State of Oregon
Department of
Environmental
Quality

National Pollutant Discharge Elimination System
Permit Fact Sheet
Hebo Joint Water & Sanitary Authority

Final: August 16, 2024

Permittee	Hebo Joint Water & Sanitary Authority Hebo JWSA 30960 Hwy 101 South Hebo, OR 97122
Existing Permit Information	File Number: 100058 Permit Number: 101524 EPA Reference Number: OR0031461 Category: Domestic Class: Minor Expiration Date: 9/30/2024
Permittee Contact	Gordon Whitehead Facility President 503-801-8713 PO Box 328 Hebo, OR 97122
Receiving Water Information	Receiving stream/NHD name: Three Rivers NHD Reach Code & % along reach: 17100203000317 (28.77%) USGS 12-digit HUC: 171002030208 OWRD Administrative Basin: North Coast ODEQ LLID & River Mile: 1238734452348 & 0.63 Assessment Unit ID: OR_SR_1710020302_05_105881
Proposed Action	Permit Renewal Application Number: 948141 Date Application Received: 3/11/2024
Permit Writer	Helen Sanders 541-241-0152 Date Prepared: 5/14/2024

NPDES Permit Fact Sheet
Hebo Joint Water & Sanitary Authority

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NPDES Permit Renewal Fact Sheet
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1. Introduction

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 – Not Applicable
Schedule D – Special conditions
Schedule E – Not Applicable
Schedule F – General conditions

Below is a summary of the major changes to the permit:

- Influent and effluent monitoring requirements for BOD_5 and TSS in Schedule B will increase from monthly to 2/month.
- Influent and effluent monitoring requirements for pH in Schedule B will increase from 2/week to 3/week.
- Effluent monitoring requirements for temperature in Schedule B will increase from 2/week to 3/week.
- Effluent monitoring requirements for *E. coli* in Schedule B will increase from monthly to 2/month.
- UV intensity and UV transmittance will be added as a continuous monitoring requirement in Schedule B.
- Receiving stream monitoring in the Three Rivers for pH, temperature, and alkalinity will be added as a monitoring requirement in Schedule B.

2. Facility Description

2.1 Wastewater Facility

The Hebo Joint Water & Sanitary Authority wastewater treatment facility serves the City of Hebo. The facility is located at 30960 Hwy 101 S, Hebo, Oregon, Tillamook County. This permit allows and regulates the discharge of treated municipal wastewater to the Three Rivers at river mile 0.63.

The NPDES permit was initially issued, and construction began in 1986 for a recirculating gravel filter system in response to a sanitary survey that showed several homes in the community with individual septic systems had failing drainfields. A complete replacement of the original facility was completed in February 2003. The HJWSA facility receives influent from a 100% Septic Tank Effluent Pumped (STEP) collection system. The treatment facility utilizes Orenco

recirculating textile filter modules (AdvanTex) to treat the wastewater. At the head of the facility, STEP influent flow is measured, and a flow-proportional composite sample is taken. Influent then gravity flows to a 60,000-gallon recirculation and blend tank. Wastewater is pumped from the recirculation and blend tank by 8 dosing pumps to 12 recirculating textile filter modules. Each of the AdvanTex modules contains vertical sheets of filter fabric, which act as a substrate for the aquatic biota necessary for treating the wastewater.

Typically, 80% of the flow that exits the filter modules is directed back to the recirculation and blend tank. The remaining 20% is pumped via the effluent pump station (4 pumps) to the Ultra-Violet (UV) disinfection unit. The disinfected effluent gravity flows to a single-port outfall located on the north bank of Three Rivers and is discharged approximately 1.5 feet from the bank.

The facility's Design Average Dry Weather Flow (DADWF) is 0.022 million gallons/day (MGD). The maximum monthly dry weather design flow (MMDWDF) is 0.025 MGD. The only outfall (Outfall 001) is at approximately latitude 45.230550, longitude -123.863136 in water 25 feet in depth and 1 foot from shore.

Biosolids accumulations from the Hebo treatment system are regularly pumped out and transported to the Port of Tillamook Bay treatment plant for further treatment and beneficial use as biosolids. The permittee reports the volume of materials removed from the septic tank and the Orenco unit on the monthly monitoring report and in an annual report. The facility does not store sewage sludge outside of the treatment system and does not land apply biosolids, nor intends to do so during the permit period. The permittee does not currently operate a recycled water program and does not intend to do so during the term of this permit.

Figure 2-1: Hebo JWSA Wastewater Treatment Location and Outfall

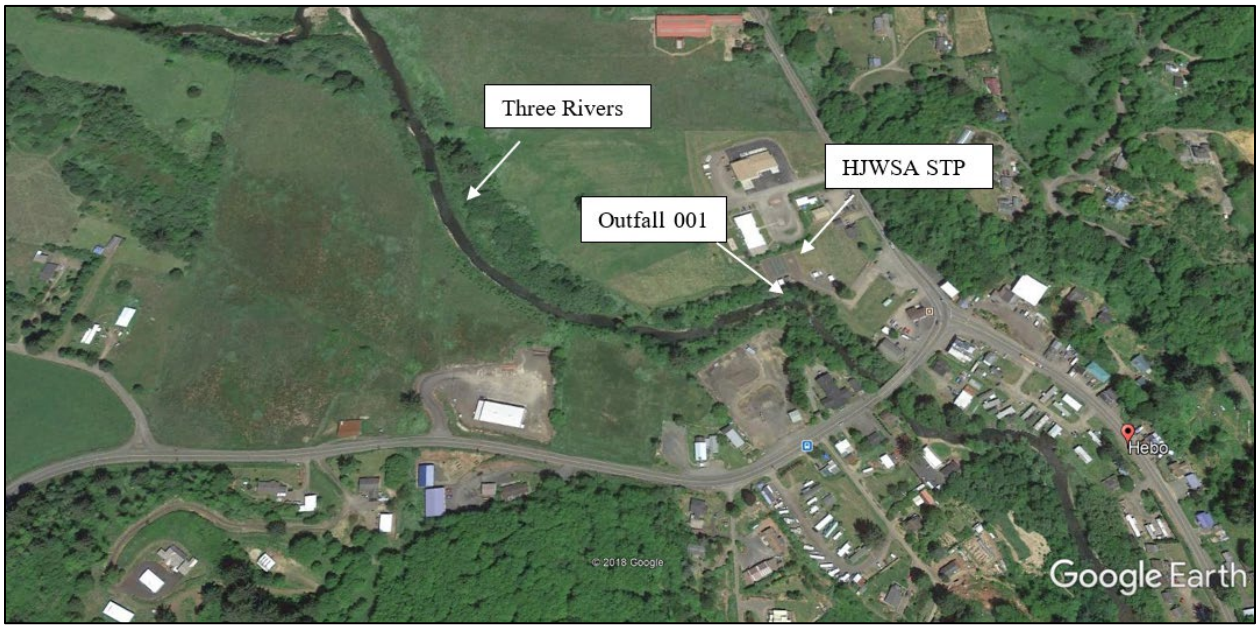

Figure 2-2: Hebo JWSA Wastewater Treatment Diagram

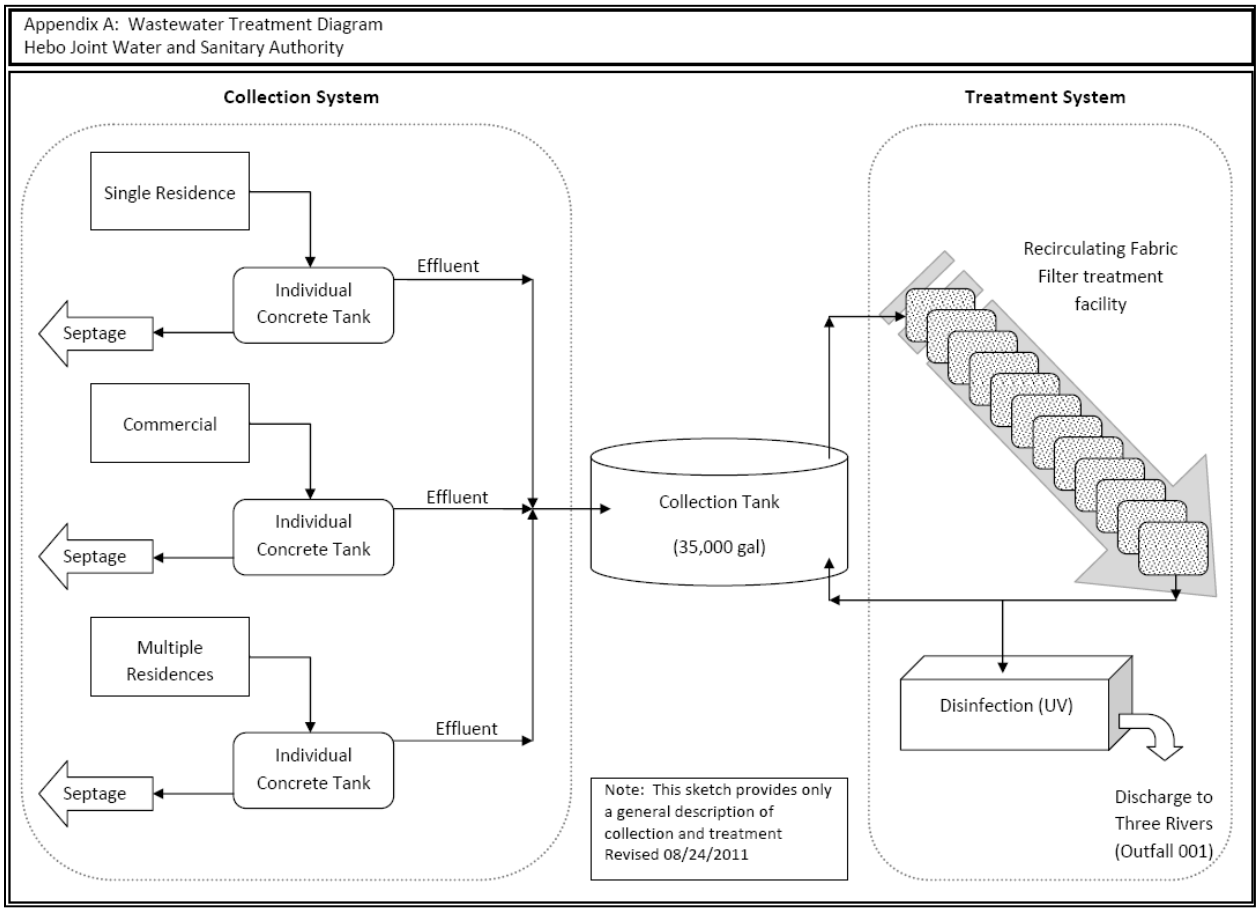

Table 2-1: List of Outfalls

Outfall Number	Type of Waste	Lat/Long
001	Treated Wastewater	45.230550, -123.863136

2.2 Compliance History

On July 14, 2020, DEQ issued a Pre-Enforcement Notice (PEN-5623) for exceedances of BOD_5, TSS, and *E. coli* limits. On Feb. 4, 2021, DEQ issued a Warning Letter (WL-6077) for BOD_5 exceedances. On July 7, 2021, DEQ issued a Warning Letter (WL-6399) for TSS and *E. coli* limit exceedances. On March 30, 2022, DEQ issued another Warning Letter (WL-6999) for exceeding the permit's TSS limit.

2.3 Stormwater

Stormwater is not addressed in this permit. General NPDES permits for stormwater are not required for facilities with a design flow of less than 1 MGD.

2.4 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 (Year-Round)	mg/L	10	15	
	lb/day	2.1	3.1	4.2
	% removal	85		
TSS (Year-Round)	mg/L	10	15	
	lb/day	2.1	3.1	4.2
	% removal	70		
pH	SU	Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0		
E. coli	#/100 mL	Must not exceed a monthly geometric mean of 78, no more than 10% of the samples may exceed 252 organisms per 100 mL.		
Temperature	˚C	Maximum 7-Day Rolling Average Effluent Temperature shall not exceed 25 ˚C		

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	20 mg/L during April 1 – Oct. 31.
TSS (mg/L)	30	45	20 mg/L during April 1 – Oct. 31.
pH (S.U.)	6.0 – 9.0. (instantaneous)		Not applicable
BOD_5 and TSS % Removal	85%	Not applicable	Not applicable

Federal regulations (40 CFR 133.103(d)) include special considerations for less concentrated influent wastewater from separate sewers. The rule allows substitution of either a lower percent removal requirement or a mass loading limit for the percent removal requirements provided that the permittee satisfactorily demonstrates that:

- The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits, but its percent removal requirements cannot be met due to less concentrated influent wastewater;
- To meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limits (defined as at least 5 mg/l more stringent than the otherwise applicable concentration-based limits) than would otherwise be required by the concentration-based standards; and,
- The less concentrated influent wastewater is not the result of excessive infiltration and inflow (I/I).

DEQ has determined the facility meets all three conditions above. Therefore, DEQ will continue with the current permit's TSS percent removal limit of 70%. This reduced percent removal limit was determined in 2019 with the following equation:

$$\text{Percent Removal} = \frac{\text{Monthly Avg Influent Concentration} - \text{Monthly Avg Effluent Concentration}}{\text{Monthly Avg Influent Concentration}} \times 100$$

The limits for BOD_5 and TSS shown in Table 3-2 are concentration-based limits. Mass-based limits are required in addition to the concentration-based limits per OAR 340-041-0061(9). For any new facility or any facility that has expanded its dry weather treatment capacity after June 30, 1992, OAR 340-041-0061(9)(b) requires that the mass load limits be calculated based on the proposed treatment facility capabilities and the highest and best practicable treatment to minimize the discharge of pollutants. DEQ uses the maximum monthly design flow to calculate the mass load limits as shown below for the dry and wet weather seasons.

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 maximum monthly dry weather flow (DMMDWF)

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	0.025	20	20
Wet Weather	0.025	30	30
Design flow comments: DMMDWF			

Dry Weather Mass Load Calculations:

Monthly Average: 0.025 [design flow] mgd x 20 [concentration] mg/L x 8.34 = 4.17 lbs/day (Two significant figures) = 4.0 lbs/day

Weekly Average: 4 lbs/day monthly average x 1.5 = 6.0 lbs/day

Daily Maximum: 4 lbs/day monthly average x 2 = 8.0 lbs/day

Wet Weather Mass Load Calculations:

Monthly Average: 0.025 [design flow] mgd x 30 [concentration] mg/L x 8.34 = 6.26 lbs/day (Two significant figures) = 6.0 lbs/day

Weekly Average: 6 lbs/day monthly average x 1.5 = 9.0 lbs/day

Daily Maximum: 6 lbs/day monthly average x 2 = 12 lbs/day

The HJWSA's current permit limits for BOD_5 and TSS concentration of 10 mg/L are lower than the federal secondary standards and Oregon's North Coast Basin standards. These lower limits have been in place at least since the NDPES permit issued to HJWSA in 2004. The existing permit limits of 10 mg/L are being maintained to comply with antidegradation and antibacksliding requirements.

The proposed BOD_5 and TSS limits are listed in the following table.

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

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5 (Year – Round)	mg/L	10	15	-
	lbs/day	2.1	3.1	4.2
	% removal	85	85	-
TSS (Year – Round)	mg/L	10	15	-
	lbs/day	2.1	3.1	4.2
	% removal	70	70	-

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 Three Rivers. These uses are listed in OAR-340-041-0230 for North Coast Basin

- Public and private domestic water supply
- Industrial water supply
- Irrigation and livestock watering
- Fish and aquatic life (including salmonid rearing, migration, and spawning)
- Wildlife and hunting

- Fishing
- Boating
- Water contact recreation
- Aesthetic quality

3.3.2 303(d) 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. If a parameter is listed under Category 5, the data in the assessment unit (or nearby assessment unit) indicates a designated use is not supported or a water quality standard is not attained and a TMDL is needed. The table also lists any parameters with an approved TMDL for the discharge's stream reach (Category 4A). If a parameter is listed under Category 4A, TMDLs that will result in attainment of water quality standards and beneficial use support have been approved.

Table 3-5: Category 5 and Category 4A Parameters

Water Quality Limited Parameters (Category 5)	
AU ID:	OR_SR_1710020302_05_105881
AU Name:	Three Rivers
AU Status:	Impaired
Year Listed	2002
Year Last Assessed	2022
Category 5 Parameters	E. coli, temperature, sedimentation
Category 4A Parameters	
E. coli and Temperature	

3.3.3 TMDL Wasteload Allocations

DEQ issued a TMDL for the North Coast basin. WLAs from this TMDL that are applicable to the permittees are listed in the following table. The North Coast basin TMDL was issued in 2002 and the temperature section was modified in 2006. The TMDL requires the permittee to meet specific WLAs for temperature and bacteria. The current permit includes limits based on these allocations.

For the temperature WLA, the critical period is the entire year for migration and rearing, and from September through July for salmon spawning by various species in combination. The temperature WLA was established in Addendum #1 to the Nestucca Bay Watershed TMDL. The *E. coli* WLA is associated with which the Three Rivers is a tributary of the Nestucca River, that then flows into Nestucca Bay. The loading capacity was set to meet shellfish criteria for the Bay and low concentrations of bacteria in the rivers. For each season and flow, the WLA was calculated based on effluent concentration that would decay to the geometric mean criterion. Fall through spring is the critical period for the lowest decay rate in the Three Rivers.

Table 3-6: Applicable WLAs

Parameter	WLA	Time Period
Temperature	25 ºC	Year – Round
E. coli	Must not exceed a monthly geometric mean of 78 per 100 mL.	October – May
E. coli	Must not exceed a monthly geometric mean of 126 per 100 mL.	June – September

See Sections 3.3.7 and 3.3.8 of the factsheet for further discussion of the temperature and *E. coli* WLAs.

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.

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

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 regulatory mixing zone from the existing permit is described as:

> The allowable mixing zone is that portion of Three Rivers contained within a band extending out 8 feet from the north bank of the river and extending from a point 5 feet upstream of the outfall to a point 33 feet downstream from the outfall. The ZID is defined as that portion of the allowable mixing zone that is within 3 feet of the point of discharge.

The Three Rivers is shallow and contains riffles, as shown in images taken during the MZ study and in aerial imagery (see figure 2-1 above). CORMIX is not designed to model these conditions. Considering both this and the model sensitivity at the RMZ, it is proposed that the mixing zone be revised to be 25% of stream flow and the ZID to be 10% of stream flow. The updated mixing zone is described as:

> The regulatory mixing zone is defined as 25% of the Three Rivers flow. The zone of initial dilution is defined as 10% of the Three Rivers flow.

The permittee discharges to the Three Rivers at 45.230560, -123.863136 (Google Earth). The outfall is a single 6-inch pipe with a duckbill valve that extends approximately 1 ft from the right bank of the river when looking downstream.

The dilution factors at the edge of the Regulatory Mixing Zone are shown in Table 3-8. These dilutions are based on a 2011 mixing zone study reviewed by DEQ. The mixing zone memo documenting this review is in a February 28, 2024 Mixing Zone Memo which is part of the administrative record. For this memo, DEQ determined that the Three Rivers is not conducive to modeling and revised the RMZ to be 25% of river flow. The dilutions were calculated using the 7Q10 flow determined in the 2011 MZ study and the max monthly average effluent flow.

Table 3-8: Mixing Zone Dilutions

Dilution Summary – Outfall 001 – Year-Round						
Water Quality Standard	**Stream Flow (cfs)**		**Effluent Flow (mgd)**		**Dilution Factor**	**Location**
	Statistic	**Flow**	**Statistic**	**Flow**		
Aquatic Life, Acute	1Q10	14.9	☐ ADWDF x PF ☒ Max Daily Avg ☐ Other	0.028	31	ZID (10%)
Aquatic Life, Chronic	7Q10	15.6	☐ ADWDF ☒ Max Monthly Avg ☐ Other	0.016	130	RMZ (25%)
ADWDF = Average dry weather design flow *PF = Peaking factor (1.5)*						
Comments: 7Q10 calculated by taking the ratio of flow between USGS gauge 14303600 (Nestucca River near Beaver, OR) and using the ratio to convert the 7Q10 from USGS gauge 14303600 to a 7Q10 for Three Rivers.						

3.3.6 pH

The pH criterion for this basin is 6.5 – 8.5 per OAR 340-041-0235. The current permit pH limits were 6.0 to 9.0. DEQ determined there is no reasonable potential for the discharge to exceed the pH criterion at the edge of the mixing zone. The proposed limits are a lower limit of 6.0 and an upper limit of 9.0, both of which are TBELs. The following provides a summary of the data used for the analysis.

Table 3-9: pH Reasonable Potential Analysis

INPUT	Lower pH Criteria	Upper pH Criteria
1. Dilution at mixing zone boundary	130.0	130.0
2. Upstream characteristics		
a. Temperature (deg C)	13.6	3.5
b. pH	7.4	7.7
c. Alkalinity (mg CaCO3/L)	40.0	40.0
3. Effluent characteristics		
a. Temperature (°C)	21.1	11.0
b. pH (S.U.)	6.0	9.0
c. Alkalinity (mg CaCO3/L)	134.6	134.6
4. Applicable pH criteria	6.5	8.5
pH at mixing zone boundary	7.2	7.7
Is there reasonable potential?	No	No
Proposed effluent limits	6.0	9.0
Effluent data source: ICIS Summary Data 2019 – Feb 2024.		
Ambient data source: Alkalinity, temperature, and pH data collected by permittee upstream of outfall from 2022 – Feb. 2024.		

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	Core Cold Water 16ºC (OAR 340-041-0028(4)(b)
Applicable dates: June 16 – August 31	
Salmon/Steelhead Spawning 13 °C? OAR 340-041-0028(4)(a)	☒Yes ☐No
Applicable dates: September 1 – June 15	
WQ-limited?	☒Yes ☐No
TMDL wasteload allocation assigned?	☒Yes ☐No
Applicable dates: Year-round	
TMDL based on natural conditions criterion?	☒Yes ☐No
Cold water summer protection criterion applies?	☐Yes ☒No
Cold water spawning protection applies?	☐Yes ☒No
Comments: Salmon/steelhead spawning use dates differ from the EPA-approved beneficial use, see discussion below.	

Hebo JWSA discharges to the Three Rivers in the Nestucca Basin, which serves as core cold water habitat from June 16 – Sept. 14 (OAR 340-041-0230, Figure 230A). In addition, the EPA-approved salmonid spawning beneficial use is from Sept. 15 – June 15. However, a recent DEQ adopted rule identifies the salmonid spawning as starting on September 1 (OAR 340-041-0230, Figure 230B). This change to the beneficial use in Figure 230B is still awaiting EPA approval. Despite that, since spawning has been identified as an existing use beginning on Sept. 1, it will be assessed for protection in this permit renewal. OAR 340-041-0028(4)(b) states that the 7-day average maximum temperature of a stream identified as cold wore water habitat may not exceed 16 ºC. OAR 340-041-0028(4)(a) states that the 7-day average maximum temperature of a stream identified as salmonid spawning may not exceed 13 ºC. This segment of the Three Rivers is listed as being water quality limited for temperature (year-round). A temperature TMDL Addendum #1 for the Nestucca Basin, which addresses this listing, was approved by the EPA in November 2006. This TMDL includes a wasteload allocation, applicable year-round, in the form of an allowable effluent temperature limit. The TMDL WLA also allows for a limit to be expressed as an excess thermal load. For simplicity, the WLA is addressed in this permit as a temperature limit.

The North Coast Basin TMDL addendum states that WLAs may be recalculated using an updated heat load allocation if stream flow rates or effluent temperatures differ. Subsequent permit renewals or modifications may instead use an excess thermal load limit that considers ambient temperature and flow in its calculation.

Since the TMDL did not address the spawning use for the September 1 – 14 period, an assessment was performed to determine if an additional limit was needed during this period. This assessment, presented in Appendix A found that the TMDL temperature limit of 25 °C will ensure the criterion associated with the spawning use will be met.

The final effluent limit is listed in the following table.

Table 3-11: Temperature Criterion Effluent Limits

Effluent limit needed? ☒Yes ☐No
TMDL WLA Limit: 25 ºC
Applicable time period: Year – Round ☐NA
Temperature Criterion Limit: N/A
Applicable time period: Dates ☒NA
Comments:

3.3.7.2 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 13ºC or more for salmon and steelhead, and 9ºC or more for bull trout.

  Hebo JWSA: Though the Three Rivers is listed as possible spawning habitat for salmonid species (OAR 340-041-0230, Figure 230A) there are no known spawning redds documented within the HJWSA's mixing zone to the Three Rivers, and the bank where the outfall is located is heavily riprapped. Additionally, as the approved mixing zone only extends 8 feet from the north bank of the river, the remainder of the stream is available for passage and potential spawning. As noted above, DEQ performed an analysis of the discharge related to the spawning criterion. The result of this analysis indicates that the discharge does not have a reasonable potential to heat the receiving stream above the spawning criterion by more than an insignificant amount at the edge of the mixing zone. Therefore, the discharge is not expected to impair an active spawning area. See Appendix B.

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

  Hebo JWSA: The daily maximum-recorded temperature of the discharge to Three Rivers for the 2019 to Feb. 2024 period was 23 ºC, well below the 32 ºC criterion. Therefore, the discharge does not have the potential to cause 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 25ºC or more to less than 5% of the cross-section of 100% of the 7Q10 flow of the water body.

  Hebo JWSA: As mentioned above, the daily maximum-recorded temperature of the discharge for the 2019 to Feb. 2024 period was 23 ºC, well below the 25 ºC criterion. As such, the effluent discharge does not have the potential to result in thermal shock potential within Three Rivers.

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

  Hebo JWSA: The maximum 7-day average recorded temperature of the discharge for the 2019 to Feb. 2024 period was 21.3 ºC, slightly above the 21 ºC criterion. With the effluent temperature at this value, the calculated temperature at 25% of the cross section is 15.7 ºC and as such, the effluent discharge does not have the potential to result in migration blockage within the Three Rivers. See Appendix B.

Effluent limits needed to comply with the thermal plume requirements are shown in the following table.

Table 3-12: Thermal Plume Effluent Limit

Effluent limit needed? ☐Yes ☒No
Calculated limit: N/A
Applicable timeframe: N/A
Comments:

3.3.8 Bacteria

OAR 340-041-0009(6)(b) requires discharges of bacteria into freshwaters meet a monthly geometric mean of 126 *E. coli* per 100 mL, with no single sample exceeding 406 *E. coli* per 100 mL. The 2002 TMDL for the Nestucca Bay Watershed of the North Coast Basin assigned a wasteload allocation to Hebo JWSA for *E. coli* due to point source impairment in the Three Rivers. The WLA is more stringent than the OAR 340-041-0009(6)(b) limits and will be applied to this renewal permit.

The WLA for Hebo JWSA is a monthly geometric mean of 78 *E. coli* per 100 mL, with no more than 10% of the samples may exceed 252 organisms/100 mL. If a single sample exceeds 252 *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 78, 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. If a single sample exceeds 252 *E. coli* per 100 mL, then the permittee must evaluate the

previous 9 sample results to see if the 10% requirement has been exceeded. Based on discharge monitoring reports from 2021 – 2023, Hebo JWSA has the capability to continue meeting the *E. coli* permit limits. The following table includes the proposed permit limits and applies year-round.

Table 3-13: Proposed *E. coli* Limits

E. coli (#/100 ml)	Geometric Mean	Maximum
Existing Limit	78	252
Proposed Limit	78	252

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. As noted in Section 3.3.7., DEQ determined that salmonid spawning in the receiving stream is an existing beneficial use from September 1 -14 that was not previously identified. The proposed temperature limit is protective of this use as discussed in that section. Other than this, 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

DEQ does not require whole effluent toxicity testing (WET) for minor domestic facilities because concentrations of toxics are typically very low and WET testing is not warranted.

3.7 Groundwater

The treatment facility does not have any basins, ponds or lagoons that 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 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.

Receiving stream monitoring is required in the permit to determine accurate representation of upstream ambient conditions during the permit's monitoring period. This stretch of the Three Rivers is only sporadically monitored and may not provide a representative data set for the next renewal period's RPA.

6. Schedule C: Compliance Schedule

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:

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 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.

7.3 Exempt Wastewater Reuse at the Treatment System

A condition that exempts the permit holder 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.

7.4 Wastewater Solids Annual Report

This condition requires the permittee to submit a Wastewater Solids Annual Report each year documenting removal of wastewater solids from the facility during the previous calendar year.

7.5 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.

7.6 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.

7.7 Industrial User Survey

This condition requires the permittee to conduct or update 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.

7.8 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: Temperature RPA

Enter data into white cells below:			Data Metric/Source
Mixing Zone Dilution =	130		2024 Mixing Zone Memo
7Q10 =	15.6	cfs	2024 Mixing Zone Memo
Effluent Flow =	0.0375	mgd	ADWDF x 1.5
Applicable Temperature Criterion	13	°C	
Effluent Temperature	25	°C	Current temperature limit
Allowable increase =	0.3	°C	

Dilution at 25% Stream Flow =	68	dilution = (Qr*0.25)/Qe + 1	
ΔT at edge of MZ=	**0.1**	**°C**	**No Reasonable Potential**
ΔT at 25% Stream Flow=	**0.2**	**°C**	
Thermal Load Limit =	**N/A**	**Million Kcals (7-day Rolling Avg.)**	

Appendix B: Thermal Plume RPAs

OAR 340-041-0053(2)(d)(A): Active Spawning Area Impairment 13.0 deg C at location of active spawning area			
Enter data into white cells below:			Data Metric/Source
Dilution at Spawning Area =	130		2024 Mixing Zone Memo
Ambient Temperature =	13	°C	Temperature Criteria
Max. 7dAM Effluent Temperature =	21.3	°C	2019-2024 ICIS summary data
Applicable Temperature Criterion =	13	°C	
ΔT at Spawning Area=	**0.1**	**°C**	**No Reasonable Potential**
Temp. at Spawning Area=	**13.1**	**°C**	

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 =	15.6	cfs	2024 Mixing Zone Memo
Ambient Temperature =	15.6	°C	2022-2023 Permittee collected ambient data
Effluent Flow =	0.0375	mgd	2024 Mixing Zone Memo
Max 7dAM Effluent Temperature =	21.3	°C	2019-2024 ICIS summary data
25% of 7Q10 =	3.9	cfs	
25% dilution =	68	dilution = (Qr*0.25)/Qe + 1	
Temperature at 25% cross section =	**15.7**	**°C**	**No Reasonable Potential**
ΔT at 25% Stream Flow=	**0.1**	**°C**	