State of Oregon
Department of
Environmental
Quality

National Pollutant Discharge Elimination System
Permit Fact Sheet
City of Seaside

Final: August 12, 2024

Permittee	City of Seaside 989 Broadway Seaside, Oregon 97138
Existing Permit Information	File Number: 79929 Permit Number: 102579 EPA Reference Number: OR0020401 Category: Domestic Class: Major Expiration Date: November 30, 2023
Permittee Contact	Andrew Grant Wastewater Treatment Contractor 708-606-52409 989 Broadway Seaside, Oregon 97138
Receiving Water Information	Receiving stream/NHD name: Necanicum River NHD Reach Code & % along reach: 17100201000136-27.1% USGS 12-digit HUC: 171002010103 OWRD Administrative Basin: North Coast ODEQ LLID & River Mile: 123927746011-1.3 Integrated Report Assessment Unit ID: OR_EB_1710020101_01_107210
Proposed Action	Permit Renewal Application Number: 948260 Date Application Received: July 14, 2023
Permit Writer	Mark W. Hynson 503-229-5295 Date Prepared: August 2024

NPDES Permit Fact Sheet
City of Seaside Wastewater Treatment Plant

Table of Contents

List of Tables

List of Figures

NPDES Permit Renewal Fact Sheet
City of Seaside Wastewater Treatment Plant

1. Introduction

The Department of Environmental Quality (DEQ) proposes to renew the National Pollutant Discharge Elimination System (NPDES) wastewater permit for the City of Seaside Wastewater Treatment Plant (WTP) located at 1821 N Franklin Street in the City of Seaside, Clatsop County, Oregon. This permit allows and regulates the discharge of treated wastewater directly to the Necanicum River at River Mile (RM) 1.3.[1] The permit also authorizes the City of Seaside to recycle the treated effluent as recycled water to qualified users. Lastly, the permit allows the City of Seaside to produce Class A and Class B biosolids for beneficial land application.

As required by Oregon Administrative Rule 340-045-0035, this fact sheet describes the basis and methodology used in developing the permit. The permit is divided into several sections:

Schedule A – Waste discharge limitations
Schedule B – Minimum monitoring and report requirements
Schedule C – Compliance conditions and schedules
Schedule D – Special conditions
Schedule E – Pretreatment conditions
Schedule F – General conditions

A summary of the major changes to the permit are listed below:

- Schedule A (Waste Discharge Limits) – This schedule has been updated to reflect current DEQ permit format.

- Schedule B (Minimum Monitoring and Reporting Requirements) – General monitoring and reporting requirements have been updated to include new summary statistics to be included with web-based electronic Net Discharge Monitoring Reports (NetDMR). Influent and effluent monitoring frequencies have been revised to reflect the latest requirements in DEQ's Monitoring Matrix. The outfall inspection requirement has been moved from Schedule B to Schedule D.

- Schedule D (Special Conditions) – Several special conditions related to biosolids management and land application, Whole Effluent Toxicity (WET) testing, operator certification and spill/emergency response planning have been updated in this schedule. This schedule includes a condition for the permittee to update the existing mixing zone study in the next permit term.

[1] This is the distance upstream from the mouth of the Necanicum River, where it meets the Pacific Ocean.

- Schedule E (Program Requirements) – There are no pretreatment program requirements associated with this permit.

- Schedule F (General Conditions) – Includes the latest version of the NPDES General Conditions.

2. Facility Description

2.1 Wastewater Facility

The Seaside WTP is located at 1821 N Franklin Street in the City of Seaside, Clatsop County, Oregon. Treated effluent is discharged year-round into the Necanicum River at RM 1.3 (Figure 2-1). The average dry weather design flow is 2.25 million gallons per day (MGD). Actual flows reported during the 2018-2022 dry seasons (May 1 – October 31) averaged 1.2 MGD while 2018-2022 wet season discharges (November 1 – April 30) averaged 1.9 MGD. The origin of the wastewater processed is approximately 91 percent domestic, 9 percent commercial, and 1 percent light industrial. The permittee reports a permanent service population of 6,040 residents. Summer seasonal and weekend tourist populations result in an average daily population of 9,935 individuals.

Aerial Photo Source: Google Earth, 2023

Figure 2-1: Facility and Outfall Location

The permittee's original wastewater treatment facility was constructed at the present site in the 1930s. Major plant and process upgrades occurred in the 1960s and 1986. The 1986 improvements included the installation of the existing Orbal oxidation ditch. Other minor improvements include the addition of UV disinfection in 2001 and improvements to the screening headworks in 2010. In 2017, the facility installed a biosolids dryer for producing Exceptional Quality ("EQ") biosolids for beneficial land application.

The permittee's WTP consists of the headworks with automated mechanical screening and grit removal, two oxidation basins, two secondary clarifiers, an ultraviolet (UV) light disinfection channel, two gravity thickeners, and two anaerobic digesters. A general flow schematic of the WTP is included in Appendix A.

Screening and grit removal occurs in the headworks. Raw sewage influent initially enters the headworks structure through a 16-inch diameter pipe. Flows are measured via magnetic meter beneath the headworks structure. A step screen and grit removal system in the headworks removes large solids and grit from the influent stream. Screenings are deposited into a dumpster that is hauled off-site for disposal. From the headworks, the screened influent flows by gravity to the oxidation basins.

The WTP operates two oxidation basins, each rated for 1.1 MGD. The basins can operate in parallel, series, step-aeration, sludge-reaeration and reduced sludge inventory configurations, and employ a circular and linear path to provide long retention times for the removal of biochemical oxygen demand (BOD), total suspended solids (TSS) and ammonia. Each basin is equipped with aerators for mixing, solids suspension and oxygen transfer. Additional details on solids processing are present in Section 4.2.

Secondary treatment is provided by the two aeration basins. Secondary clarification occurs in two clarifiers located downstream of the oxidation basins. The primary purpose of the clarifiers are to separate wastewater solids through settling and surface skimming of floatable solids. Each circular clarifier is equipped with a rotating bottom sludge collector and a rotating surface skimming arm to remove floatables. Secondary effluent from the oxidation basins flows by gravity through the center column of each clarifier and over a circulate feed well into the clarifier basin. Clarified secondary effluent overflows around the circumference of an exterior circular weir and flows by gravity to the WTP's disinfection system. Returned Activated Sludge (RAS) that settles within the secondary clarifiers is pumped back to the upstream oxidation basins for recycling. Waste Activated Sludge is pumped from the clarifiers to aerobic digesters.

The WTP uses a medium pressure, high intensity ultraviolet (UV) treatment system with four 8-lamp modules for effluent disinfection. Secondary effluent from the clarifiers flows by gravity into the UV disinfection channel that exposes the waste stream to UV light. The disinfected effluent is discharged by gravity through a 32-inch diameter outfall pipe to the Necanicum River. Monitoring of the treated effluent for permit compliance is conducted just downstream of the UV treatment system.

2.2 Outfalls

The WTP's point of discharge into the Necanicum River (Outfall 001A) is located approximately 400 feet southeast of the WTP along the west side of the Necanicum River channel at approximate RM 1.3 (Figure 2-1). Constructed in 2011, Outfall 001A replaced the WTP's original Outfall 001 that discharged approximately 820 feet downstream (north) of the existing Outfall 001A location. The existing outfall was designated as Outfall 001A in previous permits and this designation is being maintained with the permit renewal to avoid confusion with the decommissioned Outfall 001.

Outfall 001A consists of a buried 32-inch diameter pipe that terminates with a three-port diffuser. The diffuser section consists of three 10-inch risers at a 10-foot spacing, with a check valve port on each riser. The diffuser ports are oriented 45 degrees downstream from the diffuser axis, pointing offshore and at 0 degrees horizontal. The outfall discharges at a depth of approximately 2.75 feet below mean low low water (MLLW) and 5.5 feet below the mean tide level (MTL).

The proposed permit provides the Seaside WTP with the option for discharging recycled water through a new Outfall 002 when a recycled water use plan is developed and approved by DEQ. Under the current permit term, the permittee has not developed a recycled water use plan. The proposed permit allows the option for the Seaside WTP to develop its recycled water reuse program and to discharge recycled water through Outfall 002. Outfall 002 will likely be located within the WTP downstream of UV disinfection where the facility can distribute the recycled water.

Table 2-1: List of Outfalls

Outfall Number	Type of Waste	Lat/Long	Design Flow[1] (mgd)	Existing Flow[2] (mgd)
001A	Treated Wastewater	46.0042 N/-123.9211 W	2.25	1.2
002	Recycled Water	To be determined	N/A	N/A

1. Design Flow = design average dry weather flow
2. Existing Flow = existing average monthly dry weather flow from 2018-2023 DMRs.

2.3 Stormwater

The 1200-Z Industrial Stormwater general permit is required for wastewater treatment facilities with a design flow of 1 MGD or more unless all facility stormwater is collected, treated, and discharged as part of its treated wastewater. DEQ's industrial stormwater program will engage the permittee to determine applicability. Discharges of industrial stormwater are not authorized by this permit.

2.4 Industrial Pretreatment

Based upon information submitted with the permittee's permit renewal application, no categorical industrial users are known to discharge into the facility's collection system. A DEQ-approved industrial pretreatment program is not needed for this facility.

The proposed permit requires the permittee to conduct and submit to DEQ an Industrial User Survey (Survey) within one year of permit issuance. DEQ will review the Survey results and, if DEQ determines that a pretreatment program is required, the permit may be reopened and modified to require development of a pretreatment program.

2.5 Wastewater Classification

OAR 340-049 requires all permitted municipal wastewater collection and treatment facilities receive a classification based on the size and complexity of the systems. DEQ evaluated the classifications for the treatment and collection system, which are publicly available at: https://www.deq.state.or.us/wq/opcert/Docs/OpcertReport.pdf.

3. Schedule A: Effluent Limit Development

Effluent limits serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters. Effluent limitations can be based on either the technology available to control the pollutants or limits that are protecting the water quality standards for the receiving water. DEQ refers to these two types of permit limits as technology-based effluent limitations (TBELs) and water quality-based effluent limits (WQBELs) respectively. When a TBEL is not restrictive enough to protect the receiving stream, DEQ must include a WQBEL in the permit.

3.1 Existing Effluent Limits

The table below show the limits contained in the existing permit.

Table 3-1: Existing Effluent Limits

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5 (May 1 – October 31)	mg/L	20	30	
	lb/day	380	560	750
	% removal	85	-	-
TSS (May 1 – October 31)	mg/L	20	30	
	lb/day	380	560	750
	% removal	85	-	-
TSS (November 1 - April 30)	mg/L	30	45	
	lb/day	560	840	1100
	% removal	85	-	-
TSS (November 1 – April 30)	mg/L	30	45	-
	lb/day	560	840	1100
	% removal	85	-	-
pH (See note a.)	SU	Between 6.0 and 9.0		
E. Coli Bacteria (See note b.)	#/100 mL	126 (See note c.)		406

Notes:

a. May not be outside the range of 6.0 to 9.0 Standard Units (S.U.)

b. No single *E. coli* sample may exceed 406 organisms per 100 mL. The permittee may take at least 5 consecutive re-samples at 4-hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken and the geometric mean of the 5 re-samples is less than or equal to 126 *E. coli* organisms/100 mL to demonstrate compliance with the limit.

c. Reported as a monthly geometric mean.

Additional information for the limits in Table 3-1:

(A) Average dry weather design flow to the facility equals 2.25 MGD and mass load limits are based on 2.25 MGD.

(B) In accordance with OAR 340-041-0061(9)(a)(C), on any day that the daily flow to a sewage treatment facility exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit does not apply. The permittee must operate the treatment facility at highest and best practicable treatment and control.

3.2 Technology-Based Effluent Limit Development

40 CFR 122.44(a)(1) requires publicly owned treatment works (POTW) to meet technology-based effluent limits, for five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS) and pH (i.e., federal secondary treatment standards). Substitution of 5-day carbonaceous oxygen demand ($CBOD_5$) for BOD_5 is allowed. The numeric standards for these pollutants are contained in 40 CFR 133.102. In addition, DEQ has developed minimum design criteria for BOD_5 and TSS that apply to specific watershed basins in Oregon. These are listed in the basin-specific criteria sections under OAR 340-041-0101 to 0350. During the summer low flow months as defined by OAR, these design criteria are more stringent than the federal secondary treatment standards. The basin-specific criteria are not effluent limits, but are implemented as design criteria for new or expanded wastewater treatment plants. The table below shows a comparison of the federal secondary treatment standards and the basin-specific design criteria for the North Coast Basin.

Table 3-2: Comparison of TBELs for Federal Secondary Treatment Standards and Oregon Basin-Specific Design Criteria

Parameter	Federal Secondary Treatment Standards		North Coast Basin-Specific Design Criteria (OAR 340-041-0235)
	30-Day Average	7-Day Average	Monthly Average
BOD_5 (mg/L)	30	45	Low Stream Flow (approximately May 1 – October 31): 20 mg/L – BOD_5 and TSS High Stream Flow (approximately November 1 – April 30): Minimum of secondary treatment or equivalent control
TSS (mg/L)	30	45	
pH (S.U.)	6.0 – 9.0. (instantaneous)		N/A
BOD_5 and TSS % Removal	85%	N/A	N/A

The limits for BOD_5 and TSS shown in the table above are concentration-based limits. The existing concentration-based BOD_5 and TSS TBELs applicable during the May through October period, as listed in Table 3-1 above, were previously established based on the regulations and policies in place at that time. DEQ is retaining these limits in the proposed permit. Mass-based limits are required in addition to the concentration-based limits per OAR 340-041-0061(9).

For any facility that has not expanded their average dry weather treatment capacity after June 30, 1992, OAR 340-041-0061(9)(a) requires that the mass load limits be calculated using the following equations:

Monthly Avg Mass Load = Design Flow* x Monthly Concentration Limit x Unit Conversion Factor

Weekly Average Mass Load = 1.5 x Monthly Average Mass Load Limit

Daily Maximum Mass Load = 2 x Monthly Average Mass Load Limit

* Design flow is the design average dry weather flow (DADWF) or the design average wet weather flow (DAWWF)

The following table lists the effluent flows and concentration limits used for the calculations.

Table 3-3: Design Flows and Concentrations Limits

Season	Design Flow (mgd)	Monthly TSS Concentration Limit (mg/L)	Monthly BOD_5 Concentration Limit (mg/L)
Dry Weather	2.25	20	20
Wet Weather	2.25	30	30
Design flow comments: Average dry weather design flow used for both dry and wet weather discharge conditions.			

The permittee's low stream flow (summer) mass load limits for BOD_5 and TSS (monthly and weekly average and daily maximum) are based on the current permit's average dry weather design flow of 2.25 MGD and a concentration of 20 mg/L. Utilizing the equation presented above, the low stream flow calculations for BOD_5 and TSS are:

Monthly Average: 2.25 MGD x 20 mg/L x 8.34 = 375 lbs/day (380 lbs/day – rounded to two significant figures)

Weekly Average: 380 lbs/day monthly average x 1.5 = 570 lbs/day

Daily Maximum: 380 lbs/day monthly x 2 = 760 lbs/day

The facility's high stream flow (winter) mass limits (monthly and weekly average and daily maximum) for BOD_5 and TSS are based on the flow of 2.25 MGD and a concentration of 30 mg/L. The winter calculations are:

Monthly Average: 2.25 MGD x 30 mg/L x 8.34 = 563 lbs/day (rounded to 560 lbs/day)

Weekly Average: 560 lbs/day monthly average x 1.5 = 840 lbs/day

Daily Maximum: 560 lbs/day monthly average x 2 = 1120 lbs/day (rounded to 1100 lbs/day)

The existing 2018 permit used a slightly different procedure for calculating the mass load limits, resulting in slightly lower summer limits. To satisfy anti-degradation and anti-backsliding requirements, the existing BOD_5 and TSS mass loading limits will be retained in the proposed permit.

Since the Seaside WTP has not been significantly upgraded since 1986, state regulations allow for a waiver of the daily mass load limits under certain conditions. Per OAR 340-041-0061(9)(a)(C), on any day that the daily flow to a sewage treatment facility exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit does not apply. However, the permittee must operate the treatment facility at the highest and best practicable treatment and control. Schedule A of the existing permit includes the waiver allowed by this regulation. The proposed permit retains this waiver.

The proposed BOD_5 and TSS limits are listed in the following table. These limits are the same as in the existing 2018 permit.

Table 3-4: BOD_5 and TSS Technology Based Effluent Limits

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5 (May 1 – October 31)	mg/L	20	30	NA
	lb/day	380	560	750
	% removal	85	NA	NA
TSS (May 1 – October 31)	mg/L	20	30	NA
	lb/day	380	560	750
	% removal	85	NA	NA
BOD_5 (November 1 – April 30)	mg/L	30	45	NA
	lb/day	560	840	1100
	% removal	85	NA	NA
TSS (November 1 – April 30)	mg/L	30	45	NA
	lb/day	560	840	1100
	% removal	85	NA	NA

3.3 Water Quality-Based Effluent Limit Development

40 CFR 122.44(d) requires that permits include limitations more stringent than technology-based requirements where necessary to meet water quality standards. Water quality-based effluent limits may be in the form of a wasteload allocation required as part of a Total Maximum Daily Load (TMDL). They may also be required if a site-specific analysis indicates the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality criterion. DEQ establishes effluent limits for pollutants that have a reasonable potential to exceed a criterion. The analyses are discussed below.

3.3.1 Designated Beneficial Uses

NPDES permits issued by DEQ must protect the following designated beneficial uses of the Necanicum River. These uses are listed in OAR-340-041-0230 for the North Coast Basin. The Seaside WTP discharges into a section of the Necanicum River that is considered estuarine. The beneficial uses for estuaries and adjacent marine waters of the North Coast Basin, as listed in OAR 340-041 Table 230A, include the following:

- Industrial water supply
- Fish and aquatic life (including salmonid rearing, migration and spawning)
- Wildlife and hunting
- Fishing
- Boating
- Water contact recreation
- Aesthetic quality, and
- Commercial navigation and transportation

3.3.2 303d Listed Parameters and Total Maximum Daily Loads

The following table lists the parameters that are on the 2022 303(d) list (Category 5) within the discharge's stream reach. The table also lists any parameters with a TMDL wasteload allocation assigned to the facility (Category 4).

Table 3-5: 303d and TMDL Parameters

Water Quality Limited Parameters (Category 5)	
AU ID:	OR_EB_1710020101_01_107210
AU Name:	Necanicum River
AU Status:	Impaired
Year Listed	2004
Year Last Assessed	2018
303d Parameters (Category 5)	None
TMDL Parameters (Category 4)	
Fecal Coliform	

3.3.3 TMDL Wasteload Allocations

DEQ issued a TMDL for the North Coast Basin which addressed the fecal coliform listing for the Necanicum River. The TMDL determined that the bacteria limits listed at OAR 340-041-0009(6)(b) for discharges into freshwaters (e.g., meeting a monthly geometric mean of 126 *E. coli* per 100 mL, with no single sample exceeding 406 *E. coli* per 100 mL) will be protective of shellfish harvest in the Necanicum Estuary and water contact recreation. No additional limitations are required of the facility. Refer to Section 3.3.8 for additional discussion on proposed bacteria limits.

3.3.4 Pollutants of Concern

To ensure that a permit is protecting water quality, DEQ must identify pollutants of concern. These are pollutants that are expected to be present in the effluent at concentrations that could adversely impact water quality. DEQ uses the following information to identify pollutants of concern:

- Effluent monitoring data.
- Knowledge about the permittee's processes.
- Knowledge about the receiving stream water quality.
- Pollutants identified by applicable federal effluent limitation guidelines.

Based on EPA's NPDES permit application requirements, toxic pollutants of concern for domestic facilities are listed in the following table.

Table 3-6: Domestic Toxic Pollutants of Concern

Flow Rate	Pollutants
< 0.1 mgd	Total Residual Chlorine
> 0.1 mgd and < 1.0 mgd	Total Residual Chlorine, Total Ammonia Nitrogen
> 1.0 mgd	Total Residual Chlorine, Total Ammonia Nitrogen, Metals, Volatile Organic Compounds, Acid Extractable Compounds, Base Neutral Compounds

DEQ identified the following pollutants of concern for this facility listed in the following table.

Table 3-7: Pollutants of Concern

Pollutant	How was pollutant identified?
pH	Effluent Monitoring
Temperature	Effluent Monitoring
E. coli	Effluent Monitoring
Total Residual Chlorine	Effluent Monitoring
Total Ammonia Nitrogen	Effluent Monitoring
Metals	Application Requirement
Volatile Organic Compounds	Application Requirement
Acid Extractable Compounds	Application Requirement
Base-Neutral Compounds	Application Requirement

The sections below discuss the analyses that were conducted for the pollutants of concern to determine if water quality-based effluent limits are needed to meet water quality standards.

3.3.5 Regulatory Mixing Zone

The proposed permit contains a mixing zone as allowed per OAR 340-041-0053. The proposed mixing zone remains unchanged from the existing permit and is described as follows:

The regulatory mixing zone is defined as that portion of the Necanicum River encompassing the following area: 150 upstream and downstream of the outfall diffuser and 15 feet inshore and 25 feet off shore of each diffuser edge. The zone of initial dilution is that portion of the allowable regulatory mixing zone that is within 15 feet of the diffuser.

The dilutions at the edge of the zone of initial dilution and mixing zone are shown in the table below. These dilutions are based on a 2012 mixing zone study submitted by the permittee and reviewed by DEQ. These dilutions are the reasonable, worst-case dilutions that are expected to occur over the course of a tidal cycle. Schedule D of the permit requires the permittee to submit an updated mixing zone study during the next permit cycle.

Table 3-8: Outfall 001A Dilution Summary

Dilution Summary – Year-Round						
Water Quality Standard	Velocity Percentile		Effluent Flow (mgd)		Dilution	Location
	Statistic	Ft/s	Statistic	Flow		
Aquatic Life, Acute	10th	0.26	☐ ADWDF x PF ☒ Max Daily Avg ☐ Other	1.8	10	ZID
Aquatic Life, Chronic	50th	1.3	☒ ADWDF ☐ Max Monthly Avg ☐ Other	1.6	26	MZ
Human Health, Non-Carcinogen	50th	1.3	☐ ADWDF ☐ Max Monthly Avg ☒ Other Monthly Annual Max	1.8	31	MZ
Human Health, Carcinogen	50th	1.3	☐ Annual Avg Design ☒ Annual Avg ☐ Other	1.8	31	MZ
ADWDF = Average dry weather design flow *PF = Peaking factor*						

3.3.6 pH

The pH criterion for this basin is 6.5 – 8.5 for both estuarine and freshwater per OAR 340-041-0235. The federal secondary treatment standards allow the permittee to discharge effluent with a pH between 6.0 and 9.0. This pH range was utilized in a reasonable potential analysis along with effluent data collected from January 2019 to April 2023. Ambient pH data used in the analysis was collected from May 2013 to December 2013 from a DEQ monitoring station on the Necanicum River. DEQ also used ambient temperature data collected by the permittee just upstream of the facility from June 2022 to July 2023. The facility is located on the Lower Necanicum River in which flows are tidally influenced. Conductivity data from the area indicated that the 90th percentile of salinity is above 10 PSU. Therefore, the RPA for pH was conducted under saltwater receiving stream conditions.

DEQ determined there is no reasonable potential for the discharge to exceed the pH criterion at the edge of the mixing zone. As such, the proposed permit will retain the existing permit limit of 6.0 – 9.0 for pH. These limits are considered to be TBELs. The following tables provides a summary of the data used for the analysis.

Table 3-9: pH Reasonable Potential Analysis (Saltwater)

INPUT	Lower pH Criteria	Upper pH Criteria
1. Dilution at mixing zone boundary	26	26
2. Upstream characteristics		
a. Temperature (deg C)	20.4	11.5
b. pH	7.2	8.0
c. Alkalinity (mg CaCO3/L)	17.8	17.8
3. Effluent characteristics		
a. Temperature (° C)	21.3	11.9
b. pH (S.U.)	6.0	9.0
c. Alkalinity (mg CaCO3/L)	71.8	71.8
4. Applicable pH criteria	6.5	8.5
pH at mixing zone boundary	**6.6**	**8.2**
Is there reasonable potential?	**No**	**No**
Proposed effluent limits	**6.0**	**9.0**
Effluent data source: Discharge Monitoring Reports from January 2019 to April 2023.		
Ambient data source: AWQMS - DEQ Monitoring Station 13654 (Necanicum River at 12th Street Approach/Bridge) from May 2013 to December 2013. City of Seaside ambient temperature monitoring June - November 2022 and April - July 2023 at 12th Street Bridge.		

3.3.7 Temperature

3.3.7.1 Temperature Criteria OAR 340-041-0028

The following table summarizes the temperature criteria that apply at the discharge location along with whether the receiving stream is water quality-limited for temperature and whether a TMDL wasteload allocation has been assigned. Using this information, DEQ performed several analyses to determine if effluent limits were needed to comply with the temperature criteria.

Table 3-10: Temperature Criteria Information

Applicable Temperature Criterion	Rearing/Migration 18ºC (OAR 340-041-0028(4)(c)
Applicable dates: Year-Round	
Salmon/Steelhead Spawning 13 °C? OAR 340-041-0028(4)(a)	☐Yes ☒No
Applicable dates: N/A	
WQ-limited?	☐Yes ☒No
TMDL wasteload allocation assigned?	☐Yes ☒No
Applicable dates: N/A	
TMDL based on natural conditions criterion?	☐Yes ☒No
Cold water summer protection criterion applies?	☐Yes ☒No
Cold water spawning protection applies?	☐Yes ☒No
Comments:	

As noted above and in Section 3.5, the Necanicum River is not listed as water quality limited for temperature. In 2003, DEQ issued the North Coast Subbasins TMDL to address a temperature impairment.[2] The TMDL identified the City of Seaside as a point source that discharges to estuarine waters and stated that "(f)acilities that discharge into estuarine waters are required to meet a different standard for temperature. These facilities discharge to waterbodies that are not listed as water quality limited, and do not receive an allocation in the TMDL" and "These sources are regulated under a standard requiring no significant increase over background temperature." [3] Since the issuance of the TMDL, this portion of the temperature standard has been modified to address "oceans and bays" (as opposed to "estuarine waters"). To ensure that the proposed permit is consistent with the assumptions and requirements of the TMDL, an analysis was performed to determine if the discharge from meets this portion of the rule (OAR 340-041-0028(7)). In addition, DEQ also performed an analysis to ensure the discharge meets the salmon and steelhead rearing/migration criteria for the receiving water. The results of these analyses are discussed below.

[2] An addendum that was completed for this TMDL in November 2006 did not modify the analysis or conclusions related to this facility.

[3] North Coast Subbasins Total Maximum Daily Load (TMDL). Prepared by Oregon Department of Environmental Quality. Page 56 and Table 13 on page 57. June 2003.

3.3.7.2 Reasonable Potential Analysis for Temperature

DEQ conducted an analysis to determine if the Seaside WTP effluent temperatures are consistent with the requirements of the TMDL. As indicated above, this equates to performing an analysis against the criterion listed at OAR 340-041-0028(7) (Oceans and Bays). The analysis was conducted for both the high stream flow (winter) period from November 1 to April 30 and the low stream flow (summer) period of May 1 to October 31. The analysis used effluent data from January 2019 – October 2023 and ambient temperature data collected by the permittee just upstream of the facility in 2022 and 2023. The maximum seven-day average effluent temperature and the lowest seven-day average ambient river temperatures recorded during both the high and low streamflow periods were used in the analysis.

The results indicate that, during critical conditions, the Seaside WTP discharge complies with the criterion and will not result in a greater than 0.3 °C increase over natural background conditions. A summary of this analysis is presented in Appendix B: Attachments B-1 and B-2.

DEQ also conducted an analysis to determine if the applicable criterion listed at OAR 340-041-0028 (4)(c) will be met. This analysis used the maximum recorded effluent temperature from January 2019 – October 2023 (23.3 ºC) and applied the 18 ºC criterion. The maximum effluent temperatures for the Seaside WTP typically occur during the mid to late summer low stream flow critical period. During the remainder of the year, effluent temperatures are generally much lower than 18 ºC. The results of these analyses indicate that the Seaside WTP discharge has no potential to exceed the temperature standard (See Appendix B: Attachment B-3)

Based on these analyses, no temperature limit associated with the applicable temperature criteria is included in the proposed permit.

3.3.7.3 Thermal Plume OAR 340-041-0053(2)(d)

In addition to compliance with the temperature criteria, OAR 340-041-0053(2)(d) contains thermal plume limitation provisions designed to prevent or minimize adverse effects to salmonids that may result from thermal plumes. The discharge was evaluated for compliance with these provisions as follows:

- OAR 340-041-0053(2)(d)(A): Impairment of an active salmonid spawning area where spawning redds are located or likely to be located. This adverse effect is prevented or minimized by limiting potential fish exposure to temperatures of 13 ºC or more for salmon and steelhead, and 9 ºC or more for bull trout.

  Seaside WTP Discharge: Based on the North Coast Basin fish use and salmonid spawning use maps contained in OAR 340-041 (Figures 230A and 230B, respectively), the designated fish use for this segment of the Necanicum River is salmon and trout rearing & migration (year-round) and no spawning use. Therefore, the discharge will not cause impairment of an active salmonid spawning area.

- OAR 340-041-0053(2)(d)(B): Acute impairment or instantaneous lethality is prevented or minimized by limiting potential fish exposure to temperatures of 32 ºC or more to less than 2 seconds.

Seaside WTP Discharge: Based on a review of January 2019 to October 2023 effluent data, the maximum effluent temperature at Outfall 001 was 23.3 ºC in June 2021. Thus, anticipated peak temperatures are expected to be well below 32 ºC and are not expected to cause an acute impairment or instantaneous lethality due to the thermal plume.

- OAR 340-041-0053(2)(d)(C): Thermal shock caused by a sudden increase in water temperature is prevented or minimized by limiting potential fish exposure to temperatures of 25 ºC or more to less than 5% of the cross-section of 100% of the 7Q10 flow of the water body.

  Seaside WTP Discharge: Based on a review of January 2019 to August 2023 effluent data, the maximum effluent temperature at Outfall 001A was 23.3 ºC in June 2021. Thus, anticipated peak temperatures are expected to be below 25 ºC which will prevent or minimize thermal shock due to the thermal plume.

- OAR 340-041-0053(2)(d)(D): Unless ambient temperature is 21 ºC or greater, migration blockage is prevented or minimized by limiting potential fish exposure to temperatures of 21 ºC or more to less than 25% of the cross-section of 100% of the 7Q10 flow of the water body.

  Seaside WTP Discharge: The migration rule is based primarily on the USEPA guidance document, *EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards* (April 2003) [4]. Section V.3 of the document gives guidance on protecting salmonids from thermal plume impacts and provides this discussion on migration blockage:

  Adult migration blockage conditions can occur at 21 °C. Therefore, EPA suggests that the cross-sectional area of a river at or above 21 °C be limited to less than 25% or, if upstream temperature exceeds 21 °C, the thermal plume be limited such that 75% of the cross-sectional area of the river has less than a de minimis (e.g., 0.25°C) temperature increase.

  DEQ considers a de minimis temperature increase to be 0.3 °C or less (see DEQ's *Temperature Water Quality Standard Implementation – A DEQ Internal Management Directive*, April 2008). The maximum 7-day average ambient temperature recorded upstream of the discharge location is 20.9 °C recorded in August 2022 (data from 2022 and 2023). An analysis related to migration blockage indicates that when the receiving water temperature is 20.9 °C and effluent temperature is at the maximum recorded 7-day average value of 22.7 ºC (recorded in August 2022 and 2023), the effluent plume, when it reaches 25% of the receiving stream's cross-sectional area, will be 21.23 ºC (See Appendix B: Attachment B-4). This 0.23 ºC over the upstream temperature is considered a de minimis increase that prevents or minimizes migration blockage. In addition, the maximum effluent temperatures used in the analysis were recorded in August - before the

[4] U.S. Environmental Protection Agency. 2003. EPA *Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards*. EPA 910-B-03-002. Region 10 Office of Water, Seattle. WA. Pages 33 -34.

peak fall migration period for fish in this portion of the Necanicum River (October through December). Fish migrating past the facility during the fall migration season are exposed to cooler effluent temperatures which further minimizes and reduces fish migration blockage.

Based upon the analysis presented above, the proposed permit will not require a limit for temperature. However, additional ambient river data is necessary to support future analysis. As such, the proposed permit will include a requirement for continued daily monitoring of ambient river conditions at a location upstream of the Outfall 001A. The daily monitoring of ambient river conditions will begin within one year of the effective date of the permit and must be conducted outside of the influence of the effluent plume. The 12th Avenue Approach Bridge over the Necanicum River is a possible location for ambient river monitoring.

3.3.8 Bacteria

Based upon Water Contact Recreation Designated Use Maps contained in OAR 340-041-0230 (Figure 230C), the portion of the Necanicum River the permittee discharges into is designated as Coastal Contact Recreation. OAR 340-041-0009(6)(a) requires discharges of bacteria into coastal waters meet a monthly geometric mean of 35 enterococcus organisms per 100 mL, with no more than 10 percent of samples exceeding 130 enterococcus organisms per 100 mL. The following table includes the proposed permit limits and apply year-round.

Table 3-11: Proposed Enterococcus Limits

Enterococcus (#/100 ml)	Geometric Mean	No more than 10% exceed
Existing Limit	NA	NA
Proposed Limit	35	130

The North Coast Subbasins TMDL contains a WLA for *E. coli* of a monthly geometric mean of 126 *E. coli* per 100 mL, with no single sample exceeding 406 *E. coli* per 100 mL. If a single sample exceeds 406 *E. coli* per 100 mL, then the permittee may take five consecutive re-samples. If the geometric mean of the five re-samples is less than or equal to 126, a violation is not triggered. The re-sampling must be taken at four-hour intervals beginning within 28 hours after the original sample was taken. The following table includes the proposed permit limits and apply year-round. This WLA is considered protective of the shellfish beneficial use according to the TMDL.

Table 3-12: Proposed *E. coli* Limits

E. coli (#/100 ml)	Geometric Mean	Maximum
Existing Limit	126	406
Proposed Limit	126	406

3.3.9 Toxic Pollutants

DEQ typically performs the reasonable potential analysis for toxics according to EPA guidance provided in the Technical Support Document for Water Quality-Based Toxics Control (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991). The factors incorporated into this analysis include:

1. Effluent concentrations and variability
2. Water quality criteria for aquatic life and human health
3. Receiving water concentrations
4. Receiving water dilution (if applicable)

DEQ performs these analyses using spreadsheets that incorporate EPA's statistical methodology. The following sections describe the analyses for various toxic pollutants below.

3.3.9.1 Total Ammonia Nitrogen

DEQ's ammonia criteria vary with changes in pH and temperature. DEQ performed a reasonable potential analysis that accounts for changes in the effluent and receiving water pH and temperature to determine the appropriate ammonia criteria. Since conductivity data from the area indicated that the 90th percentile of salinity is above 10 PSU the RPA for ammonia was conducted under saltwater discharge conditions.

The analysis used effluent data reported through the facility's discharge monitoring reports from January 2019 through April 2023. Ambient river data was obtained from a DEQ monitoring station located on the Necanicum River and from sampling conducted by the permittee upstream of the facility.

The results of the analysis indicated that there is no reasonable potential to exceed water quality standards for ammonia during dry (May 1 – October 31) or wet (November 1 to April 30) season discharges. No ammonia limit is necessary with the permit renewal. However, ammonia monitoring will be conducted year-round in the next permit renewal.

The following tables provides a summary of the data used for the ammonia analysis and the results of the analysis:

Table 3-13: Ammonia Analysis Information (Saltwater – Summer)

	Acute	Chronic	
		4-day	30-day
Dilution	10	26	31
Ammonia Criteria	5.2	0.8	--
Effluent Data Used			
Ammonia (mg/L)	18.2	18.2	
pH (SU)	7.4	7.4	
Temperature (ºC)	21.9	21.9	
Alkalinity (mg/L CaCO3)	22.6	22.6	
Receiving Stream Data Used			
Ammonia (mg/L)	0.1	0.1	
pH (SU)	8.0	8.0	
Temperature (ºC)	20.3	20.3	
Alkalinity (mg/L CaCO3)	79.0	79.0	
Ammonia Limit Needed?	**No**		
Calculated Limits	AML	MDL	
Ammonia (mg/L)	N/A	N/A	
Effluent data source			
Discharge Monitoring Reports from May through October for the years of 2020 through 2023.			
Ambient data source			
WQMS - DEQ Monitoring Station 13654 (Necanicum River at 12th Street Approach/Bridge) from May 2013 to December 2013. City of Seaside ambient temperature monitoring June - November 2022 and April -July 2023 at 12th Street Bridge.			

Table 3-14: Ammonia Analysis Information – (Saltwater – Winter)

	Acute	Chronic	
		4-day	30-day
Dilution	10	26	31
Ammonia Criteria	48.0	8.5	--
Effluent Data Used			
Ammonia (mg/L)	25.0	25.0	
pH (SU)	7.5	7.5	
Temperature (ºC)	15.3	15.3	
Alkalinity (mg/L CaCO3)	69.0	69.0	
Receiving Stream Data Used			
Ammonia (mg/L)	0.0	0.0	
pH (SU)	7.2	7.2	
Temperature (ºC)	11.3	11.3	
Alkalinity (mg/L CaCO3)	11.0	11.0	
Ammonia Limit Needed?	**No**		
Calculated Limits	AML	MDL	
Ammonia (mg/L)	N/A	N/A	
Effluent data source			
Discharge Monitoring Reports from January 2019 to April 2023.			
Ambient data source			
WQMS - DEQ Monitoring Station 13654 (Necanicum River at 12th Street Approach/Bridge) from May 2013 to December 2013. City of Seaside ambient temperature monitoring June - November 2022 and April -July 2023 at 12th Street Bridge.			

3.3.9.2 Priority Pollutant Toxics

DEQ conducted a reasonable potential analysis for the group of toxics listed in the following table.

Table 3-15: Toxic Pollutants Analyzed

Toxic Group
Metals
Volatile Organic Compounds
Acid Extractable Compounds
Base-Neutral Compounds
Pesticides
Effluent data source: Seaside STP
Receiving water data source: DEQ Monitoring Station No. 13645 (Necanicum River at 12 Street Approach/Bridge)

The RPA used the results of effluent monitoring for toxic substances that was conducted by the permittee from March 2022 through November 2022. The effluent monitoring data was obtained from the permittee's contract laboratory in an electronic data delivery format and supported by a review of the analytical lab reports summarizing the results of the effluent monitoring. The monitoring for toxic substances included both wet and dry discharge seasons. Since conductivity data from the area indicated that the 90th percentile of salinity is above 10 PSU, the RPA was conducted under saltwater discharge conditions. The flows and dilutions used in the analysis are presented on Table 3-8. A summary discussion on the results of the RPA relative to toxic metals and organics is presented below:

Metals - The RPA analysis was conducted for priority pollutant metals for both the aquatic life and human health criteria. The aquatic toxicity saltwater RPA analysis identified copper and zinc as potential pollutants of concern at the end-of-pipe discharge (with no consideration for in-stream dilution). The human health saltwater RPA identified arsenic as a potential pollutant of concern for end-of-pipe discharges.

When the ambient concentrations for pollutants of concern and dilution values were entered into the analysis, the completed RPAs indicated that there was "no reasonable potential" for the identified pollutants of concern to cause aquatic toxicity or exceed human health criteria at the edge of mixing zones or zones of initial dilution. Therefore, the proposed permit will not require limits for priority pollutant metals.

Priority Pollutant Organics – The Seaside STP conducts monitoring for volatile organic, acid extractable and base neutral compounds. The human health RPA identified several acid-extractable and base-neutral compounds as potential pollutants of concern for end-of-pipe discharges. However, when ambient concentrations and dilution values were entered into the analysis, the RPA did not result in any priority pollutant organics exceeding water quality standards either at the end of the regulatory mixing zones. As such, the permit will not require limits for these parameters.

3.3.9.3 Mercury – Human Health Criterion

Oregon's human health water quality criterion for mercury is expressed in terms of a fish tissue concentration rather than a water column concentration. Because of this, DEQ's approach to performing the reasonable potential analysis for mercury is different from that for other parameters. This approach is described in DEQ's "Implementation of Methylmercury in NPDES Permits" internal management directive.

According to the IMD, "Any facility contributing significant and consistent concentrations of total mercury to the receiving water body is considered to have the reasonable potential to exceed the water quality criterion unless a site-specific survey determines otherwise." Because the water quality criterion for mercury is a fish tissue-based concentration rather than a water column concentration, permit limits for mercury cannot be expressed in terms of a concentration. Therefore, when mercury is present in treated effluent on a consistent basis, the permit needs to contain mercury monitoring, plus a narrative effluent limit that consists of a Mercury Minimization Plan (MMP).

A review of effluent monitoring data indicates that total mercury is present in the discharge and therefore there is a reasonable potential to cause or contribute to the exceedance of the water quality standard. Accordingly, the proposed permit requires the facility to monitor for mercury (in Schedule B) and develop and implement a mercury minimization plan. This requirement is contained in Schedule A of the permit. Once the plan it submitted to DEQ for review, it must go on public notice for public review and is incorporated into the permit by reference.

This permittee recently developed a Mercury Minimization Plan and this plan is available for public comment along with the proposed permit. The permittee will implement the plan once the new permit is issued. Therefore, the proposed permit includes a requirement (in Schedule A) for the permittee to review and update the Mercury Minimization Plan during the last year of the permit cycle, and to submit the revisions with their next permit application. The proposed permit also includes (in Schedule B) monitoring associated with the Mercury Minimization Plan.

3.4 Antibacksliding

The proposed permit complies with the antibacksliding provisions of CWA sections 402(o) and 303(d)(4) and 40 CFR 122.44(l). The proposed limits are the same or more stringent than the existing permit so the antibacksliding provision is satisfied.

3.5 Antidegradation

DEQ must ensure the permit complies with Oregon's antidegradation policy found in OAR 340-041-0004. This policy is designed to protect water quality by limiting unnecessary degradation from new or increased sources of pollution.

DEQ has performed an antidegradation review for this discharge. The proposed permit contains the same or more stringent discharge loadings as the existing permit. Permit renewals with the same or more stringent discharge loadings as the previous permit are not considered to lower water quality from the existing condition. DEQ is not aware of any information that existing limits are not protecting the receiving stream's designated beneficial uses. DEQ is also not aware of any existing uses present within the water body that are not currently protected by standards developed to protect the designated uses. Therefore, DEQ has determined that the proposed discharge complies with DEQ's antidegradation policy. DEQ's antidegradation worksheet for this permit renewal is available upon request.

3.6 Whole Effluent Toxicity

Whole effluent toxicity (WET) tests are used to determine the treated wastewater's aggregate toxic effect on aquatic organisms. Wastewater samples are collected, and aquatic organisms are subjected to a range of concentrations in controlled laboratory experiments. EPA recommends that WET tests be used in NPDES permits together with requirements based on chemical-specific water quality criteria.

WET tests are used to determine the percentage of effluent that produces an adverse effect on a group of test organisms. The measured effect may be fertilization, growth, reproduction, or survival. EPA's methodology includes both an acute test and a chronic test. An acute WET test is considered to show toxicity if adverse effects occur at effluent concentrations less than what is found at the edge of the zone of immediate dilution (ZID). A chronic WET test is considered to show toxicity if adverse effects occur at effluent concentration less than what is known to occur at the edge of the mixing zone.

3.7 Groundwater

No groundwater concerns have been identified in association with this facility. All treatment operations occur in water-tight basins and the liquid storage of stabilized biosolids occurs in sealed tanks and digesters. The treatment facility does not have the potential to leach into the groundwater. No groundwater monitoring or limits are required.

4. Schedule A: Other Limitations

4.1 Mixing Zone

Schedule A describes the regulatory mixing zone as discussed above in Section 3.

4.2 Biosolids

The permittee currently produces Class A and B biosolids for beneficial land application and this permit allows the facility to continue to produce these types of biosolids. DEQ reviewed and approved a 2017 biosolids management plan and land application plan. The permittee is required to update these plans during the next permit term (Schedule D). DEQ will review the plans and provide an opportunity for public comment on the proposed land application activity. Once

approved, conditions in the biosolids management plan and land application plan will become permit conditions.

Schedule A of the permit requires the facility to apply biosolids according to their biosolids management plan. In addition, Schedule A requires the following:

- Apply at or below agronomic rates and in accordance with best management practices where exceptional quality biosolids are land applied.
- The permittee must have written site authorization for each location from DEQ before land applying and abide by the restrictions for each site. For exceptional quality biosolids, these biosolids may be land applied as any other fertilizer or soil amendment to any type of land.
- Prior to application, the permittee must ensure that biosolids meet one of the pathogen reduction standards under 40 CFR 503.32 and one of the vector attraction reduction standards under 40 CFR 503.33. For exceptional quality biosolids, the biosolids must meet one of the Class A pathogen reduction requirements in 40 CFR 503.32(a) and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (b)(8) prior to land application.
- The permittee must not apply biosolids containing pollutants in excess of any one of the ceiling concentrations for the nine metals shown in Schedule A of the permit. For biosolids to be managed as exceptional quality biosolids, the biosolids must also not exceed any of the pollutant concentrations shown in Schedule A of the permit.

4.3 Recycled Water or Irrigation of Industrial Wastewater

The permittee does not currently operate a recycled water program but may develop one during the term of this permit. If the permit holder chooses to develop a recycled water program, a comprehensive recycled water use plan meeting the requirements in OAR 340-055 will be submitted to DEQ for review and approval; appropriate actions must also be made to OHA and WRD. The recycled water use plan, including the locations of any proposed irrigation projects will be made available for public comment.

Schedule A of the permit requires the permittee to apply recycled water according to their recycled water use plan. Schedule A also restricts the application of recycled water to prevent the following:

- Irrigating above agronomic rates,
- Adverse impact to groundwater,
- Offsite surface runoff or subsurface drainage through drainage tile, and
- Creation of odors, fly and mosquito breeding, or other nuisance conditions.

4.4 Chlorine Usage

Schedule A of the permit prohibits the permittee from using chlorine or chlorine compounds for effluent disinfection purposes.

5. Schedule B: Monitoring and Reporting Requirements

Schedule B of the permit describes the minimum monitoring and reporting necessary to demonstrate compliance with the proposed effluent limits. In addition, monitoring for other parameters is required to better characterize the effluent quality and the receiving stream. This data will be used during the next permit renewal. Detailed monitoring frequency and reporting requirements are in Schedule B of the proposed permit. The required monitoring, reporting and frequency for many of the parameters are based on DEQ's monitoring and reporting matrix guidelines, permit writer judgment, and to ensure the needed data is available for the next permit renewal.

6. Schedule C: Compliance Schedule

The permittee is expected to meet all effluent limits once the permit becomes effective and therefore a compliance schedule is not needed.

7. Schedule D: Special Conditions

The proposed permit contains the following special conditions. The conditions include the following:

7.1 Inflow and Infiltration

A requirement to submit an updated inflow and infiltration report in order to reduce groundwater and stormwater from entering the collection system.

7.2 Mixing Zone Study

A requirement to submit an updated mixing zone study.

7.3 Emergency Response and Public Notification Plan

A requirement to develop and submit an emergency and spill response plan or ensure the existing one is current per General Condition B.8 in Schedule F.

7.4 Recycled Water Use Plan

A condition requiring the permit holder to develop and maintain a recycled water use plan that meet the requirements in OAR 340-055-0025. The plan must also include location-specific information describing where and how recycled water is managed to protect public health and the environment.

7.5 Exempt Wastewater Reuse at the Treatment System

A condition that exempts the permittee from the recycled water requirements in OAR 340-055, when recycled water is used for landscape irrigation at the treatment facility or for in-plant processes, such as in plant maintenance activities.

7.6 Biosolids Management Plan

A requirement to manage all biosolids in accordance with a DEQ-approved biosolids management plan and land application plan. The biosolids management plan and the land application plan must meet the requirements in OAR 340-050-0031 and describe where and how the land application of biosolids is managed to protect public health and the environment.

This condition also requires the permittee to submit a Biosolids Annual Report each year documenting the production, use, disposal, or storage of facility biosolids. This report must be submitted to DEQ by February 19 of each year and cover facility activities during the previous calendar year.

7.7 Wastewater Solids Transfers

A condition that allows the facility to transfer treated or untreated wastewater solids to other in-state or out-of-state facilities that are permitted to accept the wastewater solids.

7.8 Hauled Waste Control Plan

A condition that allows the acceptance of hauled waste according to a DEQ-approved hauled waste plan. The hauled waste plan ensures waste is not accepted that could negatively impact the treatment capabilities of the facility.

7.9 Hauled Waste Annual Report

A condition requiring submittal of an annual hauled waste report that summarizes hauled waste accepted at the facility during the previous year.

7.10 Whole Effluent Toxicity Testing for Saltwater

The permittee is required to perform WET testing to ensure the aggregate of toxics is not negatively impacting aquatic life. This condition describes the test procedures and requirement for the WET testing. A dilution series has been specified on the basis of the mixing zone analysis.

7.11 Operator Certification

The permit holder is required to have a certified operator consistent with the size and type of treatment plant covered by the permit per OAR 340-049-0005. This special condition describes the requirements relating to operator certification.

7.12 Industrial User Survey

This condition requires the permittee to conduct an industrial user survey. The purpose of the survey is to identify whether there are any categorical industrial users discharging to the POTW, and ensure regulatory oversight of these discharges.

7.13 Outfall Inspection

A condition that requires the permittee to inspect the outfall and submit a report regarding its condition.

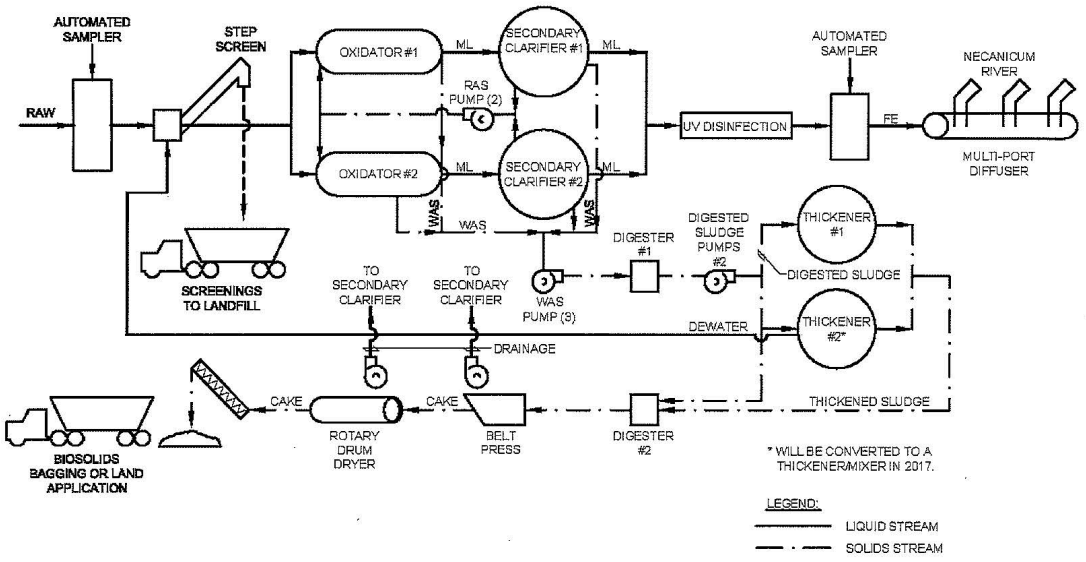
8. Schedule F: NPDES General Conditions

Schedule F contains the following general conditions that apply to all NPDES permittees. These conditions are reviewed by EPA on a regular basis.

- Section A. Standard Conditions
- Section B. Operation and Maintenance of Pollution Controls
- Section C. Monitoring and Records
- Section D. Reporting Requirements
- Section E. Definitions

Appendix A: Facility Flow Schematic

APPENIX A: Liquids and Solids Process Flow Schematic



Appendix B: Temperature Reasonable Potential Analysis

Attachment B-1: Discharge to Natural Lakes and Oceans/Bays (Summer)

Discharge to Natural Lakes (OAR 340-041-0028(6)) and Ocean/Bays (OAR 340-041-0028(7))
Analysis at Edge of Mixing Zone
Section 5.7 of the Temperature IMD

Note: This spreadsheet is generally only appropriate for analyses of effluent from minor domestic facilities. For other facilities, an analysis using paired seasonal ambient and effluent data is more appropriate.

Facility Name: City of Seaside STP **Date: December 7, 2023**

Enter data into white cells below:

			Data Metric/Source
Mixing Zone Dilution =	26		Mixing Zone Dilution from MZ study
Ambient Temperature =	15.1	°C	Lowest 7dMA ambient temp summer season 2022 and 2023 - early to mid Sept. 2022
Effluent Temperature =	22.7	°C	Max. 7dMA effluent temps 2019-2023 - late August - early Sept. 2022.
Allowable Increase =	0.3	°C	MMax. 7dMA effluent temps - late August -early Sept. 2022.
Effluent Flow =	1.8	mgd	

ΔT at MZ edge=	**0.29**	**°C**	**No Reasonable Potential**

Thermal Load Limit =	**N/A**	**Million Kcals**

Note: If Reasonable Potential is indicated, use a more refined analysis (e.g. paired temperature analysis) to make the final RP determination.

Equation used to calculate ΔT at edge of MZ

$$\Delta T_{mz} = \frac{T_e + (S-1)T_a}{S} - T_a$$

Equation used to calculate thermal load limit

$$TLL = 3.7854 Q_e S \Delta T_{all} C_p \rho$$

Where:

Qe = Effluent Flow in mgd
S = Dilution
ΔT_{all} = Allowable temperature increase at edge of MZ (°C)
Cp = Specific Heat of Water (1 cal/g °C)
ρ = Density of Water (1 g/cm^3)
3785.41 = Flow conversion from mgd to m^3/day

Discharge to Natural Lakes (OAR 340-041-0028(6)) and Ocean/Bays (OAR 340-041-0028(7))

Analysis at Edge of Mixing Zone

Section 5.7 of the Temperature IMD

Note: This spreadsheet is generally only appropriate for analyses of effluent from minor domestic facilities. For other facilities, an analysis using paired seasonal ambient and effluent data is more appropriate.

Facility Name: City of Seaside WTP **Date:** 12/7/2023

Enter data into white cells below:			Data Metric/Source
Mixing Zone Dilution =	26		Mixing Zone Dilution from MZ study
Ambient Temperature =	7.8	°C	Lowest 7dMA ambient temp for winter-mid November 2022
Effluent Temperature =	15.5	°C	Max. 7dMA effluent temps for winter -mid November 2020. Max for Nov. 2022 15.4 C
Allowable Increase =	0.3	°C	Max. wet weather design flow.
Effluent Flow =	2.25	mgd	

ΔT at MZ edge=	0.30 °C	No Reasonable Potential

Thermal Load Limit =	N/A	Million Kcals

Note: If Reasonable Potential is indicated, use a more refined analysis (e.g. paired temperature analysis) to make the final RP determination.

Equation used to calculate ΔT at edge of MZ

$$\Delta T_{mz} = \frac{T_e + (S-1)T_a}{S} - T_a$$

Equation used to calculate thermal load limit

$$TLL = 3.7854 Q_e S \Delta T_{all} C_p \rho$$

Where:

Qe = Effluent Flow in mgd

S = Dilution

ΔT_{all} = Allowable temperature increase at edge of MZ (°C)

Cp = Specific Heat of Water (1 cal/g °C)

ρ = Density of Water (1 g/cm^3)

3785.41 = Flow conversion from mgd to m^3/day

Stream Meets Water Quality Criterion (OAR 340-041-0028(4))

For situations where the criterion is met (the waterbody is not listed as impaired for temperature) - Analysis at Edge of Mixing Zone
Section 5.4 of the Temperature IMD

Facility Name: City of Seaside WTP **Date:** 11/28/2023
Applicable Criterion and Season: **Salmon/Steelhead Rearing and Migration 18ºC - Year Round**

Enter data into white cells below:			Data Metric/Source
Mixing Zone Dilution =	26		Mixing Zone Dilution from MZ study
Ambient Temperature =	17.9	ºC	Ambient temp set below criteria for conservative analysis. Max. 7dMA river temp is 20.9C in July 2022 from permittee 2022-2023 river temp data.
Effluent Temperature =	23.3	ºC	Used max. effluent temp recorded from Jan. 2019 - October 2023 for conservative analysis. Higher than 7dMA.
Applicable Temperature Criterion =	18	ºC	
Effluent Flow =	1.8	mgd	Max. dry weather design flow. Avg. dry season flows 2018-2022: 1.2 MGD.

ΔT at MZ edge=	**0.2**	**ºC**	**No Reasonable Potential**
Temperature at MZ edge=	**18.1**	**ºC**	

Thermal Load Limit = N/A Million Kcals (7-day Rolling Avg.)
(relative to the ambient temperature used above)

Equation used to calculate ΔT at edge of MZ

$$\Delta T_{mz} = \frac{T_e + (S-1)T_a}{S} - T_a$$

Equation used to calculate thermal load limit

$$TLL = 3.7854 Q_e S \Delta T_{all} C_p \rho$$

Where:

- Qe = Effluent Flow in mgd
- S = Dilution
- ΔT_{all} = Allowable temperature increase at edge of MZ (°C)
- Cp = Specific Heat of Water (1 cal/g °C)
- ρ = Density of Water (1 g/cm^3)
- 3785.41 = Flow conversion from mgd to m^3/day

Temperature Thermal Plume Limitations within the Mixing Zone Rule (OAR 340-041-0053(2)(d))

Sections 5.6 and 6.5 of Temperature IMD

This rule only applies to receiving streams with salmonid uses. For migration blockage, applies to upstream migration of anadromous salmonits (See associated notes in the "Thermal Plumes Instructions".) This spreadsheet assesses compliance with OAR 340-042-0053(2)(d) subparts C and D. Subparts A and B need to be assessed separately (see Thermal Plumes Instructions).

Facility Name: City of Seaside **Date: November 28, 2023**

OAR 340-041-0053(2)(d)(C): Thermal Shock
25 deg C at 5% of the stream cross section

Enter data into white cells below:			Data Metric/Source
7Q10 =		cfs	
Ambient Temperature=		ºC	
Effluent Flow =		mgd	
Max Daily Effluent Temperature =		ºC	

5% of 7Q10 = **0.0** cfs
5% dilution = **#DIV/0!** dilution = (Qr*0.05)/Qe + 1

Temperature at 5% cross section =	**#DIV/0!**	**ºC**	**#DIV/0!**

OAR 340-041-0053(2)(d)(D): Migration Blockage
21 deg C at 25% of the stream cross section

Enter data into white cells below:			Data Metric/Source
7Q10 =	50	cfs	From Mixing Zone Memo
Ambient Temperature =	20.9	ºC	Max. 7dMA of river temps August 2022
Effluent Flow =	1.8	mgd	Maximum daily average from MZ Study
Max 7dAM Effluent Temperature =	22.7	ºC	Max. 7dMA of effluent temps from August 2022 and 2023

25% of 7Q10 = **12.5** cfs
25% dilution = **5** dilution = (Qr*0.25)/Qe + 1

Temperature at 25% cross section =	**21.2**	**ºC**	
ΔT at 25% Stream Flow=	**0.3**	**ºC**	**No Reasonable Potential**

Notes: