limit | Sample Location | Sample Frequency | Sample Type |
| Biochemical Oxygen Demand ($BOD_5$) | mg/l | 30 | 45 | -- | Influent and Effluent | 1/month | Grab |
| | lbs/day | 8.76 | 13.14 | -- | | | Calculation[1] |
| | % | 85% | -- | -- | | | Calculation[2] |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Removal | (minimum) | | | | | |
| Total Suspended Solids (TSS) | mg/l | 30 | 45 | -- | Influent and Effluent | 1/month | Grab |
| | lbs/day | 8.76 | 13.14 | -- | | | Calculation[1] |
| | % Removal | 85% (minimum) | -- | -- | | | Calculation[2] |
| *E. coli* Bacteria[3] | CFU/100 ml | 100 (geometric mean) | -- | 320 (instant. max.)[4] | Effluent | 1/week | Grab |
| pH | std units | 6.5 – 8.5 at all times | | | Effluent | 1/week | Grab |
| Total Ammonia (as N) | mg/l | 9.5 | -- | 29.5[5] | Effluent | 1/month | Grab |
| | lbs/day | 2.77 | -- | 8.61 | | | Calculation[1] |
| Report Parameters | | | | | | | |
| Flow | mgd | Report | -- | Report | Effluent | Continuous | Measurement |
| Temperature | ℃ | -- | Report | Report | Effluent | 1/week | Grab |
| Per-and Polyfluoroalkyl Substances (PFAS)[6] | ng/L | -- | -- | -- | Influent and Effluent | 1/quarter[6] | Grab |
| | mg/kg dry weight | -- | -- | -- | Sludge | 1/quarter[6] | Grab |
| Permit Application Effluent Testing Data[7] | -- | | | | Effluent | 1/year | -- |

Notes

1. Loading (in lbs/day) is calculated by multiplying the concentration (in mg/L) by the corresponding flow (in mgd) for the day of sampling and a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the *NPDES Self-Monitoring System User Guide* (EPA 833-B-85-100, March 1985).
2. Percent Removal. The monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month using the following equation: (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration x 100. Influent and effluent samples must be taken over approximately the same time period.
3. The Average Monthly Limit for Fecal Coliform Bacteria is based on the Geometric Mean in colonies/100ml. See Part VI for a definition of geometric mean. If any value used to calculate the geometric mean is less than 1, the permittee must round that value up to 1 for purposes of calculating the geometric mean. The Instantaneous Maximum Limit is 43 colonies/100 ml.
4. Reporting is required within 24 hours of a maximum daily limit violation. See permit Parts I.B.2 and III.G.
5. The Average Monthly Limit for *E. coli* bacteria is based on the Geometric Mean in colonies/100ml. See permit Part VI for a definition of geometric mean. If any value used to calculate the geometric mean is less than 1, the permittee must round that value up to 1 for purposes of calculating the geometric mean. The Instantaneous Maximum Limit is 200 colonies/100 ml.
6. Monitoring for PFAS chemicals is required for 2 years (8 quarters), beginning at the start of the first complete quarter in the third year of the permit term. Quarters are defined as January through March, April through June, July through September, and October through December.
7. Effluent Testing Data - See NPDES Permit Application Form 2A, Table B for the list of pollutants to be included in this testing. The Permittee must use sufficiently sensitive analytical methods in accordance with Permit Part I.B.7.

## B. BASIS FOR EFFLUENT LIMITS AND MONITORING REQUIREMENTS

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based effluent limits (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 applicable to a waterbody are being met and may be more stringent than TBELs.

CWA § 308 and 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality.

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. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR Part 136) or as specified in the permit.

1. **Pollutants of Concern**

Pollutants of concern are those that either have TBELs or may need WQBELs. The EPA identifies pollutants of concern for the discharge based on those which:

- Have a TBEL
- Have an assigned wasteload allocation (WLA) from a TMDL
- Had an effluent limit in the previous permit
- Are present in the effluent monitoring. Monitoring data are reported in the application and DMR and any special studies
- Are expected to be in the discharge based on the nature of the discharge

The wastewater treatment process for this facility includes both primary and secondary treatment, as well as disinfection with ultraviolet. Pollutants expected in the discharge from a facility with this type of treatment, include but are not limited to: $BOD_5$, TSS, *E. coli* bacteria, pH, ammonia, temperature, and dissolved oxygen (DO).

Based on this analysis, pollutants of concern are as follows:

- Ammonia
- $BOD_5$
- DO
- *E. coli* bacteria
- Fecal coliform bacteria
- PFAS
- pH
- Temperature
- TSS

2. **Technology-Based Effluent Limits (TBELs)**

**a. Federal Secondary Treatment Effluent Limits**

The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. CWA § 301 establishes a required performance level, referred to as “secondary treatment,” which POTWs were required to meet by July 1, 1977. The EPA has developed and promulgated “secondary treatment” effluent limitations, which are found in 40 CFR 133.102. These TBELs apply to POTWs and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of $BOD_5$, TSS, and pH. The federally promulgated secondary treatment effluent limits are listed in Table

6. For additional information and background refer to Part 5.1 *Technology Based Effluent Limits for POTWs* in the Permit Writers Manual.

**Table 6. Secondary Treatment Effluent Limits**

| Parameter | 30-day average | 7-day average |
|---|---|---|
| $BOD_5$ | 30 mg/L | 45 mg/L |
| TSS | 30 mg/L | 45 mg/L |
| Removal for $BOD_5$ and TSS (concentration) | 85% (minimum) | -- |
| pH | within the limits of 6.0 - 9.0 s.u. | |
| Source: 40 CFR 133.102 | | |

**b. Mass-Based Limits**

40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, except under certain conditions. 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limit = concentration limit (mg/L) × design flow (mgd) × 8.34[1]

Since the design flow for this facility is 0.035 mgd, the technology-based mass limits for $BOD_5$ and TSS are calculated as follows:

Average Monthly Limit = 30 mg/L × 0.035 mgd × 8.34 = 8.757 lbs/day

Average Weekly Limit = 45 mg/L × 0.035 mgd × 8.34 = 13.135 lbs/day

**3. Water Quality-Based Effluent Limits (WQBELs)**

**a. Statutory and Regulatory Basis**

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet WQS. Discharges to State or Tribal waters must also comply with conditions imposed by the State or Tribe as part of its certification of NPDES permits under CWA § 401. 40 CFR 122.44(d)(1) implementing CWA § 301(b)(1)(C) requires that permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State or Tribal WQS, including narrative criteria for water quality. Effluent limits must also meet the applicable water quality requirements of affected States other than the State in which the discharge originates, which may include downstream States (40 CFR 122.4(d), 122.44(d)(4), see also CWA § 401(a)(2)).

[1] 8.34 is a conversion factor with units (lb ×L)/(mg × gallon×$10^6$)

The regulations require the permitting authority to make this evaluation using procedures which 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 water. The limits must be stringent enough to ensure that WQS are met and must be consistent with any available wasteload allocation for the discharge in an approved TMDL. If there are no approved TMDLs that specify wasteload allocations for this discharge; all of the WQBELs are calculated directly from the applicable WQS.

In the current permit, there was a narrative WQBEL stating that the permittee must not discharge any floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses. This was included in error and was based on the Idaho permit and fact sheet template. Therefore, this narrative WQBEL has been removed from the permit.

**b. Reasonable Potential Analysis and Need for WQBELs**

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (*TSD*) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, the EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential and a WQBEL must be included in the permit.

In some cases, a dilution allowance or mixing zone is permitted. A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and within which certain water quality criteria may be exceeded (EPA, 2014). While the criteria may be exceeded within the mixing zone, the use and size of the mixing zone must be limited such that the waterbody as a whole will not be impaired, all designated uses are maintained and acutely toxic conditions are prevented.

The Washington WQS at WAC 173-201A-400 provide Washington's mixing zone policy for point source discharges. The EPA proposes to authorize the mixing zones summarized in

Table 7. These are the standard mixing zones for freshwater discharges. The EPA also calculated dilution factors for year-round and seasonal critical low flow

conditions. All dilution factors are calculated with the effluent flow rate set equal to the design flow of 0.035 mgd.

**Table 7. Mixing zones**

| Criteria Type | Critical Low Flow (cfs) | Mixing Zone (% of Critical Low Flow) | Dilution Factor |
|---|---|---|---|
| Acute Aquatic Life | 5.1 | 2.5% | 3.4 |
| Chronic Aquatic Life (except ammonia) | 6.6 | 25% | 31.44 |
| Chronic Aquatic Life (ammonia) | 6.6 | 25% | 31.44 |
| Human Health Noncarcinogen | 7.3 | 25% | 34.67 |
| Human Health Carcinogen | 41.6 | 25% | 192.88 |

The reasonable potential analysis and WQBEL calculations were based on mixing zones shown in

Table 7.

As discussed in Part IV.B.1, the pollutants of concern in the discharge are ammonia, $BOD_5$, *E. coli* bacteria, fecal coliform bacteria, PFAS, pH, temperature, and TSS. The relevant water quality standards are shown in Table 8. The RPA results, WQBELs, and related monitoring requirements for specific parameters are summarized below. The equations used to conduct the reasonable potential analysis and calculate the WQBELs are provided in Appendix E.

**Table 8. Applicable Water Quality Standards**

| Pollutant | Designated Use | Criteria |
|---|---|---|
| *E. coli* | Primary Contact Recreation in Freshwater | E. coli organism levels within an averaging period must not exceed a geometric mean value of 100 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than 10 sample points exist) obtained within the averaging period exceeding 320 CFU or MPN per 100 mL. |
| Fecal Coliform | Shellfish Harvesting in Marine Waters | Fecal coliform organism levels are used to protect shellfish harvesting. Criteria are expressed as colony forming units (CFU) or most probable number (MPN). Fecal coliform must not exceed a geometric mean value of 14 CFU or MPN per 100 mL, and not have more than 10 percent of all samples (or any single sample when less than 10 sample points exist) obtained for calculating the geometric mean value exceeding 43 CFU or MPN per 100 mL. |
| Temperature | Core Summer Salmonid Habitat | 16°C (60.8°F)<br>7-DADMax |
| pH | Core Summer Salmonid Habitat | pH shall be within the range of 6.5 to 8.5 with a human-caused variation within the above range of less than 0.2 units. |

i. *Ammonia*

Ammonia criteria are based on a formula which relies on the pH and temperature of the receiving water, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature. Therefore, the criteria become more stringent as pH and temperature increase. Figure 1, below, details the parameters used to determine water quality criteria for ammonia.

**Figure 1. Ammonia Criteria**

**Freshwater Un-ionized Ammonia Criteria Calculation**
Based on Chapter 173-201A WAC, amended November 20, 2006

| | |
|---|---|
| | |
| **INPUT** | |
| 1. Receiving Water Temperature (deg C): | 15.3 |
| 2. Receiving Water pH: | 7.1 |
| 3. Is salmonid habitat an existing or designated use? | Yes |
| 4. Are non-salmonid early life stages present or absent? | Present |
| **OUTPUT** | |
| Using mixed temp and pH at mixing zone boundaries? | |
| Ratio | 26.915 |
| FT | 1.400 |
| FPH | 2.396 |
| pKa | 9.554 |
| Unionized Fraction | 0.004 |
| Unionized ammonia NH3 criteria (mg/L as $NH_3$) | |
| Acute: | 0.093 |
| Chronic: | 0.009 |
| **RESULTS** | |
| **Total ammonia nitrogen criteria (mg/L as N):** | |
| Acute: | 21.945 |
| Chronic: | 2.081 |

A reasonable potential calculation showed that the Moclips River Estates WWTP discharge would not have the reasonable potential to cause or contribute to an excursion of the water quality criteria for ammonia. However, the facility already has effluent limits for ammonia in the current permit. Therefore, the draft permit contains the same ammonia WQBELs to comply with anti-backsliding requirements. The draft permit requires that the permittee monitor the receiving water for ammonia, pH and temperature in order to determine the applicable ammonia criteria for the next permit reissuance. See Appendix E for reasonable potential calculations for ammonia.

*ii. pH*

According to Washington State WQS at WAC 173-201A-200, Table 200(1)(g): for Core Summer Salmonid Habitat, Aquatic Life pH Criteria in Fresh Water, requires that pH values of the river to be within the range of 6.5 to 8.5, with a human-caused variation within the above range of less than 0.2 units. Comparatively, the 5$^{th}$ percentile of instantaneous minimum effluent pH data between 2020 and 2025 was 6.53, while the 95$^{th}$ percentile of instantaneous maximum effluent pH data was 7.44 during the same period. The single minimum value was 6.51 with the maximum being 7.54, meaning the facility has been in range with the WQS throughout the entire five-year monitoring period.

Mixing zones are generally not granted for pH, therefore the most stringent water quality criterion must be met before the effluent is discharged to the receiving water. The proposed permit requires that the effluent have a pH of no less than 6.5 and no greater than 8.5 standard units. Effluent data indicate that the Moclips River Estates WWTP can meet these effluent limits.

*iii. $BOD_5$*

Natural decomposition of organic material in wastewater effluent impacts dissolved oxygen in the receiving water at distances far outside of the regulated mixing zone. The $BOD_5$ of an effluent sample indicates the amount of biodegradable material in the wastewater and estimates the magnitude of oxygen consumption the wastewater will generate in the receiving water.

Discharges from the Moclips River Estates WWTP are not expected to have an appreciable effect on the dissolved oxygen concentrations in the Moclips River. The $BOD_5$ TBELs ensure that the discharge does not contribute to an excursion of the DO criteria in the receiving water.

*iv. Fecal Coliform and E. coli Bacteria*

The Washington WQS at WAC 173-201A-200(2)(b) state that for waters that are designated for primary contact recreation, *E. coli* organism levels within an averaging period must not exceed a geometric mean value of 100 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained within the averaging period exceeding 320 CFU or MPN per 100 mL. For this reason, *E. coli* effluent limits are proposed, which include an average monthly limit of a geometric mean of 320 CFU or MPN per 100 mL and a maximum daily limit of 100 CFU or MPN per 100 mL, as well as weekly effluent monitoring. A mixing zone is not appropriate for bacteria for waters designated for contact recreation.

The Washington WQS at WAC 173-201A-200(2)(b) replaced fecal coliform with *E. coli* as the applicable criteria for primary contact recreation as of

December 31, 2020. As such, *E. coli* limits and monitoring are proposed in the permit, while fecal coliform limits have been removed. See Part IV.B.3.c for antibacksliding considerations.

*v. Temperature*

The applicable WQS in WAC 173-201A-200(1)(c) for the portion of the Moclips River and the applicable uses, described in *Table 8*, lists a maximum temperature criterion of 16.0℃.

From 2020 to 2025, the daily maximum core summer (July 1 – September 14) effluent temperatures had a 95$^{th}$ percentile of 20.4℃ and a mean of 19.3℃, while the receiving water had a 90th percentile of 15.1℃ and a mean of 13.8℃. During this 5-year core summer period, the temperature calculated at the edge of the chronic mixing zone was 15.5℃. Reasonable potential analyses were performed for both the core summer months, as well as on an annual basis, and it was determined that there is no reasonable potential to cause or contribute to an excursion of the temperature water quality criteria. For this reason, no temperature effluent limits are proposed. The EPA proposes to retain the existing permit's temperature monitoring requirements in both the effluent and receiving water.

### c. Antibacksliding

CWA § 402(o) and 40 CFR §122.44 (l) generally prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions or standards that are less stringent than those established in the previous permit (i.e., anti-backsliding) but provides limited exceptions. For explanation of the antibacksliding exceptions refer to Chapter 7 of the Permit Writers Manual *Final Effluent Limitations and Anti-backsliding*.

The EPA is replacing the fecal coliform limit with an *E.coli* limit because, as previously explained, the State of Washington has replaced the fecal coliform WQS with the *E.coli* WQS. Since the change from fecal coliform to *E.coli* does not make the permit less stringent, there is no backsliding. In addition, the other effluent limitations proposed in the draft permit are as or more stringent than the current permit, so there is no backsliding.

## 4. Additional Effluent Monitoring

### a. PFAS

Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Discharges of PFAS above certain levels may cause adverse effects to human health or aquatic life (EPA 2019; EPA 2022).

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the draft permit requires that the permittee conduct quarterly influent, effluent, and sludge sampling for PFAS chemicals for two years. The monitoring requirements for PFAS chemicals are deferred until the third and fourth years of the permit term (beginning during the first complete quarter[2] of the third year). This will give the permittee time to plan for this new monitoring requirement (e.g., to obtain funding, train employees, and find a suitable contract laboratory).

The purpose of these monitoring and reporting requirements is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits. The EPA is authorized to require this monitoring and reporting by CWA section 308(a). The permit conditions reflect the EPA's commitments in the PFAS Strategic Roadmap, which directs the Office of Water to leverage NPDES permits to reduce PFAS discharges to waterways "at the source and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources."

The EPA notes that there is currently not an analytical method approved in 40 CFR Part 136 for PFAS. As stated in 40 CFR 122.44(i)(1)(iv)(B), in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters. Therefore, the Permit specifies that until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633A.

**b. Monitoring Requirements for Renewal**

The permit also requires the permittee to perform effluent monitoring required by the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permit also requires the permittee to perform effluent monitoring required by Tables B, C, D, and E of the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit. See also Appendix J to 40 CFR Part 122.

POTW applicants with a design flow of at least 1 mgd or that have or must develop a pretreatment program must sample and analyze for any pollutants with applicable WQS, in addition to the pollutants listed in Table B and Table C of NPDES Application Form 2A (40 CFR 122.21(j)(4)(iv)). Table 2 of the draft permit lists the pollutants with applicable numeric water quality criteria that are not

2 Quarters are defined as: January 1 to March 31; April 1 to June 30; July 1 to September 30; and October 1 to December 31.

listed in Table B or C of Form 2A. The permittee must sample and analyze for the pollutants listed in Table 2 of the draft permit and report the results in Table D of Form 2A.

The permittee is responsible for conducting the monitoring and for reporting results on DMRs or on the application for renewal, as appropriate, to EPA.

### C. SURFACE WATER MONITORING

In general, surface water monitoring may be required for pollutants of concern to assess the assimilative capacity of the receiving water for the pollutant. In addition, surface water monitoring may be required for pollutants for which the water quality criteria are dependent and to collect data for TMDL development if the facility discharges to an impaired water body. Table 9 presents the proposed surface water monitoring requirements for the draft permit. Surface water monitoring results must be submitted with the DMR.

**Table 9. Surface Water Monitoring in Draft Permit**

| Parameter | Units | Monitoring Frequency | Sample Type |
|---|---|---|---|
| Total Ammonia (as N) | mg/L | Quarterly[1] | Grab |
| Temperature | °C | Quarterly[1] | Grab |
| pH | S.U. | Quarterly[1] | Grab |
| Flow | MGD | Quarterly[1] | Grab |
| 1. For quarterly monitoring frequency, quarters are defined as: January 1 to March 31; April 1 to June 30; July 1 to September 30; and October 1 to December 31. | | | |

### D. ELECTRONIC SUBMISSION OF DISCHARGE MONITORING REPORTS

The draft permit requires that the permittee submit DMR data electronically using NetDMR. NetDMR is a national web-based tool that allows DMR data to be submitted electronically via a secure Internet application.

The EPA currently conducts free training on the use of NetDMR. Further information about NetDMR, including upcoming trainings and contacts, is provided on the following website: https://netdmr.epa.gov. The permittee may use NetDMR after requesting and receiving permission from the EPA Region 10.

### E. SLUDGE (BIOSOLIDS) REQUIREMENTS

The EPA Region 10 separates wastewater and sludge permitting. The EPA has authority under the CWA to issue separate sludge-only permits for the purposes of regulating biosolids. The EPA may issue a sludge-only permit to each facility at a later date, as appropriate.

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility continue to be subject to the national sewage sludge standards at 40 CFR

Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a permit has been issued.

# V. Other Permit Conditions

## A. QUALITY ASSURANCE PLAN

The Moclips River Estates WWTP is required to update the Quality Assurance Plan (QAP) within 180 days of the effective date of the permit. The QAP must consist of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan must be retained on site and made available to the EPA upon request.

## B. OPERATION AND MAINTENANCE PLAN

The permit requires the Moclips River Estates WWTP to properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance is essential to meeting discharge limits, monitoring requirements, and all other permit requirements at all times. The permittee is required to develop and implement an operation and maintenance plan for their facility within 180 of the effective date of the permit. The plan must be retained on site and made available to the EPA upon request.

## C. SHELLFISH PROTECTION REPORTING

The current permit required the facility to include within the Emergency Response and Public Notification Plan a plan for immediately notifying various public health agencies to ensure shellfish protection. Since effluent bacteria data are below the background values in the receiving water and since shellfish harvesting is banned near the mouth of the Moclips River, this provision has been removed from the permit. As discussed below, the permittee is still required to have an Emergency Response and Public Notification Plan in the case of overflows and bypasses.

## D. SANITARY SEWER OVERFLOWS AND PROPER OPERATION AND MAINTENANCE OF THE COLLECTION SYSTEM

SSOs are not authorized under this permit. The permit contains language to address SSO reporting and public notice and operation and maintenance of the collection system. The permit requires that the permittee identify SSO occurrences and their causes. In addition, the permit establishes reporting, record keeping and third-party notification of SSOs. Finally, the permit requires proper operation and maintenance of the collection system.

The following specific permit conditions apply:

**Immediate Reporting** – The permittee is required to notify the EPA of an SSO within 24 hours of the time the permittee becomes aware of the overflow. (See 40 CFR 122.41(l)(6))

**Written Reports** – The permittee is required to provide the EPA a written report within five days of the time it became aware of any overflow that is subject to the immediate reporting provision. (See 40 CFR 122.41(l)(6)(i)).

**Third Party Notice** – The permit requires that the permittee establish a process to notify specified third parties of SSOs that may endanger health due to a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure. The permittee is required to develop, in consultation with appropriate authorities at the local, county, tribal and/or state level, a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, as well as other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported and to whom, and the specific information that would be reported. The plan should include a description of lines of communication and the identities of responsible officials. (See 40 CFR 122.41(l)(6)).

**Record Keeping** – The permittee is required to keep records of SSOs. The permittee must retain the reports submitted to the EPA and other appropriate reports that could include work orders associated with investigation of system problems related to a SSO, that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the SSO. (See 40 CFR 122.41(j)).

**Proper Operation and Maintenance** – The permit requires proper operation and maintenance of the collection system. (See 40 CFR 122.41(d) and (e)). SSOs may be indicative of improper operation and maintenance of the collection system. The permittee may consider the development and implementation of a capacity, management, operation and maintenance (CMOM) program.

The permittee may refer to the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (EPA 305-B-05-002). This guide identifies some of the criteria used by EPA inspectors to evaluate a collection system's management, operation and maintenance program activities. Owners/operators can review their own systems against the checklist (Chapter 3) to reduce the occurrence of sewer overflows and improve or maintain compliance.

## E. DESIGN CRITERIA

The permit includes design criteria requirements. This provision requires the permittee to compare influent flow to the facility's design flow and prepare a facility plan for maintaining compliance with NPDES permit effluent limits when the flow exceeds 85% of the design criteria values for any two months in a twelve-month period.

## F. PRETREATMENT REQUIREMENTS

The Moclips River Estates WWTP does not have an approved POTW pretreatment program per 40 CFR 403.8 andthe EPA is the Control Authority for industrial users that might introduce pollutants into the Moclips River Estates WWTP.

Permit Part II.G reminds the Permittee that it cannot authorize discharges which may violate the national specific prohibitions of the General Pretreatment Program.

Although, not a permit requirement, the Permittee may wish to consider developing the legal authority enforceable in Federal, State or local courts which authorizes or enables the POTW to apply and to enforce the requirement of CWA §§ 307 (b) and (c) and 402(b)(8), as described in 40 CFR 403.8(f)(1). Where the POTW is a municipality, legal authority is typically through a sewer use ordinance, which is usually part of the city or county code. The EPA has a Model Pretreatment Ordinance for use by municipalities operating POTWs that are required to develop pretreatment programs to regulate industrial discharges to their systems (EPA, 2007). The model ordinance should also be useful for communities with POTWs that are not required to implement a pretreatment program in drafting local ordinances to control nondomestic dischargers within their jurisdictions.

### G. STANDARD PERMIT PROVISIONS

Permit parts III., IV. and V. contain standard regulatory language that must be included in all NPDES permits. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

## VI. OTHER LEGAL REQUIREMENTS

### A. ENDANGERED SPECIES ACT

The Endangered Species Act requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species. The following ESA-listed species and designated critical habitat may be present in vicinity of the discharge: bull trout (and critical habitat), dolly varden, marbled murrelet, yellow-billed cuckoo, and Hawaiian petrel. EPA evaluated the potential for the facility discharges to impact listed species and designated critical habitat and determined that there will be no effect See Appendix F for the full effect determinations.

### B. ESSENTIAL FISH HABITAT

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH). The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

A review of the NOAA EFH mapper tool found that the action area contains critical habitat for coho and chinook salmon. The EPA has prepared an EFH assessment which appears in Appendix F.

The EPA has determined that issuance of this permit will not affect EFH in the vicinity of the discharge. The EPA has prepared an EFH assessment which appears in Appendix G.

### C. CWA § 401 CERTIFICATION

CWA § 401 requires a Certification that any permit requirements comply with the appropriate sections of the CWA, as well as any appropriate requirements of Tribal Law. See 33 USC § 1341(d). Since this facility discharges to Tribal waters and the Tribe has been approved for TAS under the CWA, the Quinault Indian Nation is the certifying authority.

### D. ANTIDEGRADATION

The EPA has completed an antidegradation review (see Appendix H.) and finds that it is consistent with State WQS and the State's antidegradation implementation procedures.

### E. PERMIT EXPIRATION

The permit will expire five years from the effective date.

## VII. REFERENCES

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## Appendix A. Facility Information

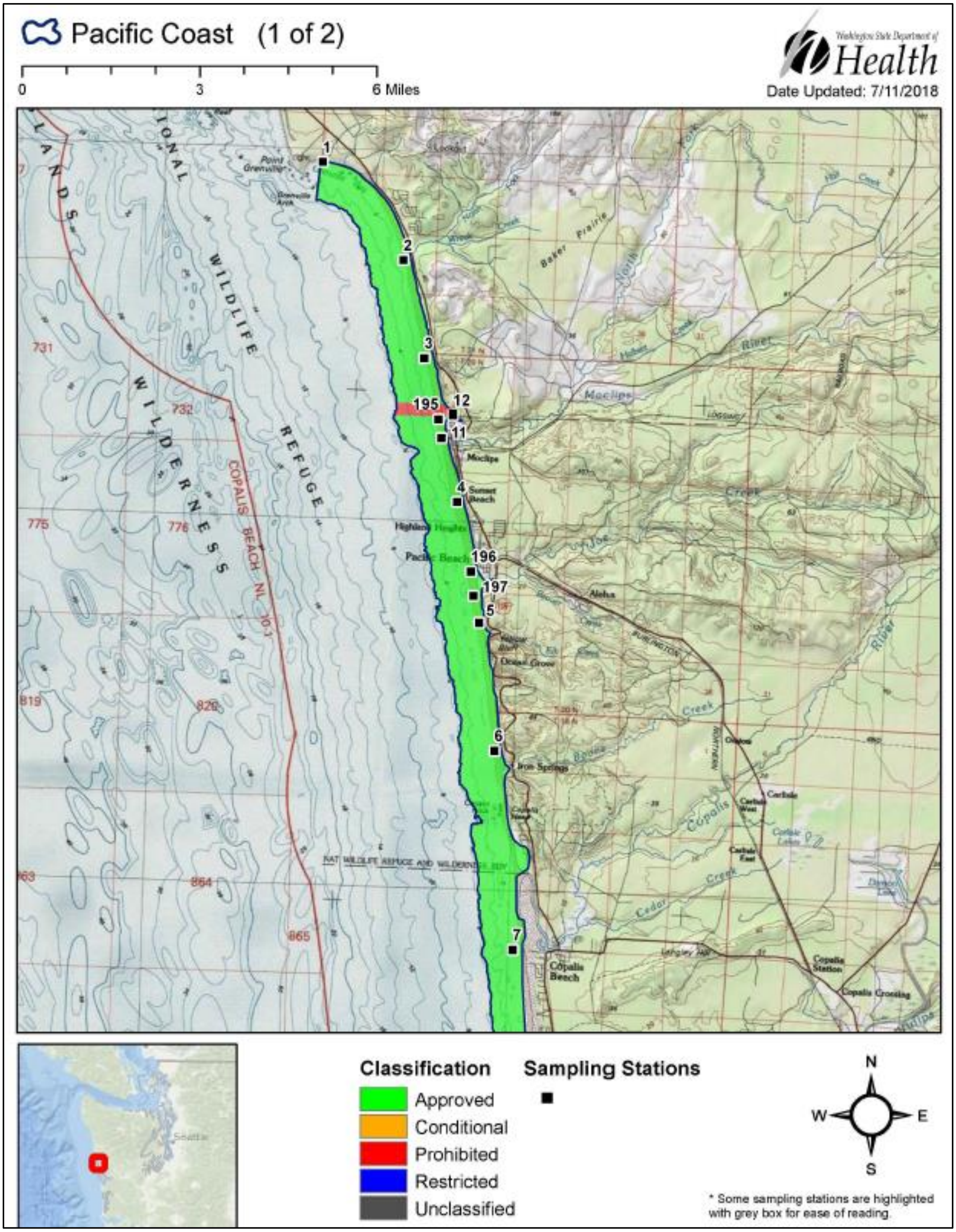
Figure 2, below, shows the approximate locations of the WWTP and its outfall in relation to the Moclips River and the convergence with the Pacific Ocean.

**Figure 2. The Facility and Outfall Location**

Moclips River Estates WWTP Outfall Location


Figure 3. The downstream fecal coliform bacteria impairments (red)

**Figure 4. The Washington Department of Health's shellfish harvesting regions.**



# Appendix B. Water Quality Data

## Treatment Plant Effluent Data

### Table 10. $BOD_5$ Effluent Data

| Parameter Desc | BOD, 7 day in mg/L | | BOD, 7day in lbs/day | | BOD, 30day in mg/L | | BOD, 30day in lbs/day | | BOD, % Removal | | Monitoring Period End Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | DMR | Limit | DMR | Limit | DMR | Limit | DMR | Limit | DMR | Limit | |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 3.93 | 13.13 | 25.2 | 30. | 3.93 | 8.75 | 91. | 85. | 03/31/2020 |
| BOD, 5-day, 20 deg. C | 25.7 | 45. | 4.64 | 13.13 | 25.7 | 30. | 4.64 | 8.75 | 93. | 85. | 03/31/2020 |
| BOD, 5-day, 20 deg. C | 25.3 | 45. | 3.85 | 13.13 | 25.3 | 30. | 3.85 | 8.75 | 90.8 | 85. | 04/30/2020 |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 2.92 | 13.13 | 25.2 | 30. | 2.92 | 8.75 | 92.4 | 85. | 04/30/2020 |
| BOD, 5-day, 20 deg. C | 25.3 | 45. | 5.94 | 13.13 | 25.3 | 30. | 5.94 | 8.75 | 91. | 85. | 05/31/2020 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 4.3 | 13.13 | 25.5 | 30. | 4.3 | 8.75 | 93.3 | 85. | 05/31/2020 |
| BOD, 5-day, 20 deg. C | 25.1 | 45. | 4.14 | 13.13 | 25.1 | 30. | 4.14 | 8.75 | 91. | 85. | 06/30/2020 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 4.96 | 13.13 | 25.4 | 30. | 4.96 | 8.75 | 92.5 | 85. | 06/30/2020 |
| BOD, 5-day, 20 deg. C | 24.8 | 45. | 4.7 | 13.13 | 24.8 | 30. | 4.7 | 8.75 | 91. | 85. | 07/31/2020 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 3.3 | 13.13 | 25.4 | 30. | 3.3 | 8.75 | 92.5 | 85. | 07/31/2020 |
| BOD, 5-day, 20 deg. C | 26.2 | 45. | 4.74 | 13.13 | 26.2 | 30. | 4.74 | 8.75 | 91. | 85. | 08/31/2020 |
| BOD, 5-day, 20 deg. C | 25.6 | 45. | 3.68 | 13.13 | 25.6 | 30. | 3.68 | 8.75 | 92.5 | 85. | 08/31/2020 |
| BOD, 5-day, 20 deg. C | 25.8 | 45. | 3.07 | 13.13 | 25.8 | 30. | 3.07 | 8.75 | 91. | 85. | 09/30/2020 |
| BOD, 5-day, 20 deg. C | 25. | 45. | 3.31 | 13.13 | 25. | 30. | 3.31 | 8.75 | 92.6 | 85. | 09/30/2020 |
| BOD, 5-day, 20 deg. C | 25.1 | 45. | 3. | 13.13 | 25.1 | 30. | 3. | 8.75 | 91. | 85. | 10/31/2020 |
| BOD, 5-day, 20 deg. C | 21. | 45. | 3. | 13.13 | 21. | 30. | 3. | 8.75 | 92.4 | 85. | 10/31/2020 |
| BOD, 5-day, 20 deg. C | 25.3 | 45. | 6.16 | 13.13 | 25.3 | 30. | 6.16 | 8.75 | 91.1 | 85. | 11/30/2020 |
| BOD, 5-day, 20 deg. C | 25.3 | 45. | 5.17 | 13.13 | 25.3 | 30. | 5.17 | 8.75 | 92.4 | 85. | 11/30/2020 |
| BOD, 5-day, 20 deg. C | 25. | 45. | 3.99 | 13.13 | 25. | 30. | 3.99 | 8.75 | 91. | 85. | 12/31/2020 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 4.38 | 13.13 | 25.4 | 30. | 4.38 | 8.75 | 92.4 | 85. | 12/31/2020 |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 4.35 | 13.13 | 25.2 | 30. | 4.35 | 8.75 | 90.4 | 85. | 01/31/2021 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 4.3 | 13.13 | 25.4 | 30. | 4.3 | 8.75 | 94. | 85. | 01/31/2021 |
| BOD, 5-day, 20 deg. C | 25.1 | 45. | 4.66 | 13.13 | 25.1 | 30. | 4.66 | 8.75 | 90.7 | 85. | 02/28/2021 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 4.28 | 13.13 | 25.4 | 30. | 4.28 | 8.75 | 92.9 | 85. | 02/28/2021 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 4.42 | 13.13 | 25.4 | 30. | 4.42 | 8.75 | 90.6 | 85. | 03/31/2021 |
| BOD, 5-day, 20 deg. C | 25.3 | 45. | 4.17 | 13.13 | 25.3 | 30. | 4.17 | 8.75 | 92.6 | 85. | 03/31/2021 |
| BOD, 5-day, 20 deg. C | 25.3 | 45. | 4.27 | 13.13 | 25.3 | 30. | 4.27 | 8.75 | 91.1 | 85. | 04/30/2021 |
| BOD, 5-day, 20 deg. C | 25.3 | 45. | 4.09 | 13.13 | 25.3 | 30. | 4.09 | 8.75 | 92.4 | 85. | 04/30/2021 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 4.1 | 13.13 | 25.5 | 30. | 4.1 | 8.75 | 91.1 | 85. | 05/31/2021 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 3.09 | 13.13 | 25.4 | 30. | 3.09 | 8.75 | 92.6 | 85. | 05/31/2021 |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 2.22 | 13.13 | 25.2 | 30. | 2.22 | 8.75 | 90.9 | 85. | 06/30/2021 |
| BOD, 5-day, 20 deg. C | 26.2 | 45. | 3.56 | 13.13 | 26.2 | 30. | 3.56 | 8.75 | 92.6 | 85. | 06/30/2021 |
| BOD, 5-day, 20 deg. C | 25.7 | 45. | 3.81 | 13.13 | 25.7 | 30. | 3.81 | 8.75 | 90.9 | 85. | 07/31/2021 |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 3.03 | 13.13 | 25.2 | 30. | .004 | 8.75 | 92.9 | 85. | 07/31/2021 |
| BOD, 5-day, 20 deg. C | 25.6 | 45. | 4.13 | 13.13 | 25.6 | 30. | 4.13 | 8.75 | 90.9 | 85. | 08/31/2021 |
| BOD, 5-day, 20 deg. C | 25.9 | 45. | 3.29 | 13.13 | 25.9 | 30. | 3.29 | 8.75 | 92.8 | 85. | 08/31/2021 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 3.36 | 13.13 | 25.4 | 30. | 3.36 | 8.75 | 91.1 | 85. | 09/30/2021 |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 3.41 | 13.13 | 25.2 | 30. | 3.41 | 8.75 | 92.6 | 85. | 09/30/2021 |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 3.22 | 13.13 | 25.2 | 30. | 3.22 | 8.75 | 90.9 | 85. | 10/31/2021 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 2.8 | 13.13 | 25.5 | 30. | 2.8 | 8.75 | 92.6 | 85. | 10/31/2021 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 5.23 | 13.13 | 25.5 | 30. | 5.23 | 8.75 | 91. | 85. | 11/30/2021 |
| BOD, 5-day, 20 deg. C | 25. | 45. | 3.17 | 13.13 | 25. | 30. | 3.17 | 8.75 | 92.5 | 85. | 11/30/2021 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BOD, 5-day, 20 deg. C | 25.1 | 45. | 3.06 | 13.13 | 25.1 | 30. | 3.06 | 8.75 | 91. | 85. | 12/31/2021 |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 3.05 | 13.13 | 25.2 | 30. | 3.05 | 8.75 | 92.8 | 85. | 12/31/2021 |
| BOD, 5-day, 20 deg. C | 25.3 | 45. | .004 | 13.13 | 25.3 | 30. | .004 | 8.75 | 91.1 | 85. | 01/31/2022 |
| BOD, 5-day, 20 deg. C | 25.6 | 45. | 3.4 | 13.13 | 25.6 | 30. | 3.4 | 8.75 | 92.2 | 85. | 01/31/2022 |
| BOD, 5-day, 20 deg. C | 25.7 | 45. | 2.83 | 13.13 | 25.7 | 30. | 2.83 | 8.75 | 91. | 85. | 02/28/2022 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 2.84 | 13.13 | 25.5 | 30. | 2.84 | 8.75 | 92.6 | 85. | 02/28/2022 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 3.13 | 13.13 | 25.5 | 30. | 3.13 | 8.75 | 91. | 85. | 03/31/2022 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 2.97 | 13.13 | 25.5 | 30. | 2.97 | 8.75 | 92.8 | 85. | 03/31/2022 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 2.98 | 13.13 | 25.5 | 30. | 2.98 | 8.75 | 90.9 | 85. | 04/30/2022 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 3.17 | 13.13 | 25.5 | 30. | 3.17 | 8.75 | 92.6 | 85. | 04/30/2022 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 2.93 | 13.13 | 25.5 | 30. | 2.93 | 8.75 | 90.8 | 85. | 05/31/2022 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 2.72 | 13.13 | 25.4 | 30. | 2.72 | 8.75 | 92.6 | 85. | 05/31/2022 |
| BOD, 5-day, 20 deg. C | 25.2 | 45. | 2.96 | 13.13 | 25.2 | 30. | 2.96 | 8.75 | 91. | 85. | 06/30/2022 |
| BOD, 5-day, 20 deg. C | 25.4 | 45. | 2.86 | 13.13 | 25.4 | 30. | 2.86 | 8.75 | 92.8 | 85. | 06/30/2022 |
| BOD, 5-day, 20 deg. C | 25.7 | 45. | .005 | 13.13 | 25.7 | 30. | .005 | 8.75 | 90.8 | 85. | 07/31/2022 |
| BOD, 5-day, 20 deg. C | 25.5 | 45. | 2.84 | 13.13 | 25.5 | 30. | 2.84 | 8.75 | 92.7 | 85. | 07/31/2022 |
| BOD, 5-day, 20 deg. C | 25.7 | 45. | 2.95 | 13.13 | 25.7 | 30. | 2.95 | 8.75 | 90.9 | 85. | 08/31/2022 |
| BOD, 5-day, 20 deg. C | 25.6 | 45. | 2.58 | 13.13 | 25.65 | 30. | 2.58 | 8.75 | 92.8 | 85. | 08/31/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 91. | 85. | 09/30/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.4 | 85. | 09/30/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.8 | 85. | 10/31/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.5 | 85. | 10/31/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.9 | 85. | 11/30/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.9 | 85. | 11/30/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.9 | 85. | 12/31/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.6 | 85. | 12/31/2022 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.8 | 85. | 01/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.4 | 85. | 01/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.8 | 85. | 02/28/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.7 | 85. | 02/28/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.6 | 85. | 03/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.7 | 85. | 03/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 91. | 85. | 04/30/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.7 | 85. | 04/30/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.9 | 85. | 05/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.5 | 85. | 05/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.9 | 85. | 06/30/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.5 | 85. | 06/30/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.9 | 85. | 07/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.5 | 85. | 07/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 91. | 85. | 08/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.4 | 85. | 08/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 91. | 85. | 09/30/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.4 | 85. | 09/30/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 91. | 85. | 10/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.7 | 85. | 10/31/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 91. | 85. | 11/30/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 92.4 | 85. | 11/30/2023 |
| BOD, 5-day, 20 deg. C | | | | | | | | | 90.8 | 85. | 12/31/2023 |

| | | | |
|---|---|---|---|
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 12/31/2023 |
| BOD, 5-day, 20 deg. C | 90.8 | 85. | 01/31/2024 |
| BOD, 5-day, 20 deg. C | 92.4 | 85. | 01/31/2024 |
| BOD, 5-day, 20 deg. C | 90.9 | 85. | 02/29/2024 |
| BOD, 5-day, 20 deg. C | 92.4 | 85. | 02/29/2024 |
| BOD, 5-day, 20 deg. C | 90.9 | 85. | 03/31/2024 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 03/31/2024 |
| BOD, 5-day, 20 deg. C | 90.9 | 85. | 04/30/2024 |
| BOD, 5-day, 20 deg. C | 92.8 | 85. | 04/30/2024 |
| BOD, 5-day, 20 deg. C | 90.9 | 85. | 05/31/2024 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 05/31/2024 |
| BOD, 5-day, 20 deg. C | 91. | 85. | 06/30/2024 |
| BOD, 5-day, 20 deg. C | 92.7 | 85. | 06/30/2024 |
| BOD, 5-day, 20 deg. C | 90.9 | 85. | 07/31/2024 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 07/31/2024 |
| BOD, 5-day, 20 deg. C | 90.9 | 85. | 08/31/2024 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 08/31/2024 |
| BOD, 5-day, 20 deg. C | 91. | 85. | 09/30/2024 |
| BOD, 5-day, 20 deg. C | 92.4 | 85. | 09/30/2024 |
| BOD, 5-day, 20 deg. C | 90.9 | 85. | 10/31/2024 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 10/31/2024 |
| BOD, 5-day, 20 deg. C | 90.8 | 85. | 11/30/2024 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 11/30/2024 |
| BOD, 5-day, 20 deg. C | 90.9 | 85. | 12/31/2024 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 12/31/2024 |
| BOD, 5-day, 20 deg. C | 90.8 | 85. | 01/31/2025 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 01/31/2025 |
| BOD, 5-day, 20 deg. C | 90.8 | 85. | 02/28/2025 |
| BOD, 5-day, 20 deg. C | 92.3 | 85. | 02/28/2025 |

| | | | | | |
|---|---|---|---|---|---|
| Average | 25.3 | 3.56 | 25.3 | 3.51 | 91.8 |
| Minimum | 21.0 | 0.00 | 21.0 | 0.00 | 90.4 |
| Maximum | 26.2 | 6.16 | 26.2 | 6.16 | 94.0 |
| Count | 60 | 60 | 60 | 60 | 120 |
| Std Dev | 0.6 | 1.07 | 0.6 | 1.16 | 0.9 |
| CV | 0.0 | 0.30 | 0.0 | 0.33 | 0.0 |
| 95th Percentile | 25.8 | 5.17 | 25.8 | 5.17 | 92.8 |
| 5th Percentile | 25.0 | 2.56 | 25.0 | 2.11 | 90.8 |
| 90th percentile | 25.7 | 4.70 | 25.7 | 4.70 | 92.7 |

## Table 11. TSS Effluent Data

| Parameter Desc | TSS, 7 day in mg/L | | TSS, 7day in lbs/day | | TSS, 30day in mg/L | | TSS, 30day in lbs/day | | TSS, % Removal | | Monitoring Period End Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | DMR | Limit | DMR | Limit | DMR | Limit | DMR | Limit | DMR | Limit | |
| Solids, total suspended | 20. | 45. | 3.12 | 13.13 | 20. | 30. | 3.12 | 8.75 | 93. | 85. | 03/31/2020 |
| Solids, total suspended | 21. | 45. | 3.65 | 13.13 | 21. | 30. | 3.65 | 8.75 | 92.4 | 85. | 04/30/2020 |
| Solids, total suspended | 19. | 45. | 2.89 | 13.13 | 19. | 30. | 2.89 | 8.75 | 93.3 | 85. | 05/31/2020 |
| Solids, total suspended | 21. | 45. | 2.44 | 13.13 | 21. | 30. | 2.44 | 8.75 | 92.5 | 85. | 06/30/2020 |
| Solids, total suspended | 21. | 45. | 4.93 | 13.13 | 21. | 30. | 4.93 | 8.75 | 92.5 | 85. | 07/31/2020 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Solids, total suspended | 21. | 45. | 3.54 | 13.13 | 21. | 30. | 3.54 | 8.75 | 92.5 | 85. | 08/31/2020 |
| Solids, total suspended | 21. | 45. | 3.46 | 13.13 | 21. | 30. | 3.46 | 8.75 | 92.6 | 85. | 09/30/2020 |
| Solids, total suspended | 21. | 45. | 4.11 | 13.13 | 21. | 30. | 4.11 | 8.75 | 92.4 | 85. | 10/31/2020 |
| Solids, total suspended | 21. | 45. | 3.98 | 13.13 | 21. | 30. | 3.98 | 8.75 | 92.4 | 85. | 11/30/2020 |
| Solids, total suspended | 21. | 45. | 2.73 | 13.13 | 21. | 30. | 2.73 | 8.75 | 92.4 | 85. | 12/31/2020 |
| Solids, total suspended | 21. | 45. | 3.8 | 13.13 | 21. | 30. | 3.8 | 8.75 | 94. | 85. | 01/31/2021 |
| Solids, total suspended | 20. | 45. | 2.87 | 13.13 | 20. | 30. | 2.87 | 8.75 | 92.9 | 85. | 02/28/2021 |
| Solids, total suspended | 21. | 45. | 2.5 | 13.13 | 21. | 30. | 2.5 | 8.75 | 92.6 | 85. | 03/31/2021 |
| Solids, total suspended | 21. | 45. | 2.78 | 13.13 | 21. | 30. | 2.78 | 8.75 | 92.4 | 85. | 04/30/2021 |
| Solids, total suspended | 21. | 45. | 2.51 | 13.13 | 21. | 30. | 2.51 | 8.75 | 92.6 | 85. | 05/31/2021 |
| Solids, total suspended | 25.4 | 45. | 3.6 | 13.13 | 25.4 | 30. | 3.6 | 8.75 | 92.6 | 85. | 06/30/2021 |
| Solids, total suspended | 20. | 45. | 4.87 | 13.13 | 20. | 30. | 4.87 | 8.75 | 92.9 | 85. | 07/31/2021 |
| Solids, total suspended | 20. | 45. | 4.08 | 13.13 | 20. | 30. | 4.08 | 8.75 | 92.8 | 85. | 08/31/2021 |
| Solids, total suspended | 21. | 45. | 3.35 | 13.13 | 21. | 30. | 3.35 | 8.75 | 92.6 | 85. | 09/30/2021 |
| Solids, total suspended | 21. | 45. | 3.62 | 13.13 | 21. | 30. | 3.62 | 8.75 | 92.6 | 85. | 10/31/2021 |
| Solids, total suspended | 21. | 45. | 3.63 | 13.13 | 21. | 30. | 3.63 | 8.75 | 92.5 | 85. | 11/30/2021 |
| Solids, total suspended | 20. | 45. | 3.39 | 13.13 | 20. | 30. | 3.39 | 8.75 | 92.8 | 85. | 12/31/2021 |
| Solids, total suspended | 21. | 45. | 3.9 | 13.13 | 21. | 30. | 3.9 | 8.75 | 92.2 | 85. | 01/31/2022 |
| Solids, total suspended | 20. | 45. | 3.37 | 13.13 | 20. | 30. | 3.37 | 8.75 | 92.6 | 85. | 02/28/2022 |
| Solids, total suspended | 20. | 45. | 3.48 | 13.13 | 20. | 30. | 3.48 | 8.75 | 92.8 | 85. | 03/31/2022 |
| Solids, total suspended | 20. | 45. | 3.3 | 13.13 | 20. | 30. | 3.3 | 8.75 | 92.6 | 85. | 04/30/2022 |
| Solids, total suspended | 21. | 45. | 3.54 | 13.13 | 21. | 30. | 3.54 | 8.75 | 92.6 | 85. | 05/31/2022 |
| Solids, total suspended | 20. | 45. | 3.24 | 13.13 | 20. | 30. | 3.24 | 8.75 | 92.8 | 85. | 06/30/2022 |
| Solids, total suspended | 20. | 45. | 3.22 | 13.13 | 20. | 30. | 3.22 | 8.75 | 92.7 | 85. | 07/31/2022 |
| Solids, total suspended | 20. | 45. | 2.43 | 13.13 | 20. | 30. | 2.43 | 8.75 | 92.8 | 85. | 08/31/2022 |
| Solids, total suspended | 21. | 45. | 1.85 | 13.13 | 21. | 30. | 1.85 | 8.75 | 92.4 | 85. | 09/30/2022 |
| Solids, total suspended | 21. | 45. | 2.85 | 13.13 | 21. | 30. | 2.85 | 8.75 | 92.5 | 85. | 10/31/2022 |
| Solids, total suspended | 20. | 45. | 2.96 | 13.13 | 20. | 30. | 2.96 | 8.75 | 92.9 | 85. | 11/30/2022 |
| Solids, total suspended | 21. | 45. | 2.53 | 13.13 | 21. | 30. | 2.53 | 8.75 | 92.6 | 85. | 12/31/2022 |
| Solids, total suspended | 21. | 45. | 3.39 | 13.13 | 21. | 30. | 3.39 | 8.75 | 92.4 | 85. | 01/31/2023 |
| Solids, total suspended | 20. | 45. | 2.54 | 13.13 | 20. | 30. | 2.54 | 8.75 | 92.7 | 85. | 02/28/2023 |
| Solids, total suspended | 20. | 45. | 2.64 | 13.13 | 20. | 30. | 2.64 | 8.75 | 92.7 | 85. | 03/31/2023 |
| Solids, total suspended | 20. | 45. | 2.71 | 13.13 | 20. | 30. | 2.71 | 8.75 | 92.7 | 85. | 04/30/2023 |
| Solids, total suspended | 21. | 45. | 2.69 | 13.13 | 21. | 30. | 2.69 | 8.75 | 92.5 | 85. | 05/31/2023 |
| Solids, total suspended | 21. | 45. | 2.31 | 13.13 | 21. | 30. | 2.31 | 8.75 | 92.5 | 85. | 06/30/2023 |
| Solids, total suspended | 21. | 45. | 4.31 | 13.13 | 21. | 30. | 4.31 | 8.75 | 92.5 | 85. | 07/31/2023 |
| Solids, total suspended | 21. | 45. | 2.67 | 13.13 | 21. | 30. | 2.67 | 8.75 | 92.4 | 85. | 08/31/2023 |
| Solids, total suspended | 21. | 45. | 2.56 | 13.13 | 21. | 30. | 2.56 | 8.75 | 92.4 | 85. | 09/30/2023 |
| Solids, total suspended | 20. | 45. | 2.42 | 13.13 | 20. | 30. | 2.42 | 8.75 | 92.7 | 85. | 10/31/2023 |
| Solids, total suspended | 21. | 45. | 2.65 | 13.13 | 21. | 30. | 2.65 | 8.75 | 92.4 | 85. | 11/30/2023 |
| Solids, total suspended | 21. | 45. | 2.79 | 13.13 | 21. | 30. | 2.79 | 8.75 | 92.3 | 85. | 12/31/2023 |
| Solids, total suspended | 21. | 45. | 2.31 | 13.13 | 21. | 30. | 2.31 | 8.75 | 92.4 | 85. | 01/31/2024 |
| Solids, total suspended | 21. | 45. | 2.34 | 13.13 | 21. | 30. | 2.34 | 8.75 | 92.4 | 85. | 02/29/2024 |
| Solids, total suspended | 21. | 45. | 2.58 | 13.13 | 21. | 30. | 2.58 | 8.75 | 92.3 | 85. | 03/31/2024 |
| Solids, total suspended | 20. | 45. | 2.33 | 13.13 | 20. | 30. | 2.33 | 8.75 | 92.8 | 85. | 04/30/2024 |
| Solids, total suspended | 20. | 45. | 2.33 | 13.13 | 20. | 30. | 2.33 | 8.75 | 92.3 | 85. | 05/31/2024 |
| Solids, total suspended | 21. | 45. | 2.61 | 13.13 | 21. | 30. | 2.61 | 8.75 | 92.7 | 85. | 06/30/2024 |
| Solids, total suspended | 21. | 45. | 2.41 | 13.13 | 21. | 30. | 2.41 | 8.75 | 92.3 | 85. | 07/31/2024 |
| Solids, total suspended | 21. | 45. | 2.25 | 13.13 | 21. | 30. | 2.25 | 8.75 | 92.3 | 85. | 08/31/2024 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Solids, total suspended | 21. | 45. | 2.46 | 13.13 | 21. | 30. | 2.46 | 8.75 | 92.4 | 85. | 09/30/2024 |
| Solids, total suspended | 21. | 45. | 2.37 | 13.13 | 21. | 30. | 2.37 | 8.75 | 92.3 | 85. | 10/31/2024 |
| Solids, total suspended | 21. | 45. | 2.44 | 13.13 | 21. | 30. | 2.44 | 8.75 | 92.3 | 85. | 11/30/2024 |
| Solids, total suspended | 21. | 45. | 2.34 | 13.13 | 21. | 30. | 2.34 | 8.75 | 92.3 | 85. | 12/31/2024 |
| Solids, total suspended | 21. | 45. | 2.41 | 13.13 | 21. | 30. | 2.41 | 8.75 | 92.3 | 85. | 01/31/2025 |
| Solids, total suspended | 21. | 45. | 2.11 | 13.13 | 21. | 30. | 2.11 | 8.75 | 92.3 | 85. | 02/28/2025 |

| | | | | | |
|---|---|---|---|---|---|
| Average | 20.7 | 2.99 | 20.7 | 2.99 | 92.6 |
| Minimum | 19.0 | 1.85 | 19.0 | 1.85 | 92.2 |
| Maximum | 25.4 | 4.93 | 25.4 | 4.93 | 94.0 |
| Count | 60 | 60.00 | 60 | 60.00 | 60 |
| Std Dev | 0.8 | 0.68 | 0.8 | 0.68 | 0.3 |
| CV | 0.0 | 0.23 | 0.0 | 0.23 | 0.0 |
| 95th Percentile | 21.0 | 4.12 | 21.0 | 4.12 | 92.9 |
| 5th Percentile | 20.0 | 2.31 | 20.0 | 2.31 | 92.3 |
| 90th percentile | 21.0 | 3.91 | 21.0 | 3.91 | 92.8 |

## Table 12. Ammonia Effluent Data

| Parameter Desc | Daily Max mg/L | | Daily Max lbs/day | | Monthly Average mg/L | | Monthly Average lbs/day | | Monitoring Period End Date |
|---|---|---|---|---|---|---|---|---|---|
| | DMR | Limit | DMR | Limit | DMR | Limit | DMR | Limit | |
| Nitrogen, ammonia total [as N] | 2. | 29.5 | .31 | 8.61 | 2. | 9.5 | .31 | 2.77 | 03/31/2020 |
| Nitrogen, ammonia total [as N] | 2.1 | 29.5 | .36 | 8.61 | 2.1 | 9.5 | .36 | 2.77 | 04/30/2020 |
| Nitrogen, ammonia total [as N] | 1.9 | 29.5 | .24 | 8.61 | 1.9 | 9.5 | .24 | 2.77 | 05/31/2020 |
| Nitrogen, ammonia total [as N] | 2.2 | 29.5 | .35 | 8.61 | 2.2 | 9.5 | .35 | 2.77 | 06/30/2020 |
| Nitrogen, ammonia total [as N] | 2.2 | 29.5 | .52 | 8.61 | 2.2 | 9.5 | .52 | 2.77 | 07/31/2020 |
| Nitrogen, ammonia total [as N] | 2.3 | 29.5 | .4 | 8.61 | 2.3 | 9.5 | .4 | 2.77 | 08/31/2020 |
| Nitrogen, ammonia total [as N] | 2.1 | 29.5 | .35 | 8.61 | 2.1 | 9.5 | .35 | 2.77 | 09/30/2020 |
| Nitrogen, ammonia total [as N] | 1.9 | 29.5 | .37 | 8.61 | 1.9 | 9.5 | .37 | 2.77 | 10/31/2020 |
| Nitrogen, ammonia total [as N] | 1.9 | 29.5 | .36 | 8.61 | 1.9 | 9.5 | .36 | 2.77 | 11/30/2020 |
| Nitrogen, ammonia total [as N] | 2. | 29.5 | .26 | 8.61 | 2. | 9.5 | .26 | 2.77 | 12/31/2020 |
| Nitrogen, ammonia total [as N] | 1.54 | 29.5 | .24 | 8.61 | 1.54 | 9.5 | .24 | 2.77 | 01/31/2021 |
| Nitrogen, ammonia total [as N] | 1.42 | 29.5 | .19 | 8.61 | 1.42 | 9.5 | .19 | 2.77 | 02/28/2021 |
| Nitrogen, ammonia total [as N] | 1.26 | 29.5 | .18 | 8.61 | 1.26 | 9.5 | .18 | 2.77 | 03/31/2021 |
| Nitrogen, ammonia total [as N] | 1.18 | 29.5 | .14 | 8.61 | 1.18 | 9.5 | .14 | 2.77 | 04/30/2021 |
| Nitrogen, ammonia total [as N] | 1.34 | 29.5 | .16 | 8.61 | 1.34 | 9.5 | .16 | 2.77 | 05/31/2021 |
| Nitrogen, ammonia total [as N] | 1.43 | 29.5 | .18 | 8.61 | 1.43 | 9.5 | .18 | 2.77 | 06/30/2021 |
| Nitrogen, ammonia total [as N] | 1.18 | 29.5 | .25 | 8.61 | 1.18 | 9.5 | .25 | 2.77 | 07/31/2021 |
| Nitrogen, ammonia total [as N] | 1.18 | 29.5 | .24 | 8.61 | 1.18 | 9.5 | .24 | 2.77 | 08/31/2021 |
| Nitrogen, ammonia total [as N] | 1.3 | 29.5 | .21 | 8.61 | 1.3 | 9.5 | .21 | 2.77 | 09/30/2021 |
| Nitrogen, ammonia total [as N] | 1.52 | 29.5 | .26 | 8.61 | 1.52 | 9.5 | .26 | 2.77 | 10/31/2021 |
| Nitrogen, ammonia total [as N] | 1.83 | 29.5 | .32 | 8.61 | 1.83 | 9.5 | .32 | 2.77 | 11/30/2021 |
| Nitrogen, ammonia total [as N] | 1.67 | 29.5 | .27 | 8.61 | 1.67 | 9.5 | .27 | 2.77 | 12/31/2021 |
| Nitrogen, ammonia total [as N] | 1.78 | 29.5 | .33 | 8.61 | 1.78 | 9.5 | .33 | 2.77 | 01/31/2022 |
| Nitrogen, ammonia total [as N] | 1.87 | 29.5 | .31 | 8.61 | 1.87 | 9.5 | .31 | 2.77 | 02/28/2022 |
| Nitrogen, ammonia total [as N] | 1.78 | 29.5 | .24 | 8.61 | 1.78 | 9.5 | .24 | 2.77 | 03/31/2022 |
| Nitrogen, ammonia total [as N] | 1.64 | 29.5 | .27 | 8.61 | 1.64 | 9.5 | .27 | 2.77 | 04/30/2022 |
| Nitrogen, ammonia total [as N] | 1.34 | 29.5 | .23 | 8.61 | 1.34 | 9.5 | .23 | 2.77 | 05/31/2022 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, ammonia total [as N] | 1.26 | 29.5 | .2 | 8.61 | 1.26 | 9.5 | .2 | 2.77 | 06/30/2022 |
| Nitrogen, ammonia total [as N] | 1.33 | 29.5 | .2 | 8.61 | 1.33 | 9.5 | .2 | 2.77 | 07/31/2022 |
| Nitrogen, ammonia total [as N] | 1.47 | 29.5 | .28 | 8.61 | 1.47 | 9.5 | .28 | 2.77 | 08/31/2022 |
| Nitrogen, ammonia total [as N] | 1.63 | 29.5 | .14 | 8.61 | 1.63 | 9.5 | .14 | 2.77 | 09/30/2022 |
| Nitrogen, ammonia total [as N] | 1.79 | 29.5 | .24 | 8.61 | 1.79 | 9.5 | .24 | 2.77 | 10/31/2022 |
| Nitrogen, ammonia total [as N] | 1.63 | 29.5 | .22 | 8.61 | 1.63 | 9.5 | .22 | 2.77 | 11/30/2022 |
| Nitrogen, ammonia total [as N] | 1.84 | 29.5 | .22 | 8.61 | 1.84 | 9.5 | .22 | 2.77 | 12/31/2022 |
| Nitrogen, ammonia total [as N] | 1.97 | 29.5 | .31 | 8.61 | 1.97 | 9.5 | .31 | 2.77 | 01/31/2023 |
| Nitrogen, ammonia total [as N] | 1.76 | 29.5 | .28 | 8.61 | 1.76 | 9.5 | .28 | 2.77 | 02/28/2023 |
| Nitrogen, ammonia total [as N] | 1.69 | 29.5 | .26 | 8.61 | 1.69 | 9.5 | .26 | 2.77 | 03/31/2023 |
| Nitrogen, ammonia total [as N] | 1.77 | 29.5 | .24 | 8.61 | 1.77 | 9.5 | .24 | 2.77 | 04/30/2023 |
| Nitrogen, ammonia total [as N] | 1.64 | 29.5 | .21 | 8.61 | 1.64 | 9.5 | .21 | 2.77 | 05/31/2023 |
| Nitrogen, ammonia total [as N] | 1.69 | 29.5 | .19 | 8.61 | 1.69 | 9.5 | .19 | 2.77 | 06/30/2023 |
| Nitrogen, ammonia total [as N] | 1.81 | 29.5 | .37 | 8.61 | 1.81 | 9.5 | .37 | 2.77 | 07/31/2023 |
| Nitrogen, ammonia total [as N] | 1.73 | 29.5 | .2 | 8.61 | 1.73 | 9.5 | .2 | 2.77 | 08/31/2023 |
| Nitrogen, ammonia total [as N] | 1.63 | 29.5 | .22 | 8.61 | 1.63 | 9.5 | .22 | 2.77 | 09/30/2023 |
| Nitrogen, ammonia total [as N] | 1.74 | 29.5 | .21 | 8.61 | 1.74 | 9.5 | .21 | 2.77 | 10/31/2023 |
| Nitrogen, ammonia total [as N] | 1.7 | 29.5 | .21 | 8.61 | 1.7 | 9.5 | .21 | 2.77 | 11/30/2023 |
| Nitrogen, ammonia total [as N] | 1.68 | 29.5 | .22 | 8.61 | 1.68 | 9.5 | .22 | 2.77 | 12/31/2023 |
| Nitrogen, ammonia total [as N] | 1.71 | 29.5 | .23 | 8.61 | 1.71 | 9.5 | .23 | 2.77 | 01/31/2024 |
| Nitrogen, ammonia total [as N] | 1.68 | 29.5 | .19 | 8.61 | 1.68 | 9.5 | .19 | 2.77 | 02/29/2024 |
| Nitrogen, ammonia total [as N] | 1.71 | 29.5 | .21 | 8.61 | 1.71 | 9.5 | .21 | 2.77 | 03/31/2024 |
| Nitrogen, ammonia total [as N] | 1.6 | 29.5 | .19 | 8.61 | 1.6 | 9.5 | .19 | 2.77 | 04/30/2024 |
| Nitrogen, ammonia total [as N] | 1.71 | 29.5 | .2 | 8.61 | 1.71 | 9.5 | .2 | 2.77 | 05/31/2024 |
| Nitrogen, ammonia total [as N] | 1.73 | 29.5 | .22 | 8.61 | 1.73 | 9.5 | .22 | 2.77 | 06/30/2024 |
| Nitrogen, ammonia total [as N] | 1.77 | 29.5 | .2 | 8.61 | 1.77 | 9.5 | .2 | 2.77 | 07/31/2024 |
| Nitrogen, ammonia total [as N] | 1.68 | 29.5 | .18 | 8.61 | 1.68 | 9.5 | .18 | 2.77 | 08/31/2024 |
| Nitrogen, ammonia total [as N] | 1.77 | 29.5 | .22 | 8.61 | 1.77 | 9.5 | .22 | 2.77 | 09/30/2024 |
| Nitrogen, ammonia total [as N] | 1.68 | 29.5 | .19 | 8.61 | 1.68 | 9.5 | .19 | 2.77 | 10/31/2024 |
| Nitrogen, ammonia total [as N] | 1.73 | 29.5 | .2 | 8.61 | 1.73 | 9.5 | .2 | 2.77 | 11/30/2024 |
| Nitrogen, ammonia total [as N] | 1.85 | 29.5 | .22 | 8.61 | 1.85 | 9.5 | .22 | 2.77 | 12/31/2024 |
| Nitrogen, ammonia total [as N] | 1.68 | 29.5 | .19 | 8.61 | 1.68 | 9.5 | .19 | 2.77 | 01/31/2025 |
| Nitrogen, ammonia total [as N] | 1.81 | 29.5 | .32 | 8.61 | 1.81 | 9.5 | .32 | 2.77 | 02/28/2025 |

| | | | | |
|---|---|---|---|---|
| Average | 1.70 | 0.25 | 1.70 | 0.25 |
| Minimum | 1.18 | 0.14 | 1.18 | 0.14 |
| Maximum | 2.30 | 0.52 | 2.30 | 0.52 |
| Count | 60 | 60 | 60 | 60 |
| Std Dev | 0.25 | 0.07 | 0.25 | 0.07 |
| CV | 0.15 | 0.29 | 0.15 | 0.29 |
| 95th Percentile | 2.11 | 0.37 | 2.11 | 0.37 |
| 5th Percentile | 1.26 | 0.18 | 1.26 | 0.18 |
| 90th percentile | 2.00 | 0.35 | 2.00 | 0.35 |

## Table 13. Effluent Flow Data

| Parameter Desc | Daily Max mgd | | Monthly Average mdg | | Monitoring Period End Date |
|---|---|---|---|---|---|
| | DMR | Limit | DMR | Limit | |
| Flow, in conduit or thru treatment plant | .018 | | .015 | | 03/31/2020 |
| Flow, in conduit or thru treatment plant | .024 | | .02 | | 04/30/2020 |
| Flow, in conduit or thru treatment plant | .026 | | .018 | | 05/31/2020 |
| Flow, in conduit or thru treatment plant | .03 | | .021 | | 06/30/2020 |
| Flow, in conduit or thru treatment plant | .032 | | .029 | | 07/31/2020 |
| Flow, in conduit or thru treatment plant | .031 | | .023 | | 08/31/2020 |
| Flow, in conduit or thru treatment plant | .023 | | .02 | | 09/30/2020 |
| Flow, in conduit or thru treatment plant | .032 | | .026 | | 10/31/2020 |
| Flow, in conduit or thru treatment plant | .023 | | .02 | | 11/30/2020 |
| Flow, in conduit or thru treatment plant | .019 | | .015 | | 12/31/2020 |
| Flow, in conduit or thru treatment plant | .022 | | .019 | | 01/31/2021 |
| Flow, in conduit or thru treatment plant | .028 | | .018 | | 02/28/2021 |
| Flow, in conduit or thru treatment plant | .017 | | .015 | | 03/31/2021 |
| Flow, in conduit or thru treatment plant | .016 | | .015 | | 04/30/2021 |
| Flow, in conduit or thru treatment plant | .015 | | .014 | | 05/31/2021 |
| Flow, in conduit or thru treatment plant | .034 | | .014 | | 06/30/2021 |
| Flow, in conduit or thru treatment plant | .035 | | .03 | | 07/31/2021 |
| Flow, in conduit or thru treatment plant | .038 | | .028 | | 08/31/2021 |
| Flow, in conduit or thru treatment plant | .039 | | .029 | | 09/30/2021 |
| Flow, in conduit or thru treatment plant | .028 | | .023 | | 10/31/2021 |
| Flow, in conduit or thru treatment plant | .03 | | .026 | | 11/30/2021 |
| Flow, in conduit or thru treatment plant | .026 | | .02 | | 12/31/2021 |
| Flow, in conduit or thru treatment plant | .024 | | .021 | | 01/31/2022 |
| Flow, in conduit or thru treatment plant | .021 | | .021 | | 02/28/2022 |
| Flow, in conduit or thru treatment plant | .021 | | .019 | | 03/31/2022 |
| Flow, in conduit or thru treatment plant | .02 | | .019 | | 04/30/2022 |
| Flow, in conduit or thru treatment plant | .022 | | .02 | | 05/31/2022 |
| Flow, in conduit or thru treatment plant | .028 | | .022 | | 06/30/2022 |
| Flow, in conduit or thru treatment plant | .019 | | .018 | | 07/31/2022 |
| Flow, in conduit or thru treatment plant | .033 | | .024 | | 08/31/2022 |
| Flow, in conduit or thru treatment plant | .03 | | .015 | | 09/30/2022 |
| Flow, in conduit or thru treatment plant | .038 | | .021 | | 10/31/2022 |
| Flow, in conduit or thru treatment plant | .017 | | .018 | | 11/30/2022 |
| Flow, in conduit or thru treatment plant | .017 | | .015 | | 12/31/2022 |
| Flow, in conduit or thru treatment plant | .019 | | .018 | | 01/31/2023 |
| Flow, in conduit or thru treatment plant | .019 | | .017 | | 02/28/2023 |
| Flow, in conduit or thru treatment plant | .018 | | .016 | | 03/31/2023 |
| Flow, in conduit or thru treatment plant | .016 | | .015 | | 04/30/2023 |
| Flow, in conduit or thru treatment plant | .017 | | .015 | | 05/31/2023 |
| Flow, in conduit or thru treatment plant | .013 | | .011 | | 06/30/2023 |
| Flow, in conduit or thru treatment plant | .024 | | .015 | | 07/31/2023 |
| Flow, in conduit or thru treatment plant | .016 | | .014 | | 08/31/2023 |
| Flow, in conduit or thru treatment plant | .016 | | .014 | | 09/30/2023 |
| Flow, in conduit or thru treatment plant | .016 | | .014 | | 10/31/2023 |
| Flow, in conduit or thru treatment plant | .018 | | .015 | | 11/30/2023 |

| | | | | | |
|---|---|---|---|---|---|
| Flow, in conduit or thru treatment plant | .016 | | .015 | | 12/31/2023 |
| Flow, in conduit or thru treatment plant | .019 | | .016 | | 01/31/2024 |
| Flow, in conduit or thru treatment plant | .015 | | .014 | | 02/29/2024 |
| Flow, in conduit or thru treatment plant | .017 | | .015 | | 03/31/2024 |
| Flow, in conduit or thru treatment plant | .017 | | .015 | | 04/30/2024 |
| Flow, in conduit or thru treatment plant | .018 | | .014 | | 05/31/2024 |
| Flow, in conduit or thru treatment plant | .018 | | .014 | | 06/30/2024 |
| Flow, in conduit or thru treatment plant | .015 | | .014 | | 07/31/2024 |
| Flow, in conduit or thru treatment plant | .016 | | .014 | | 08/31/2024 |
| Flow, in conduit or thru treatment plant | .015 | | .013 | | 09/30/2024 |
| Flow, in conduit or thru treatment plant | .015 | | .014 | | 10/31/2024 |
| Flow, in conduit or thru treatment plant | .016 | | .015 | | 11/30/2024 |
| Flow, in conduit or thru treatment plant | .016 | | .014 | | 12/31/2024 |
| Flow, in conduit or thru treatment plant | .022 | | .015 | | 01/31/2025 |
| Flow, in conduit or thru treatment plant | .021 | | .016 | | 02/28/2025 |

| | | | |
|---|---|---|---|
| Average | 0.026 | | 0.021 |
| Minimum | 0.013 | | 0.011 |
| Maximum | 0.240 | | 0.200 |
| Count | 60 | | 60 |
| Std Dev | 0.029 | | 0.024 |
| CV | 1.129 | | 1.146 |
| 95th Percentile | 0.038 | | 0.029 |
| 5th Percentile | 0.015 | | 0.014 |
| 90th percentile | 0.033 | | 0.026 |

## Table 14. Fecal Coliform Effluent Data

| Parameter Desc | Inst Max CFU/100 ml | | Monthly Geomean CFU/100 ml | | Monitoring Period End Date |
|---|---|---|---|---|---|
| | DMR | Limit | DMR | Limit | |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 03/31/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 04/30/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 05/31/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 06/30/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 07/31/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 08/31/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 09/30/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 10/31/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | 2. | 43. | 2. | 14. | 11/30/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 12/31/2020 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 01/31/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 02/28/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 03/31/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 04/30/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 05/31/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 06/30/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 07/31/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 08/31/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 09/30/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 10/31/2021 |

| | | | | | |
|---|---|---|---|---|---|
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 11/30/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 12/31/2021 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 01/31/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 02/28/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 03/31/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 04/30/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 05/31/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 06/30/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 07/31/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 08/31/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 09/30/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 10/31/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 11/30/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 12/31/2022 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 01/31/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 02/28/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 03/31/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 04/30/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 05/31/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 06/30/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 07/31/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 08/31/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 09/30/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 10/31/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 11/30/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 12/31/2023 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 01/31/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 02/29/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 03/31/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 04/30/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 05/31/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | 1. | 43. | 1. | 14. | 06/30/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 07/31/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 08/31/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 09/30/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 10/31/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | 3. | 43. | 3. | 14. | 11/30/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | 2. | 43. | 2. | 14. | 12/31/2024 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 01/31/2025 |
| Fecal coliform, MPN, EC med, 44.5 C | . | 43. | . | 14. | 02/28/2025 |

| | | | |
|---|---|---|---|
| Average | 0.37 | | 0.37 |
| Minimum | 0.00 | | 0.00 |
| Maximum | 3.00 | | 3.00 |
| Count | 60 | | 60 |
| Std Dev | 0.64 | | 0.64 |
| CV | 1.74 | | 1.74 |
| 95th Percentile | 1.05 | | 1.05 |
| 5th Percentile | 0.00 | | 0.00 |
| 90th percentile | 1.00 | | 1.00 |

## Table 15. Effluent pH Data

| Parameter Desc | Instant. Min | | Instant. Max | | Monitoring Period End Date |
|---|---|---|---|---|---|
| | DMR | Limit | DMR | Limit | |
| pH | 6.61 | 6.5 | 7.17 | 8.5 | 03/31/2020 |
| pH | 6.54 | 6.5 | 6.84 | 8.5 | 04/30/2020 |
| pH | 6.68 | 6.5 | 7.21 | 8.5 | 05/31/2020 |
| pH | 6.56 | 6.5 | 6.97 | 8.5 | 06/30/2020 |
| pH | 6.53 | 6.5 | 6.79 | 8.5 | 07/31/2020 |
| pH | 6.61 | 6.5 | 6.74 | 8.5 | 08/31/2020 |
| pH | 6.58 | 6.5 | 6.84 | 8.5 | 09/30/2020 |
| pH | 6.53 | 6.5 | 6.76 | 8.5 | 10/31/2020 |
| pH | 6.82 | 6.5 | 7.02 | 8.5 | 11/30/2020 |
| pH | 6.55 | 6.5 | 6.94 | 8.5 | 12/31/2020 |
| pH | 6.63 | 6.5 | 6.93 | 8.5 | 01/31/2021 |
| pH | 6.71 | 6.5 | 7.05 | 8.5 | 02/28/2021 |
| pH | 6.62 | 6.5 | 7.07 | 8.5 | 03/31/2021 |
| pH | 6.61 | 6.5 | 6.79 | 8.5 | 04/30/2021 |
| pH | 6.52 | 6.5 | 6.82 | 8.5 | 05/31/2021 |
| pH | 6.55 | 6.5 | 6.99 | 8.5 | 06/30/2021 |
| pH | 6.83 | 6.5 | 7.02 | 8.5 | 07/31/2021 |
| pH | 6.58 | 6.5 | 6.89 | 8.5 | 08/31/2021 |
| pH | 6.97 | 6.5 | 7.33 | 8.5 | 09/30/2021 |
| pH | 6.51 | 6.5 | 6.76 | 8.5 | 10/31/2021 |
| pH | 6.7 | 6.5 | 6.93 | 8.5 | 11/30/2021 |
| pH | 6.68 | 6.5 | 6.94 | 8.5 | 12/31/2021 |
| pH | 6.53 | 6.5 | 6.63 | 8.5 | 01/31/2022 |
| pH | 6.65 | 6.5 | 6.81 | 8.5 | 02/28/2022 |
| pH | 6.63 | 6.5 | 6.89 | 8.5 | 03/31/2022 |
| pH | 6.65 | 6.5 | 6.91 | 8.5 | 04/30/2022 |
| pH | 6.76 | 6.5 | 7.01 | 8.5 | 05/31/2022 |
| pH | 6.56 | 6.5 | 6.96 | 8.5 | 06/30/2022 |
| pH | 6.81 | 6.5 | 7.16 | 8.5 | 07/31/2022 |
| pH | 6.51 | 6.5 | 7.16 | 8.5 | 08/31/2022 |
| pH | 6.87 | 6.5 | 7.31 | 8.5 | 09/30/2022 |
| pH | 6.94 | 6.5 | 7.44 | 8.5 | 10/31/2022 |
| pH | 6.67 | 6.5 | 7.33 | 8.5 | 11/30/2022 |
| pH | 6.87 | 6.5 | 7.34 | 8.5 | 12/31/2022 |
| pH | 7.11 | 6.5 | 7.54 | 8.5 | 01/31/2023 |
| pH | 6.99 | 6.5 | 7.37 | 8.5 | 02/28/2023 |
| pH | 6.82 | 6.5 | 7.19 | 8.5 | 03/31/2023 |
| pH | 6.64 | 6.5 | 7.07 | 8.5 | 04/30/2023 |
| pH | 6.6 | 6.5 | 7.16 | 8.5 | 05/31/2023 |
| pH | 6.89 | 6.5 | 7.53 | 8.5 | 06/30/2023 |
| pH | 6.91 | 6.5 | 7.37 | 8.5 | 07/31/2023 |
| pH | 6.81 | 6.5 | 7.23 | 8.5 | 08/31/2023 |
| pH | 7.14 | 6.5 | 7.5 | 8.5 | 09/30/2023 |
| pH | 6.87 | 6.5 | 7.32 | 8.5 | 10/31/2023 |
| pH | 6.89 | 6.5 | 7.32 | 8.5 | 11/30/2023 |
| pH | 6.8 | 6.5 | 7.32 | 8.5 | 12/31/2023 |

| | | | | | |
|---|---|---|---|---|---|
| pH | 7.07 | 6.5 | 7.34 | 8.5 | 01/31/2024 |
| pH | 7.02 | 6.5 | 7.27 | 8.5 | 02/29/2024 |
| pH | 6.84 | 6.5 | 7.26 | 8.5 | 03/31/2024 |
| pH | 6.95 | 6.5 | 7.2 | 8.5 | 04/30/2024 |
| pH | 6.95 | 6.5 | 7.2 | 8.5 | 05/31/2024 |
| pH | 7.04 | 6.5 | 7.31 | 8.5 | 06/30/2024 |
| pH | 7.03 | 6.5 | 7.32 | 8.5 | 07/31/2024 |
| pH | 7.19 | 6.5 | 7.3 | 8.5 | 08/31/2024 |
| pH | 7.09 | 6.5 | 7.16 | 8.5 | 09/30/2024 |
| pH | 6.87 | 6.5 | 7.26 | 8.5 | 10/31/2024 |
| pH | 6.83 | 6.5 | 7.31 | 8.5 | 11/30/2024 |
| pH | 6.81 | 6.5 | 6.99 | 8.5 | 12/31/2024 |
| pH | 6.75 | 6.5 | 7.13 | 8.5 | 01/31/2025 |
| pH | 6.73 | 6.5 | 6.98 | 8.5 | 02/28/2025 |
| Average | 6.77 | | 7.11 | | |
| Minimum | 6.51 | | 6.63 | | |
| Maximum | 7.19 | | 7.54 | | |
| Count | 60 | | 60 | | |
| Std Dev | 0.19 | | 0.22 | | |
| CV | 0.03 | | 0.03 | | |
| 95th Percentile | 7.09 | | 7.44 | | |
| 5th Percentile | 6.53 | | 6.76 | | |
| 90th percentile | 7.03 | | 7.34 | | |

## Table 16. Effluent Temperature Data

| Parameter Desc | Daily Max Degrees C | | Weekly Average Degrees C | | Monitoring Period End Date |
|---|---|---|---|---|---|
| | DMR | Limit | DMR | Limit | |
| Temperature, water deg. centigrade | 12.9 | | 12.75 | | 03/31/2020 |
| Temperature, water deg. centigrade | 14.7 | | 13.2 | | 04/30/2020 |
| Temperature, water deg. centigrade | 17.1 | | 15.7 | | 05/31/2020 |
| Temperature, water deg. centigrade | 25.4 | | 18.9 | | 06/30/2020 |
| Temperature, water deg. centigrade | 17.6 | | 17.1 | | 07/31/2020 |
| Temperature, water deg. centigrade | 19.9 | | 18.7 | | 08/31/2020 |
| Temperature, water deg. centigrade | 20.3 | | 19.5 | | 09/30/2020 |
| Temperature, water deg. centigrade | 17.8 | | 17.3 | | 10/31/2020 |
| Temperature, water deg. centigrade | 17. | | 15.1 | | 11/30/2020 |
| Temperature, water deg. centigrade | 15.4 | | 14.9 | | 12/31/2020 |
| Temperature, water deg. centigrade | 12.7 | | 11.5 | | 01/31/2021 |
| Temperature, water deg. centigrade | 13.3 | | 12.17 | | 02/28/2021 |
| Temperature, water deg. centigrade | 14.2 | | 14. | | 03/31/2021 |
| Temperature, water deg. centigrade | 15.6 | | 14.9 | | 04/30/2021 |
| Temperature, water deg. centigrade | 17.7 | | 16.9 | | 05/31/2021 |
| Temperature, water deg. centigrade | 19.5 | | 18.36 | | 06/30/2021 |
| Temperature, water deg. centigrade | 19. | | 17.7 | | 07/31/2021 |
| Temperature, water deg. centigrade | 18.7 | | 17.14 | | 08/31/2021 |
| Temperature, water deg. centigrade | 18.6 | | 17.5 | | 09/30/2021 |
| Temperature, water deg. centigrade | 18. | | 17.1 | | 10/31/2021 |

| Core Summer July 1 - Sep 14 | | Sep 15 - July 1 | |
|---|---|---|---|
| Daily Max | Weekly Average | Daily Max | Weekly Average |
| 17.6 | 17.1 | 12.9 | 12.75 |
| 19.9 | 18.7 | 14.7 | 13.2 |
| 20.3 | 19.5 | 17.1 | 15.7 |
| 19. | 17.7 | 25.4 | 18.9 |
| 18.7 | 17.14 | 17.8 | 17.3 |
| 18.6 | 17.5 | 17. | 15.1 |
| 19.5 | 18.8 | 15.4 | 14.9 |
| 19.7 | 18.4 | 12.7 | 11.5 |
| 19.4 | 18.4 | 13.3 | 12.17 |
| 19.3 | 18.3 | 14.2 | 14. |
| 20.6 | 19.7 | 15.6 | 14.9 |
| 19.7 | 19.35 | 17.7 | 16.9 |
| 18.7 | 18.32 | 19.5 | 18.36 |
| 19.2 | 18.9 | 18. | 17.1 |
| 18.9 | 18.5 | 16.1 | 15.4 |
| | | 15.2 | 13.7 |
| | | 12.6 | 12. |
| | | 12.7 | 12.4 |
| | | 13.3 | 12.95 |
| | | 13.7 | 13. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Temperature, water deg. centigrade | 16.1 | 15.4 | 11/30/2021 | | | 14.8 | 14.33 |
| Temperature, water deg. centigrade | 15.2 | 13.7 | 12/31/2021 | | | 16.2 | 15.8 |
| Temperature, water deg. centigrade | 12.6 | 12. | 01/31/2022 | | | 19.1 | 18.1 |
| Temperature, water deg. centigrade | 12.7 | 12.4 | 02/28/2022 | | | 16.2 | 15. |
| Temperature, water deg. centigrade | 13.3 | 12.95 | 03/31/2022 | | | 13.4 | 12.8 |
| Temperature, water deg. centigrade | 13.7 | 13. | 04/30/2022 | | | 13.2 | 12.7 |
| Temperature, water deg. centigrade | 14.8 | 14.33 | 05/31/2022 | | | 12.5 | 12. |
| Temperature, water deg. centigrade | 16.2 | 15.8 | 06/30/2022 | | | 12.5 | 11.98 |
| Temperature, water deg. centigrade | 19.5 | 18.8 | 07/31/2022 | | | 12.8 | 12.3 |
| Temperature, water deg. centigrade | 19.7 | 18.4 | 08/31/2022 | | | 16. | 15.2 |
| Temperature, water deg. centigrade | 19.4 | 18.4 | 09/30/2022 | | | 17.3 | 17.1 |
| Temperature, water deg. centigrade | 19.1 | 18.1 | 10/31/2022 | | | 18.9 | 17.8 |
| Temperature, water deg. centigrade | 16.2 | 15. | 11/30/2022 | | | 16.5 | 13.5 |
| Temperature, water deg. centigrade | 13.4 | 12.8 | 12/31/2022 | | | 13.8 | 13.3 |
| Temperature, water deg. centigrade | 13.2 | 12.7 | 01/31/2023 | | | 13.3 | 11.76 |
| Temperature, water deg. centigrade | 12.5 | 12. | 02/28/2023 | | | 13.4 | 13.15 |
| Temperature, water deg. centigrade | 12.5 | 11.98 | 03/31/2023 | | | 13.3 | 11.8 |
| Temperature, water deg. centigrade | 12.8 | 12.3 | 04/30/2023 | | | 14.8 | 13.8 |
| Temperature, water deg. centigrade | 16. | 15.2 | 05/31/2023 | | | 14.8 | 13.8 |
| Temperature, water deg. centigrade | 17.3 | 17.1 | 06/30/2023 | | | 17.5 | 16.68 |
| Temperature, water deg. centigrade | 19.3 | 18.3 | 07/31/2023 | | | 17.2 | 16.9 |
| Temperature, water deg. centigrade | 20.6 | 19.7 | 08/31/2023 | | | 16.4 | 15.2 |
| Temperature, water deg. centigrade | 19.7 | 19.35 | 09/30/2023 | | | 14.4 | 13.8 |
| Temperature, water deg. centigrade | 18.9 | 17.8 | 10/31/2023 | | | 13.1 | 12.3 |
| Temperature, water deg. centigrade | 16.5 | 13.5 | 11/30/2023 | | | 11.7 | 11.35 |
| Temperature, water deg. centigrade | 13.8 | 13.3 | 12/31/2023 | | | | |
| Temperature, water deg. centigrade | 13.3 | 11.76 | 01/31/2024 | | | | |
| Temperature, water deg. centigrade | 13.4 | 13.15 | 02/29/2024 | | | | |
| Temperature, water deg. centigrade | 13.3 | 11.8 | 03/31/2024 | | | | |
| Temperature, water deg. centigrade | 14.8 | 13.8 | 04/30/2024 | | | | |
| Temperature, water deg. centigrade | 14.8 | 13.8 | 05/31/2024 | | | | |
| Temperature, water deg. centigrade | 17.5 | 16.68 | 06/30/2024 | | | | |
| Temperature, water deg. centigrade | 18.7 | 18.32 | 07/31/2024 | | | | |
| Temperature, water deg. centigrade | 19.2 | 18.9 | 08/31/2024 | | | | |
| Temperature, water deg. centigrade | 18.9 | 18.5 | 09/30/2024 | | | | |
| Temperature, water deg. centigrade | 17.2 | 16.9 | 10/31/2024 | | | | |
| Temperature, water deg. centigrade | 16.4 | 15.2 | 11/30/2024 | | | | |
| Temperature, water deg. centigrade | 14.4 | 13.8 | 12/31/2024 | | | | |
| Temperature, water deg. centigrade | 13.1 | 12.3 | 01/31/2025 | | | | |
| Temperature, water deg. centigrade | 11.7 | 11.35 | 02/28/2025 | | | | |
| Average | 16.3 | 15.3 | | 19.3 | 18.4 | 15.3 | 14.3 |
| Minimum | 11.7 | 11.4 | | 17.6 | 17.1 | 11.7 | 11.4 |
| Maximum | 25.4 | 19.7 | | 20.6 | 19.7 | 25.4 | 18.9 |
| Count | 60 | 60 | | 15 | 15 | 45 | 45 |
| Std Dev | 2.8 | 2.6 | | 0.7 | 0.8 | 2.6 | 2.1 |
| CV | 0.2 | 0.2 | | 0.0 | 0.0 | 0.2 | 0.1 |
| 95th Percentile | 19.9 | 18.9 | | 20.4 | 19.6 | 19.1 | 18.0 |
| 5th Percentile | 12.6 | 11.8 | | 18.3 | 17.1 | 12.5 | 11.8 |
| 90th percentile | 19.5 | 18.7 | | 20.1 | 19.4 | 17.9 | 17.2 |

## Table 17. Floating Solids Effluent Data

| Parameter Desc | Monthly Max No=0; Yes=1 | | Monitoring Period End Date |
|---|---|---|---|
| | DMR | Limit | |
| Floating solids, waste or visible foam-visual | . | . | 03/31/2020 |
| Floating solids, waste or visible foam-visual | . | . | 04/30/2020 |
| Floating solids, waste or visible foam-visual | . | . | 05/31/2020 |
| Floating solids, waste or visible foam-visual | . | . | 06/30/2020 |
| Floating solids, waste or visible foam-visual | . | . | 07/31/2020 |
| Floating solids, waste or visible foam-visual | . | . | 08/31/2020 |
| Floating solids, waste or visible foam-visual | . | . | 09/30/2020 |
| Floating solids, waste or visible foam-visual | . | . | 10/31/2020 |
| Floating solids, waste or visible foam-visual | . | . | 11/30/2020 |
| Floating solids, waste or visible foam-visual | . | . | 12/31/2020 |
| Floating solids, waste or visible foam-visual | . | . | 01/31/2021 |
| Floating solids, waste or visible foam-visual | . | . | 02/28/2021 |
| Floating solids, waste or visible foam-visual | . | . | 03/31/2021 |
| Floating solids, waste or visible foam-visual | . | . | 04/30/2021 |
| Floating solids, waste or visible foam-visual | . | . | 05/31/2021 |
| Floating solids, waste or visible foam-visual | . | . | 06/30/2021 |
| Floating solids, waste or visible foam-visual | . | . | 07/31/2021 |
| Floating solids, waste or visible foam-visual | . | . | 08/31/2021 |
| Floating solids, waste or visible foam-visual | . | . | 09/30/2021 |
| Floating solids, waste or visible foam-visual | . | . | 10/31/2021 |
| Floating solids, waste or visible foam-visual | . | . | 11/30/2021 |
| Floating solids, waste or visible foam-visual | . | . | 12/31/2021 |
| Floating solids, waste or visible foam-visual | . | . | 01/31/2022 |
| Floating solids, waste or visible foam-visual | . | . | 02/28/2022 |
| Floating solids, waste or visible foam-visual | . | . | 03/31/2022 |
| Floating solids, waste or visible foam-visual | . | . | 04/30/2022 |
| Floating solids, waste or visible foam-visual | . | . | 05/31/2022 |
| Floating solids, waste or visible foam-visual | . | . | 06/30/2022 |
| Floating solids, waste or visible foam-visual | . | . | 07/31/2022 |
| Floating solids, waste or visible foam-visual | . | . | 08/31/2022 |
| Floating solids, waste or visible foam-visual | . | . | 09/30/2022 |
| Floating solids, waste or visible foam-visual | . | . | 10/31/2022 |
| Floating solids, waste or visible foam-visual | . | . | 11/30/2022 |
| Floating solids, waste or visible foam-visual | . | . | 12/31/2022 |
| Floating solids, waste or visible foam-visual | . | . | 01/31/2023 |
| Floating solids, waste or visible foam-visual | . | . | 02/28/2023 |
| Floating solids, waste or visible foam-visual | . | . | 03/31/2023 |
| Floating solids, waste or visible foam-visual | . | . | 04/30/2023 |
| Floating solids, waste or visible foam-visual | . | . | 05/31/2023 |
| Floating solids, waste or visible foam-visual | . | . | 06/30/2023 |
| Floating solids, waste or visible foam-visual | . | . | 07/31/2023 |
| Floating solids, waste or visible foam-visual | . | . | 08/31/2023 |
| Floating solids, waste or visible foam-visual | . | . | 09/30/2023 |
| Floating solids, waste or visible foam-visual | . | . | 10/31/2023 |
| Floating solids, waste or visible foam-visual | . | . | 11/30/2023 |

| | | | |
|---|---|---|---|
| Floating solids, waste or visible foam-visual | . | . | 12/31/2023 |
| Floating solids, waste or visible foam-visual | . | . | 01/31/2024 |
| Floating solids, waste or visible foam-visual | . | . | 02/29/2024 |
| Floating solids, waste or visible foam-visual | . | . | 03/31/2024 |
| Floating solids, waste or visible foam-visual | . | . | 04/30/2024 |
| Floating solids, waste or visible foam-visual | . | . | 05/31/2024 |
| Floating solids, waste or visible foam-visual | . | . | 06/30/2024 |
| Floating solids, waste or visible foam-visual | . | . | 07/31/2024 |
| Floating solids, waste or visible foam-visual | . | . | 08/31/2024 |
| Floating solids, waste or visible foam-visual | . | . | 09/30/2024 |
| Floating solids, waste or visible foam-visual | . | . | 10/31/2024 |
| Floating solids, waste or visible foam-visual | . | . | 11/30/2024 |
| Floating solids, waste or visible foam-visual | . | . | 12/31/2024 |
| Floating solids, waste or visible foam-visual | . | . | 01/31/2025 |
| Floating solids, waste or visible foam-visual | . | . | 02/28/2025 |

## Receiving Water Data

## Table 18. Receiving Water Flow Data

Summary statistics from USGS Stream Gage 12039220 from 1974 to 1981.

| | Flow (CFS) | Flow (MGD) |
|---|---|---|
| Average | 200.1 | 129.3 |
| Minimum | 4.1 | 2.6 |
| Maximum | 3500.0 | 2262.1 |
| Count | 2506 | 2506 |
| Std Dev | 332.2 | 214.7 |
| CV | 1.7 | 1.7 |
| 95th Percentile | 800.0 | 517.1 |
| 10th Percentile | 15.0 | 9.7 |
| 90th percentile | 500.0 | 323.2 |
| Harmonic Mean | 41.6 | 26.9 |
| 5th Percentile | 11.0 | 7.1 |

## Table 19. Receiving Water Ammonia Data

| Parameter Desc | Statistical Base Short Desc | DMR Value | Limit Unit Desc | Monitoring Period Start Date | Monitoring Period End Date |
|---|---|---|---|---|---|
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 4/1/2020 | 06/30/2020 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 7/1/2020 | 09/30/2020 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 10/1/2020 | 12/31/2020 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 1/1/2021 | 03/31/2021 |
| Nitrogen, ammonia total [as N] | INST MAX | .01 | Milligrams per Liter | 4/1/2021 | 06/30/2021 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 7/1/2021 | 09/30/2021 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 10/1/2021 | 12/31/2021 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 1/1/2022 | 03/31/2022 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 4/1/2022 | 06/30/2022 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 7/1/2022 | 09/30/2022 |

| | | | | | |
|---|---|---|---|---|---|
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 10/1/2022 | 12/31/2022 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 1/1/2023 | 03/31/2023 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 4/1/2023 | 06/30/2023 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 7/1/2023 | 09/30/2023 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 10/1/2023 | 12/31/2023 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 1/1/2024 | 03/31/2024 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 4/1/2024 | 06/30/2024 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 7/1/2024 | 09/30/2024 |
| Nitrogen, ammonia total [as N] | INST MAX | . | Milligrams per Liter | 10/1/2024 | 12/31/2024 |

| | | |
|---|---|---|
| Average | | 0.0 |
| Minimum | | 0.0 |
| Maximum | | 0.0 |
| Count | | 19 |
| Std Dev | | 0.0 |
| CV | | 4.4 |
| 95th Percentile | | 0.0 |
| 5th Percentile | | 0.0 |
| 90th percentile | | 0.0 |

## Table 20. Receiving Water pH Data

| Parameter Desc | Statistical Base Short Desc | DMR Value | Limit Unit Desc | Monitoring Period End Date |
|---|---|---|---|---|
| pH | INST MAX | 6.39 | Standard Units | 06/30/2020 |
| pH | INST MAX | 6.23 | Standard Units | 09/30/2020 |
| pH | INST MAX | 6.1 | Standard Units | 12/31/2020 |
| pH | INST MAX | 6.64 | Standard Units | 03/31/2021 |
| pH | INST MAX | 7.05 | Standard Units | 06/30/2021 |
| pH | INST MAX | 8.88 | Standard Units | 09/30/2021 |
| pH | INST MAX | 5.32 | Standard Units | 12/31/2021 |
| pH | INST MAX | 5.8 | Standard Units | 03/31/2022 |
| pH | INST MAX | 6.35 | Standard Units | 06/30/2022 |
| pH | INST MAX | 7.23 | Standard Units | 09/30/2022 |
| pH | INST MAX | 6.85 | Standard Units | 12/31/2022 |
| pH | INST MAX | 6.45 | Standard Units | 03/31/2023 |
| pH | INST MAX | 6.87 | Standard Units | 06/30/2023 |
| pH | INST MAX | 6.18 | Standard Units | 09/30/2023 |
| pH | INST MAX | 5.67 | Standard Units | 12/31/2023 |
| pH | INST MAX | 5.75 | Standard Units | 03/31/2024 |
| pH | INST MAX | 5.85 | Standard Units | 06/30/2024 |
| pH | INST MAX | 5.85 | Standard Units | 09/30/2024 |
| pH | INST MAX | 5.66 | Standard Units | 12/31/2024 |

| | | |
|---|---|---|
| Average | | 6.4 |
| Minimum | | 5.3 |
| Maximum | | 8.9 |
| Count | | 19 |
| Std Dev | | 0.8 |
| CV | | 0.1 |
| 95th Percentile | | 7.4 |
| 10th Percentile | | 5.7 |
| 90th percentile | | 7.1 |
| 5th percentile | | 5.6 |

## Table 21. Receiving Water Temperature Data

| Parameter Desc | Statistical Base Desc | DMR Value | Monitoring Period End Date | | Core Summer July 1 - Sep 14 | Sep 15 - July 1 |
|---|---|---|---|---|---|---|
| Temperature, water deg. centigrade | INST MAX | 15.1 | 06/30/2020 | | 15.1 | 7.5 |
| Temperature, water deg. centigrade | INST MAX | 14.5 | 09/30/2020 | | 14.5 | 7.1 |
| Temperature, water deg. centigrade | INST MAX | 7.5 | 12/31/2020 | | 15.2 | 5.9 |
| Temperature, water deg. centigrade | INST MAX | 7.1 | 03/31/2021 | | 14.5 | 7.7 |
| Temperature, water deg. centigrade | INST MAX | 15.2 | 06/30/2021 | | 12.1 | 4.3 |
| Temperature, water deg. centigrade | INST MAX | 14.5 | 09/30/2021 | | 13.8 | 6.7 |
| Temperature, water deg. centigrade | INST MAX | 5.9 | 12/31/2021 | | 15.7 | 7.4 |
| Temperature, water deg. centigrade | INST MAX | 7.7 | 03/31/2022 | | 11.9 | 5.5 |
| Temperature, water deg. centigrade | INST MAX | 12.1 | 06/30/2022 | | 11.2 | 6.3 |
| Temperature, water deg. centigrade | INST MAX | 13.8 | 09/30/2022 | | 13.6 | |
| Temperature, water deg. centigrade | INST MAX | 4.3 | 12/31/2022 | | | |
| Temperature, water deg. centigrade | INST MAX | 6.7 | 03/31/2023 | | | |
| Temperature, water deg. centigrade | INST MAX | 15.7 | 06/30/2023 | | | |
| Temperature, water deg. centigrade | INST MAX | 11.9 | 09/30/2023 | | | |
| Temperature, water deg. centigrade | INST MAX | 7.4 | 12/31/2023 | | | |
| Temperature, water deg. centigrade | INST MAX | 5.5 | 03/31/2024 | | | |
| Temperature, water deg. centigrade | INST MAX | 11.2 | 06/30/2024 | | | |
| Temperature, water deg. centigrade | INST MAX | 13.6 | 09/30/2024 | | | |
| Temperature, water deg. centigrade | INST MAX | 6.3 | 12/31/2024 | | | |
| Average | | 10.3 | | | 13.8 | 6.5 |
| Minimum | | 4.3 | | | 11.2 | 4.3 |
| Maximum | | 15.7 | | | 15.7 | 7.7 |
| Count | | 19 | | | 10 | 9 |
| Std Dev | | 4.0 | | | 1.5 | 1.1 |
| CV | | 0.4 | | | 0.1 | 0.2 |
| 95th Percentile | | 15.3 | | | 15.5 | 7.6 |
| 5th Percentile | | 5.4 | | | 11.5 | 4.8 |
| 90th percentile | | 15.1 | | | 15.3 | 7.5 |

## Table 22. Receiving Water Fecal Coliform Bacteria Data from Washington Department of Health Station WADOH-69-12

| Monitoring Period End Date | Parameter Desc | Value | Unit | Reporting Limit | Result Description | Sample Latitude | Sample Longitude |
|---|---|---|---|---|---|---|---|
| 1/22/2020 | Fecal Coliform | 11 | MPN/100mL | | | 47.24456 | -124.2159 |
| 3/18/2020 | Fecal Coliform | 1.8 | MPN/100mL | 1.8 | Below detection limit | 47.24456 | -124.2159 |
| 5/5/2020 | Fecal Coliform | 2 | MPN/100mL | | | 47.24456 | -124.2159 |
| 7/7/2020 | Fecal Coliform | 79 | MPN/100mL | | | 47.24456 | -124.2159 |
| 9/15/2020 | Fecal Coliform | 33 | MPN/100mL | | | 47.24456 | -124.2159 |
| 11/3/2020 | Fecal Coliform | 22 | MPN/100mL | | | 47.24456 | -124.2159 |
| 2/16/2021 | Fecal Coliform | 2 | MPN/100mL | | | 47.24456 | -124.2159 |
| 4/27/2021 | Fecal Coliform | 22 | MPN/100mL | | | 47.24456 | -124.2159 |
| 6/2/2021 | Fecal Coliform | 11 | MPN/100mL | | | 47.24456 | -124.2159 |
| 8/3/2021 | Fecal Coliform | 33 | MPN/100mL | | | 47.24456 | -124.2159 |
| 10/5/2021 | Fecal Coliform | 49 | MPN/100mL | | | 47.24456 | -124.2159 |
| 12/7/2021 | Fecal Coliform | 2 | MPN/100mL | | | 47.24456 | -124.2159 |
| 1/18/2022 | Fecal Coliform | 1.8 | MPN/100mL | | | 47.24456 | -124.2159 |
| 3/1/2022 | Fecal Coliform | 7.8 | MPN/100mL | | | 47.24456 | -124.2159 |
| 5/24/2022 | Fecal Coliform | 2 | MPN/100mL | | | 47.24456 | -124.2159 |
| 7/19/2022 | Fecal Coliform | 70 | MPN/100mL | | | 47.24456 | -124.2159 |
| 9/6/2022 | Fecal Coliform | 130 | MPN/100mL | | | 47.24456 | -124.2159 |
| 11/1/2022 | Fecal Coliform | 130 | MPN/100mL | | | 47.24456 | -124.2159 |
| 2/7/2023 | Fecal Coliform | 6.8 | MPN/100mL | | | 47.24456 | -124.2159 |
| 4/4/2023 | Fecal Coliform | 1.8 | MPN/100mL | 1.8 | Below detection limit | 47.24456 | -124.2159 |
| 6/6/2023 | Fecal Coliform | 17 | MPN/100mL | | | 47.24456 | -124.2159 |
| 8/14/2023 | Fecal Coliform | 130 | MPN/100mL | | | 47.24456 | -124.2159 |
| 10/3/2023 | Fecal Coliform | 79 | MPN/100mL | | | 47.24456 | -124.2159 |
| 12/11/2023 | Fecal Coliform | 17 | MPN/100mL | | | 47.24456 | -124.2159 |
| 1/2/2024 | Fecal Coliform | 1.8 | MPN/100mL | | | 47.24456 | -124.2159 |
| 3/5/2024 | Fecal Coliform | 2 | MPN/100mL | | | 47.24456 | -124.2159 |
| 5/7/2024 | Fecal Coliform | 1.8 | MPN/100mL | 1.8 | Below detection limit | 47.24456 | -124.2159 |
| 7/1/2024 | Fecal Coliform | 240 | MPN/100mL | | | 47.24456 | -124.2159 |
| 9/3/2024 | Fecal Coliform | 130 | MPN/100mL | | | 47.24456 | -124.2159 |
| 11/5/2024 | Fecal Coliform | 350 | MPN/100mL | | | 47.24456 | -124.2159 |

| | |
|---|---|
| Average | 52.9 |
| Minimum | 1.8 |
| Maximum | 350.0 |
| Count | 30 |
| Std Dev | 80.4 |
| CV | 1.5 |
| 95th Percentile | 190.5 |
| 5th Percentile | 1.8 |
| 90th percentile | 130.0 |

## Appendix C.

### Table 23. Existing Permit - Effluent Limits and Monitoring Requirements

| Parameter | Units | Effluent Limitations | | | Monitoring Requirements | | |
|---|---|---|---|---|---|---|---|
| | | Average Monthly Limit | Average Weekly Limit | Max Daily Limit | Sample Location | Sample Frequency | Sample Type |
| Biochemical Oxygen Demand ($BOD_5$) | mg/L | 30 | 45 | -- | Influent and Effluent | 1/month | Grab |
| | lbs/day | 8.75 | 13.13 | -- | | | Calculation[1] |
| BOD5 Percent Removal | % | 85% | -- | -- | Percent Removal | 1/month | Calculation[2] |
| Total Suspended Solids (TSS) | mg/L | 30 | 45 | -- | Influent and Effluent | 1/month | Grab |
| | lbs/day | 8.75 | 13.13 | -- | | | Calculation[1] |
| TSS Percent Removal | % | 85% | -- | -- | Percent Removal | 1/month | Calculation[2] |
| Fecal Coliform[3] | CFU/100 ml | 14 | -- | 43 (Inst. Max.)[4] | Effluent | 1/week | Grab |
| pH | S.U. | 6.5 – 8.5 at all times | | | Effluent | 1/week | Grab |
| Total Ammonia (as N) | mg/L | 9.5 | -- | 29.5[4] | Effluent | 1/month | Grab |
| | lbs/day | 2.77 | -- | 8.61 | | | Calculation[1] |
| Floating, Suspended, or Submerged Matter | -- | See Paragraph I.B.2 of the current permit | | | | | |
| Report Parameters | | | | | | | |
| Flow | mgd | Report | -- | Report | Effluent | Continuous | Recording |
| Temperature | ℃ | -- | Report | Report | Effluent | 1/week | Grab |

Notes

1. Loading (in lbs/day) is calculated by multiplying the concentration (in mg/L) by the corresponding flow (in mgd) for the day of sampling and a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the *NPDES Self-Monitoring System User Guide* (EPA 833-B-85-100, March 1985).
2. Percent Removal. The monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month using the following equation: (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration x 100. Influent and effluent samples must be taken over approximately the same time period.
3. The Average Monthly Limit for Fecal Coliform Bacteria is based on the Geometric Mean in colonies/100ml. See Part VI for a definition of geometric mean. If any value used to calculate the geometric mean is less than 1, the permittee must round that value up to 1 for purposes of calculating the geometric mean. The Instantaneous Maximum Limit is 43 colonies/100 ml.
4. Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation. See Paragraph I.B.3 and Part III.G of the permit.

# Appendix D. Reasonable Potential and WQBEL Formulae

## A. Reasonable Potential Analysis

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, the EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a WQBEL must be included in the permit.

### 1. Mass Balance

For discharges to flowing water bodies, the maximum projected receiving water concentration is determined using the following mass balance equation:

$$C_dQ_d = C_eQ_e + C_uQ_u \qquad \textit{Equation 1}$$

where,

| | | |
|---|---|---|
| $C_d$ | = | Receiving water concentration downstream of the effluent discharge (that is, the concentration at the edge of the mixing zone) |
| $C_e$ | = | Maximum projected effluent concentration |
| $C_u$ | = | 95th percentile measured receiving water upstream concentration |
| $Q_d$ | = | Receiving water flow rate downstream of the effluent discharge = $Q_e$+$Q_u$ |
| $Q_e$ | = | Effluent flow rate (set equal to the design flow of the WWTP) |
| $Q_u$ | = | Receiving water low flow rate upstream of the discharge (1Q10, 7Q10 or 30B3) |

When the mass balance equation is solved for $C_d$, it becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times Q_u}{Q_e + Q_u} \qquad \textit{Equation 2}$$

The above form of the equation is based on the assumption that the discharge is rapidly and completely mixed with 100% of the receiving stream.

If the mixing zone is based on less than complete mixing with the receiving water, the equation becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times (Q_u \times \%MZ)}{Q_e + (Q_u \times \%MZ)} \qquad \textit{Equation 3}$$

Where:

% MZ = the percentage of the receiving water flow available for mixing.

If a mixing zone is not allowed, dilution is not considered when projecting the receiving water concentration and,

$$C_d = C_e \quad \textit{Equation 4}$$

A dilution factor (D) can be introduced to describe the allowable mixing. Where the dilution factor is expressed as:

$$D = \frac{Q_e + Q_u \times \%MZ}{Q_e} \quad \textit{Equation 5}$$

After the dilution factor simplification, the mass balance equation becomes:

$$C_d = \frac{C_e - C_u}{D} + C_u \quad \textit{Equation 6}$$

If the criterion is expressed as dissolved metal, the effluent concentrations are measured in total recoverable metal and must be converted to dissolved metal as follows:

$$C_d = \frac{CF \times C_e - C_u}{D} + C_u \quad \textit{Equation 7}$$

Where $C_e$ is expressed as total recoverable metal, $C_u$ and $C_d$ are expressed as dissolved metal, and CF is a conversion factor used to convert between dissolved and total recoverable metal.

The above equations for $C_d$ are the forms of the mass balance equation which were used to determine reasonable potential and calculate wasteload allocations.

**2. Maximum Projected Effluent Concentration**

When determining the projected receiving water concentration downstream of the effluent discharge, the EPA's Technical Support Document for Water Quality-based Toxics Control (TSD, 1991) recommends using the maximum projected effluent concentration (Ce) in the mass balance calculation (see equation 3, page C-5). To determine the maximum projected effluent concentration (Ce) EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV for each pollutant parameter has been calculated, the reasonable potential multiplier (RPM) used to derive the maximum projected effluent concentration (Ce) can be calculated using the following equations:

First, the percentile represented by the highest reported concentration is calculated.

$$p_n = (1 - \text{confidence level})^{1/n}$$ *Equation 8*

where,

| | | |
|---|---|---|
| $p_n$ | = | the percentile represented by the highest reported concentration |
| n | = | the number of samples |

confidence level = 99% = 0.99

and

$$RPM = \frac{C_{99}}{C_{P_n}} = \frac{e^{Z_{99} \times \sigma - 0.5 \times \sigma^2}}{e^{Z_{P_n} \times \sigma - 0.5 \times \sigma^2}}$$ *Equation 9*

Where,

| | | |
|---|---|---|
| $\sigma^2$ | = | $\ln(CV^2 + 1)$ |
| $Z_{99}$ | = | 2.326 (z-score for the 99th percentile) |
| $Z_{Pn}$ | = | z-score for the $P_n$ percentile (inverse of the normal cumul distribution function at a given percentile) |
| CV | = | coefficient of variation (standard deviation ÷ mean) |

The maximum projected effluent concentration is determined by simply multiplying the maximum reported effluent concentration by the RPM:

$$C_e = (RPM)(MRC)$$ *Equation 10*

where MRC = Maximum Reported Concentration

### 3. Maximum Projected Effluent Concentration at the Edge of the Mixing Zone

Once the maximum projected effluent concentration is calculated, the maximum projected effluent concentration at the edge of the acute and chronic mixing zones is calculated using the mass balance equations presented previously.

### 4. Reasonable Potential

The discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria if the maximum projected concentration of the pollutant at the edge of the mixing zone exceeds the most stringent criterion for that pollutant.

## B. WQBEL Calculations

### 1. Calculate the Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated using the same mass balance equations used to calculate the concentration of the pollutant at the edge of the mixing zone in the reasonable potential analysis. To calculate the wasteload allocations, $C_d$ is set equal to the acute or chronic criterion and the equation is solved for $C_e$. The calculated $C_e$ is the acute or chronic WLA. Equation 6 is rearranged to solve for the WLA, becoming:

$$C_e = WLA = D \times (C_d - C_u) + C_u \qquad \textit{Equation 11}$$

Washington's water quality criteria for some metals are expressed as the dissolved fraction, but the Federal regulation at 40 CFR 122.45(c) requires that effluent limits be expressed as total recoverable metal. Therefore, the EPA must calculate a wasteload allocation in total recoverable metal that will be protective of the dissolved criterion. This is accomplished by dividing the WLA expressed as dissolved by the criteria translator, as shown in equation __. As discussed in Appendix ___, the criteria translator (CT) is equal to the conversion factor, because site-specific translators are not available for this discharge.

$$C_e = WLA = \frac{D \times (C_d - C_u) + C_u}{CT} \qquad \textit{Equation 12}$$

The next step is to compute the "long term average" concentrations which will be protective of the WLAs. This is done using the following equations from the EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD):

$$LTA_a = WLA_a \times e^{(0.5\sigma^2 - z\,\sigma)} \qquad \textit{Equation 13}$$

$$LTA_c = WLA_c \times e^{(0.5\sigma_4^2 - z\sigma_4)} \qquad \textit{Equation 14}$$

where,

| | | |
|---|---|---|
| $\sigma^2$ | = | $\ln(CV^2 + 1)$ |
| $Z_{99}$ | = | 2.326 (z-score for the $99^{th}$ percentile probability basis) |
| CV | = | coefficient of variation (standard deviation ÷ mean) |
| $\sigma_4^2$ | = | $\ln(CV^2/4 + 1)$ |

For ammonia, because the chronic criterion is based on a 30-day averaging period, the Chronic Long Term Average (LTAc) is calculated as follows:

$$LTA_c = WLA_c \times e^{(0.5\sigma_{30}^2 - z\sigma_{30})} \qquad \textit{Equation 15}$$

where,

$\sigma_{30}^2$ = $\ln(CV^2/30 + 1)$

The LTAs are compared and the more stringent is used to develop the daily maximum and monthly average permit limits as shown below.

**2. Derive the maximum daily and average monthly effluent limits**

Using the TSD equations, the MDL and AML effluent limits are calculated as follows:

$$MDL = LTA \times e^{(z_m\sigma - 0.5\sigma^2)} \qquad \textit{Equation 16}$$

$$\text{AML} = \text{LTA} \times e^{(z_a \sigma_n - 0.5\sigma_n^2}$$ *Equation 17*

where σ, and $\sigma^2$ are defined as they are for the LTA equations above, and,

| | | |
|---|---|---|
| $\sigma_n^2$ | = | ln($CV^2$/n + 1 |
| $z_a$ | = | 1.645 (z-score for the 95th percentile probability basis) |
| $z_m$ | = | 2.326 (z-score for the 99th percentile probability basis) |
| n | = | number of sampling events required per month. With the exception of ammonia, if the AML is based on the $LTA_c$, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 4. For ammonia, In the case of ammonia, if the AML is based on the $LTA_c$, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 30. |

## C. Critical Low Flow Conditions

The low flow conditions of a water body are used to determine WQBELs. In general, Washington's WQS require criteria be evaluated at the following low flow receiving water conditions. Applicable Criteria/Design Conditions for Determining the Acute and Chronic Dilution Factors for Aquatic Life, Department of Ecology Water Quality Program Permit Writer's Manual page 190 at https://apps.ecology.wa.gov/publications/summarypages/92109.html) as defined below:

| | |
|---|---|
| Acute aquatic life | 1Q10 |
| Chronic aquatic life | 7Q10 |
| Non-carcinogenic human health criteria | 30Q5 |
| Carcinogenic human health criteria | harmonic mean flow |

1. The 1Q10 represents the lowest one day flow with an average recurrence frequency of once in 10 years.
2. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years.
3. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years.
4. The 30Q10 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 10 years.
5. The harmonic mean is a long-term mean flow value calculated by dividing the number of daily flow measurements by the sum of the reciprocals of the flows.

## Appendix E. Reasonable Potential and WQBEL Calculations

### Table 24. Ammonia Reasonable Potential Analysis

| Pollutant, CAS No. & NPDES Application Ref. No. | | | AMMONIA, Criteria as Total $NH_3$ |
|---|---|---|---|
| **Effluent Data** | # of Samples (n) | | 60 |
| | Coeff of Variation (Cv) | | 0.15 |
| | Effluent Concentration, ug/L (Max. or 95th Percentile) | | 2,110 |
| | Calculated 50th percentile Effluent Conc. (when n>10) | | |
| **Receiving Water Data** | 90th Percentile Conc., ug/L | | 0 |
| | Geo Mean, ug/L | | |
| **Water Quality Criteria** | Aquatic Life Criteria, ug/L | Acute | 21,945 |
| | | Chronic | 2,081 |
| | WQ Criteria for Protection of Human Health, ug/L | | - |
| | Metal Criteria Translator, decimal | Acute | - |
| | | Chronic | - |
| | Carcinogen? | | N |
| **Aquatic Life Reasonable Potential** | | | |
| Effluent percentile value | | | 0.950 |
| s | $s^2=\ln(CV^2+1)$ | | 0.149 |
| Pn | $Pn=(1\text{-confidence level})^{1/n}$ | | 0.951 |
| Multiplier | | | 1.00 |
| Max concentration (ug/L) at edge of… | | Acute | 521 |
| | | Chronic | 67 |
| **Reasonable Potential? Limit Required?** | | | **NO** |

## Table 25. Temperature Reasonable Potential Analysis

| | Core Summer Criteria | Supplemental Criteria |
|---|---|---|
| **INPUT** | **July 1-Sept 14** | **Sept 15-July 1** |
| 1. Chronic Dilution Factor at Mixing Zone Boundary | 31.5 | 31.5 |
| 2. 7DADMax Ambient Temperature (T) (Upstream Background 90th percentile) | 15.3 °C | 7.5 °C |
| 3. 7DADMax Effluent Temperature (95th percentile) | 20.4 °C | 19.1 °C |
| 4. Aquatic Life Temperature WQ Criterion in Fresh Water | 16.0 °C | 16.0 °C |
| **OUTPUT** | | |
| 5. Temperature at Chronic Mixing Zone Boundary: | 15.5 °C | 7.9 °C |
| 6. Incremental Temperature Increase or decrease: | 0.2 °C | 0.4 °C |
| 7. Maximum Allowable Incremental Temperature Increase: | 1.3 °C | 1.9 °C |
| 8. Maximum Allowable Temperature at Mixing Zone Boundary: | 16.0 °C | 9.4 °C |
| **A. If ambient temp is warmer than WQ criterion** | | |
| 9. Does temp fall within this warmer temp range?<br>10. **If YES - Use TMDL-based or performance-based limit - Do Not use this spreadsheet** | NO | NO |
| **B. If ambient temp is cooler than WQ criterion but within 28/($T_{amb}$+7) of the criterion** | | |
| 11. Does temp fall within this Incremental temp. range? | YES | NO |
| 12. Temp increase allowed at mixing zone boundary, if required: | NO LIMIT | --- |
| **C. If ambient temp is cooler than (WQ criterion - 28/($T_{amb}$+7))** | | |
| 13. Does temp fall within this Incremental temp. range? | NO | YES |
| 14. Temp increase allowed at mixing zone boundary, if required: | --- | NO LIMIT |
| **RESULTS** | | |
| **15. Do any of the above cells show a temp increase?** | **NO** | **NO** |
| **16. Temperature Limit if Required?** | **NO LIMIT** | **NO LIMIT** |

## Appendix F. Endangered Species Act Assessment

The Endangered Species Act (ESA) requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species.

The action area includes the section of the Moclips River from the location of the outfall and downstream to the mouth of the Moclips River at the Pacific Ocean. A review of the threatened and endangered species located in action area finds that bull trout (*Salvelinus confluentus*), Dolly Varden (*Salvelinus malma*), the Yellow-billed Cuckoo (*Coccyzus americanus*), the Marbled Murrelet (*Brachyramphus marmoratus*), and the Hawaiian Petrel (*Pterodroma sandwichensis)* are threatened and have the potential to be impacted by the discharge of the facility.

### Bull Trout (*Salvelinus confluentus*) (threatened)

#### Background and Species Description

Bull trout are a char species of fish, a subgroup within the salmonid family. They are found native throughout the Pacific Northwest, Alaska, and Canada in waters with the following habitat conditions: cold, clean, complex, and connected. Due to these habitat requirements, bull trout are commonly found in high mountainous areas where the water is fed via snowmelt or glacial runoff. Within water systems, they will mainly be found inhabiting deep pools of large and cold rivers or lakes, where riparian habitats are intact, migration corridors are accessible, and conditions allow for both adult spawning and juvenile rearing. (USFWS 2024)

Compared to other salmonids, bull trout have more specific habitat requirements that appear to influence their distribution and abundance. They need cold water to survive, so they are seldom found in waters where temperatures exceed 59 to 64 degrees (F) (15 to 17.8 ℃). They also require stable stream channels, clean spawning and rearing gravel, complex and diverse cover, and unblocked migratory corridors. Bull trout may be distinguished from brook trout (*Salvelinus fontinalis*) by several characteristics: spots never appear on the dorsal (back) fin, and the spots that rest on the fish's olive green to bronze back are pale yellow, orange or salmon colored. The bull trout's tail is not deeply forked as is the case with lake trout (*Salvelinus namaycush*). (USFWS 2024)

#### Geographic Range and Spatial Distribution

Bull trout exhibit two forms: resident and migratory. Resident bull trout spend their entire lives in the same stream/creek. Migratory bull trout move to larger bodies of water to overwinter and then migrate back to smaller waters to reproduce. An anadromous form of bull trout also exists in the Coastal-Puget Sound population, which spawns in rivers and streams but rears young in the ocean. This distinct population segment (DPS) encompasses all the Pacific coast drainages north of the Columbia River in Washington including those flowing into Puget Sound.

**ESA Status**

Bull trout are a threatened species and are likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

**Critical Habitat**

Critical habitat was designated for Puget Sound bull trout on September 26, 2005 (70 FR 56213). The critical habitat designation for Puget Sound bull trout includes a total of 388 miles of streams in the Olympic Peninsula and 646 miles of streams in Puget Sound as well as 419 shoreline miles in the Olympic Peninsula marine areas and 566 shoreline miles in the Puget Sound marine areas. According to USFWS's Information for Planning and Conservation tool, the area of and immediately downstream of the discharge from the Moclips River Estates WWTP is a designated critical habitat for bull trout.

**Population Trends and Risks**

The decline of bull trout, a cold-water species, is primarily due to habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, past fisheries management practices, impoundments, dams, water diversions, and the introduction of nonnative species (USFWS, 2019a). The Coastal-Puget Sound bull trout are vulnerable to many of the same threats that have reduced bull trout in the Columbia River and Klamath River Basins including hybridization and competition with non-native brook trout, brown trout and lake trout, degradation of spawning and rearing habitat, and isolation of local populations due to dams and diversions (67 FR 71240).

**Analysis of Potential Impacts to Bull Trout**

During the development of the current permit, it was determined that the discharge from the Moclips River Estates WWTP would have no effect on Coastal-Puget Sound bull trout populations. The EPA has determined that the wastewater discharge will continue to have no effect on listed species and/or designated critical habitat for the following reasons:

1. The facility's low discharge, even at peak use at the maximum design flow of 0.035 mgd, has a high dilution ratio with the receiving water. At the peak design flow and during the receiving water's 4.266 mgd 7Q10 low flow, there is still a minimum dilution ratio of 122:1. With average stream flow of 129.3 mgd and at maximum design flow, the dilution ratio is 3,694:1. Because of this high dilution ratios at the point of the outfall, any elevated temperatures are unlikely to affect bull trout in the receiving water. Bull trout are also a highly mobile species that is unlikely to be found nesting or residing in the immediate vicinity of the outfall for periods long enough for the effluent to have an effect.
2. Since the construction of the roof in 2019, along with other updates to the facility in the last ten years including a robust ultraviolet disinfection/treatment system, the effluent quality is exceptional. The facility's single highest fecal coliform bacteria sample 3 colony forming units per 100ml, while their monthly geomean

and instantaneous maximum limits in the current permit are 14 and 43 colony forming units per 100ml. The effluent pH ranges between an instantaneous minimum of 6.51 s.u. to an instantaneous maximum of 7.54 s.u., which is much less variance than the receiving water pH instantaneous minimum and maximum of 5.3 s.u. and 8.9 s.u., respectively. The maximum monthly average effluent temperature measured was 19.7 °C, while the upstream receiving water maximum temperature was 15.7 °C. However, as stated above, the small effluent flow volume results in rapid temperature dissipation to ambient levels.

3. While it is possible that this DPS may travel through the action area and could be exposed to the discharges, these periods of potential exposure are expected to be short-term as the facility is just upstream of the confluence with the Pacific Ocean (see Appendix A).
4. While anadromous bull trout are documented in nearshore marine and estuarine waters downstream of the discharge area, it is anticipated that bull trout will rarely be present in the area around the outfall due to the shallow depth of the stream and the proximity to the marine waters. Therefore, bull trout are not likely to be directly exposed to the discharges.
5. The facility serves a small residential area of 69 total homes and 250 people with no industrial dischargers, meaning there are no significant concentrations of toxics in the effluent. The facility also uses a robust ultraviolet disinfection system; therefore, chlorine is absent from the effluent.

**Effects Determination**

For these reasons, the EPA has determined that issuance of this permit will have no effect on bull trout populations.

**Dolly Varden (*Salvelinus malma*) (threatened)**

**Background and Species Description**

Dolly varden, an anadromous char species and a member of the family Salmonidae, occurs in several river drainages within the Coastal-Puget Sound DPS of the bull trout (66 FR 1628). Juvenile Dolly Varden (and freshwater-resident adults) vary in color depending on the waters they inhabit. In clear streams and lakes, young Dolly Varden are usually olive-brown, but in glacial streams they are pale silver-gray. While living in freshwater before going to sea, young Dolly Varden have 8–12 dark, irregularly-shaped vertical bars (parr marks) on their sides straddling the lateral line. Pale white or orange to red spots, brightening at the onset of maturity, begin to develop when juveniles reach 3–4 inches in length.

While in the ocean, and for a short time after entering fresh water, adult sea-run Dolly Varden are silvery with a faint green sheen overlain with light orange spots. Once they reach fresh water, this silvery appearance transitions into greenish-brown with dark-orange to red spots. As spawning season approaches, males become brilliantly colored with red, black and white bellies, black gill covers, bright orange to red spots, and bright orange and black fins with a bright-white leading edge. Males also develop a strongly-hooked jaw (kype). Female spawners develop similar characteristics, but to a lesser degree.

Freshwater forms of Dolly Varden have olive-brown (when in clear streams) or pale silver-gray (when in glacial streams) sides overlain with orange to red spots. As spawning season approaches, adults develop spawning colors as described above for sea-run Dolly Varden. Dwarf freshwater forms often retain parr marks as adults.

**Geographic Range and Spatial Distribution**

According to the USFWS Environmental Conservation Online System, the observed range is similar to bull trout, where the species ranges between northwestern Washington and southeastern Alaska near coastal areas.

**ESA Status**

According to the January 2001 proposed listing (66 FR 1628), because of the close resemblance in appearance between bull trout and Dolly Varden, law enforcement personnel have substantial difficulty in differentiating between the two species. Therefore, for the ultimate protection of bull trout, the ESA listing status was set as Proposed Similarity of Appearance (Threatened). There are no five-year reviews or recovery plans, and there is no established critical habitat for this anadromous fish.

**Population Trends and Risks**

Life cycles, population dynamics, physiological characteristics, and species risks are similar to bull trout (Dunham et al., 2008). While the population remains relatively stable over time, the known threats include human harvest, mining, urbanization, migratory barriers, and timber harvest.

**Analysis of Potential Impacts to Dolly Varden**

The outfall does not cause a migratory disturbance due to any physical barriers, and the effluent is near or below background conditions. For these reasons, as well as those listed in the analysis of impacts to bull trout, a similar species in life cycle and physical characteristics, the outfall is not expected to have an effect on any dolly varden found within the action area.

**Effects Determination**

The EPA has determined that issuance of this permit will have no effect on dolly varden populations.

**Marbled Murrelet (*Brachyramphus marmoratus)* (threatened)**

The marbled murrelet, a small seabird, requires habitat comprised of large coniferous trees, large diameter platforms covered in moss and other detritus, overhead cover, and access routes, provides for the establishment of nests and the successful rearing of nestlings (USFWS, 2019b). The species was listed as Threatened in October 1992. While the species may be present within the vicinity of the discharge, it is highly unlikely this bird species will come in contact with the effluent from the Moclips River Estates WWTP. Moreover, if the marbled murrelet does come in contact with any of the effluent, there will be no impact on the bird as the treated wastewater is similar to the receiving water in temperature, pH, bacteria concentrations, and all other parameters.

**Effects Determination**
For these reasons, the EPA has determined that issuance of this permit will have no effect on marbled murrelet populations.

**Yellow-Billed Cuckoo (*Coccyzus americanus*) (threatened)**

The yellow-billed cuckoo is a small bird species found in most western states and was listed as Threatened in November 2014. Similar to the marbled murrelet, the primary cause of decline of yellow-billed cuckoo is the loss and degradation of riparian breeding habitat, which typically entails wooded riparian zones with dense cover (USFWS, 2021). Similar to the marbled murrelet, the species is not likely to come in contact with the water from the discharges, but if it does, the discharges are treated to concentrations similar to background; therefore, the discharges will have no effect on the population.

**Effects Determination**
For these reasons, the EPA has determined that issuance of this permit will have no effect on yellow-billed cuckoo populations.

**Hawaiian Petrel (*Pterodroma sandwichensis*)**

The Hawaiian petrel is a medium sized bird species found along the Pacific coast of the United States as well as Hawaii and other Pacific islands. In March 1967, the species was listed as Endangered Wherever Found. The decline, particularly notable in the Hawaiian Islands, is attributed to infrastructure including collisions with power lines and buildings, as well as predation from nonnative predators (Raine et al., 2017). Similar to the yellow-billed cuckoo and the marbled murrelet, it is not expected that the Hawaiian petrel will come in contact with the discharges. If any contact does occur, the species will not be affected as the discharge is so chemically and biologically similar to the background conditions in Moclips River.

**Effects Determination**
For these reasons, the EPA has determined that issuance of this permit will have no effect on Hawaiian petrel populations.

# Appendix G. Essential Fish Habitat Assessment

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH).

The EFH implementing regulations, 50 CFR § 600.810(a), define the term "adverse effect" as: any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

The NOAA EFH Mapper identifies EFH for both coho and chinook salmon within the action area.

**Chinook salmon (*Oncorhynchus tshawytscha)***

Chinook salmon are a highly mobile anadromous fish species that spawn in freshwater stream systems and spend the majority of their lifecycle in pelagic waters. The 2016 NMFS 5-Year Review of Puget Sound Chinook salmon, Hood Canal summer-run Chum salmon, and Puget Sound Steelhead noted several factors for the decline in Chinook salmon species, including: overfishing, loss of freshwater and estuarine habitat, hydropower development, poor ocean conditions, and hatchery practices.

While the action area is listed as EFH for chinook salmon, it is demonstrated that the discharge will not have an effect on the species for the following reasons:

1. The outfall does not physically protrude into the water and the facility has no physical barriers affecting migratory fish species.
2. The flow rates from the facility's outfall are minor compared to the flows in the Moclips River. Even at the facility's peak design flow during low flow in the receiving water, the dilution is high enough to not affect migratory or nesting chinook salmon.
3. There are no major industrial sources contributing to the effluent streams and available discharge monitoring data demonstrates the effluents do not contain significant concentrations of toxics.
4. The permit contains conservation measures in the form of effluent limitations and monitoring requirements necessary to ensure the protection of the receiving water and its designated uses

**Coho Salmon (Oncorhynchus kisutch)**

Similar to chinook salmon, coho salmon are an anadromous migratory species residing primarily in the Pacific Ocean and migrating back into freshwater streams to spawn. The most common threats and stressors to coho salmon are blocked access to spawning grounds and habitat degradation caused by dams and culverts.

For the following reasons, it is demonstrated that the discharge will not have an effect on coho salmon populations.

1. Effects to EFH from direct exposure to the treated effluent are expected be insignificant due to the minor flow volume and domestic, nonindustrial nature of the treated effluent.
2. The discharges do not contain toxics of any significant portions as there are no industrial users, and the facility treats domestic sewage from 69 homes and serves a resident population of 250.
3. The fecal coliform bacteria monitoring data collected by the permittee over the last 10 years demonstrate the facility's ability to treat effluent to bacteria concentrations similar to or lower than in the receiving water.
4. The mixing zones authorized by the Washington State Department of Ecology for the discharges are small in relation to the overall receiving water and designated essential fish habitat areas.
5. The discharges are not expected to impede the migration of any species due to physical barriers, temperature, or other water quality parameters, or the presence of significant quantities of toxic contaminants.

Based on the above conclusions, the EPA has determined reissuance of the NPDES permit for the Moclips River Estates WWTP will not affect EFH for any managed species.

## Appendix H. Antidegradation Analysis

The purpose of Washington's Antidegradation Policy is to:

- Restore and maintain the highest possible quality of the surface waters of Washington.
- Describe situations under which water quality may be lowered from its current condition.
- Apply to human activities that are likely to have an impact on the water quality of surface water.
- Ensure that all human activities likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment.
- Apply three tiers of protection (described below) for surface waters of the state.
    1. Tier I is used to ensure existing and designated uses are maintained and protected and applies to all waters and all sources of pollution.
    2. Tier II is used to ensure that waters of a higher quality than the criteria assigned in this chapter are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities.
    3. Tier III is used to prevent the degradation of waters formally listed in this chapter as "outstanding resource waters," and applies to all sources of pollution.

The EPA utilized Washington's WQS in the Moclips River and downstream in the Pacific Ocean to establish discharge limits in the permit and accordingly, the antidegradation analysis was completed for the Moclips River and Pacific Ocean downstream of the discharge. The discharge proposed in this permit should not cause a loss of beneficial uses because there have not been any changes in the process of the existing facility, and there is no change in the design flow. Therefore, the EPA concludes that the discharge does not trigger the need for any further antidegradation analysis beyond Tier I Protection.

*Tier I Protection – Protection and maintenance of existing and designated uses Fact Sheet:*

According to Washington's antidegradation policy, WAC 172-210A-310, this facility must meet Tier I requirements. Existing and designated uses must be maintained and protected. No degradation may be allowed that would interfere with, or become injurious to, existing or designated uses, except as provided for in WAC 173-201A612. The waters of the Moclips River in Washington downstream of the point of discharge are protected for the following designated beneficial uses:

- Aquatic Life Uses: Salmonoid Spawning, Rearing, and Migration Wildlife Habitat;
- Recreational Uses: Primary Contact;

- Harvesting;
- Water Supply Uses: Domestic Water; Industrial Water; Agricultural Water; Stock Water
- Aesthetic Values.

The effluent limits in the permit ensure compliance with applicable numeric and narrative water quality criteria. The numeric and narrative water quality criteria are set at levels that ensure protection of the designated uses. As there is no information indicating the presence of existing beneficial uses other than those that are designated, the draft permit ensures a level of water quality necessary to protect the designated uses and, in compliance with WAC 173-201A-310 and 40 CFR § 131.12(a)(1), also ensures that the level of water quality necessary to protect existing uses is maintained and protected. While *E. coli* limits have replaced fecal coliform bacteria limits, there is no degradation because the designated uses are protected by the relevant WQS. If the EPA receives information during the public comment period demonstrating that there are existing uses for which the Moclips River is not designated, the EPA will consider this information before issuing a final permit and will establish additional or more stringent permit conditions if necessary to ensure protection of existing uses.

*Tier II Protection – Protection of waters of higher quality than the standards*

The EPA determined that analysis for a Tier II Protection is not necessary because the facility is not a new or expanded action that has the potential to cause measurable degradation to existing water quality. According to WAC 173-210A-320(2), a facility must prepare a Tier II analysis when the facility is planning a new or expanded action that has the potential to cause measurable degradation to the physical, chemical, or biological quality of the water body.

*Tier III Protection – Protection of Outstanding Resource Waters*

The EPA determined that a Tier III antidegradation analysis is not necessary because the receiving water does not meet the conditions as an Outstanding Resource Water pertaining to WAC 173-201A-330(1).