



State of Oregon  
Department of  
Environmental  
Quality

# National Pollutant Discharge Elimination System Permit Fact Sheet Odell Sanitary District

<b>Permittee</b>	Odell Sanitary District Odell STP 3700 Dethman Ridge Rd Hood River, OR 97031-9571
<b>Existing Permit Information</b>	File Number: 63062 Permit Number: 100669 EPA Reference Number: OR0022471 Category: Domestic Class: Minor Expiration Date: 06-30-2024
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<b>Receiving Water Information</b>	Receiving stream/NHD name: Odell Creek NHD Reach Code & % along reach: 17070105000440 47.51% USGS 12-digit HUC: 170701050702 OWRD Administrative Basin: Hood ODEQ LLID & River Mile: 1215398456564, mile 1.13 Assessment Unit ID: OR_WS_170701050702_02_102006
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# NPDES Permit Fact Sheet Odell Sanitary District

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# NPDES Permit Renewal Fact Sheet Odell Sanitary District

## 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 – 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 in the table below:

**Table 1-1: Permit Changes**

Page/Schedule	Revision
Face Page	<ul style="list-style-type: none"> <li>• Removes outfall 002, recycled water</li> </ul>
Schedule A	<ul style="list-style-type: none"> <li>• Revises Excess Thermal Load (ETL) limits</li> <li>• Revises regulatory mixing zone to be a percentage of flow</li> <li>• Removes recycled water limits</li> </ul>
Schedule B	<ul style="list-style-type: none"> <li>• Removes recycled water monitoring requirements</li> <li>• Adds pH, alkalinity, and ammonia monitoring to receiving stream monitoring requirements – Table B4</li> </ul>
Schedule C	<ul style="list-style-type: none"> <li>• The permittee completed the compliance schedule to meet temperature and thermal load waste discharge limits and thus it has been removed</li> </ul>
Schedule D	<ul style="list-style-type: none"> <li>• Includes a spill/emergency response plan condition for use of glycol solution in the cooling system (chiller units)</li> </ul>
Schedule E	<ul style="list-style-type: none"> <li>• No changes - a pretreatment program is not part of this permit</li> </ul>

## 2. Facility Description

### 2.1 Wastewater Facility

The Odell Sanitary District (Odell STP or district) owns and operates a secondary wastewater treatment facility that serves the community of Odell, in Hood River County. Odell is an

unincorporated community located approximately 6 miles south of Hood River. The plant is adjacent to Odell Creek on the north end of town and is shown in Figure 2-1.

The district upgraded its former activated sludge plant to a membrane bioreactor plant (MBR) in 2008. The MBR process combines an activated sludge bioreactor with submerged hollow-fiber microfiltration membranes. To comply with permitted temperature limits, two effluent chillers were installed in 2023. Figure 2-2 shows the plant in schematic view.

Influent enters the headworks where coarse materials are removed by a 6 mm mechanical bar screen. Flow enters an influent lift station where two variable speed pumps, each with a 700 gallon/minute capacity, deliver sewage to two 2 mm rotary drum screens each with a hydraulic capacity of 1.0 MGD. The screens protect the integrity of the downstream membrane filtration units.

The MBR process consists of an anoxic cell, an aerobic cell and a "swing cell" that functions as an anaerobic or aerobic cell. The swing and aerobic cells contain fine bubble diffusers. The aerobic digester has been modified to allow it to function as a backup bioreactor should the primary bioreactor need to be taken off-line. Mixed liquor from the bioreactor is pumped to the membrane tanks. The membrane cassettes filter solids down to 0.04  $\mu\text{m}$  effectively screening out mixed liquor solids and most pathogens. The treated effluent is disinfected using an ultraviolet light disinfection system. To increase the oxygen content of the effluent prior to discharging to Odell Creek, the effluent passes through a re-aeration chamber.

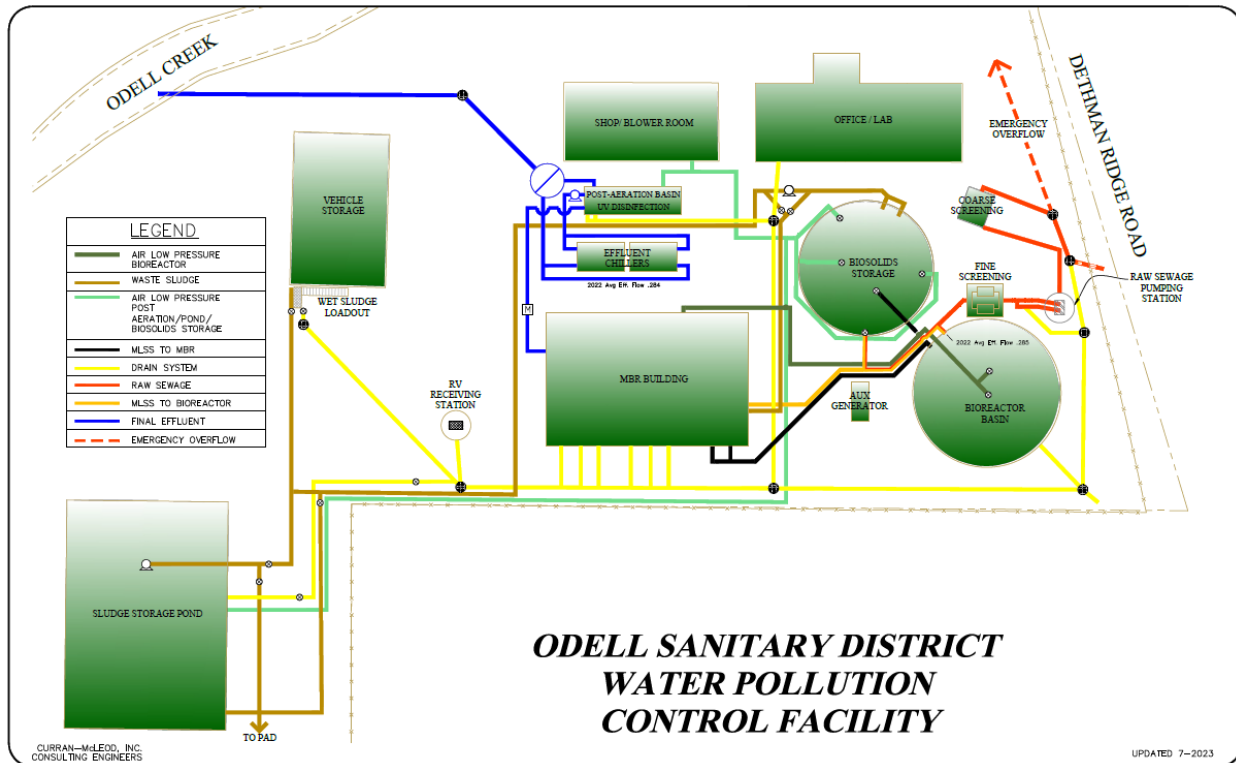
During late summer when the temperature of the treatment facility effluent can exceed permitted limits, the effluent from the post-aeration basin is pumped through two chillers in series. Effluent from the chillers or from the post-aeration basin is discharged from a diversion manhole. A shear gate in the manhole can be opened to allow flow from the post-aeration basin through the base of the manhole. The shear gate is closed when the chiller is in use to allow the chilled effluent to be re-circulated back to the post-aeration basin should effluent flows be less than the 130 - 140 gpm design of the chiller system. From the diversion manhole, treated effluent is discharged to Odell Creek adjacent to the STP through a 16" diameter pipeline.

Biosolids are transferred to a 150,000-gallon biosolids holding pond by a transfer pump. The pond is aerated as needed by three sets of submerged diffusers. Three operations can be carried out from the pond. The biosolids can be held in the pond until conditions are suitable for land application on approved sites. The second operation involves pumping solids from the pond into a fabric bag. As the solids are transferred to the bag, liquid polymer is injected into the bag feed line to flocculate the solids. The flocculated solids are retained in the bag as the water filters through the fabric and is returned to the treatment plant inlet upstream of the fine screens. Once filled to capacity and after drying, the fabric bag is opened. The biosolids are hauled away from the facility to either a landfill or an approved land application site. The third operation, which is not currently utilized, is dewatering the biosolids using a rotary press (Odell STP has tentatively planned on purchasing a rotary press manufactured by Prime Solutions). The biosolids would be hauled away from the facility to either a landfill or an approved land application site. Refer to 2024 Biosolids Management Plan for more information on biosolids storage, handling, and application.

**Figure 2-1: Facility Location**



**Figure 2-2: Facility Components**



**Table 2-1: List of Outfalls**

Outfall Number	Type of Waste	Lat/Long	Design Flow <sup>1</sup> (mgd)	Existing Flow <sup>2</sup> (mgd)
001	Treated Wastewater	45.6432106, -121.5436853	0.42	0.23

1. Design Flow = design average dry weather flow  
 2. Existing Flow = existing average monthly dry weather flow

## 2.2 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.

## 2.3 Industrial Pretreatment

Municipalities that receive wastewater from certain categories of industries must have in place approved pretreatment programs. These programs are designed to reduce the discharge of pollutants from identified industries that the treatment plant is not able to treat. These pollutants

can interfere with treatment plant operation, reduce the value of wastewater and biosolids for reuse, cause worker health or safety concerns, and pose a risk to the public or the environment.

The permittee does not have a DEQ-approved industrial pretreatment program. Based on current information, no industrial pretreatment program is needed. Schedule D of the proposed permit requires the permittee to perform an industrial user survey.

Four industrial food processing facilities, Mt. Adams Fruit, Diamond Fruit Growers, Diamond-Odell and Diamond-Central, and Duckwall-Pooley, discharge process wastewater into the municipal sewer. Mt. Adams Fruit, formerly known as Stadelman Fruit, and Diamond-Odell have discharged process wastewater to the STP for several years, although on November 15, 2022, Diamond-Odell terminated its own NPDES permit and now discharges completely to Odell STP. The Diamond-Central plant connected to the STP in 2018, initially discharging process wastewater only during periods when it could not meet its own NPDES permit limits. On September 22, 2022, the Diamond-Central plant terminated its NPDES permit and now discharges solely to the STP. The fourth food processor, Duckwall-Pooley, began discharging to Odell STP in May 2022, to which it routes its fruit washing wastewater. These processors rinse agricultural products and pesticides, specifically carbaryl, are potential pollutants of concern. See section 3.3.11.

Odell STP receives industrial wastewater, specifically glass wash water from Cardinal IG. The Cardinal IG plant receives glass and cuts it to manufacture windows. Although the STP receives a significant amount of flow from this facility, only a portion of it is classified as industrial wastewater. The chemicals present in the Cardinal IG discharge are de minimis amounts of Lucite, cutting oil, and glass coating.

The permittee has significant industrial users as discussed above that may contribute to greater than 5% of the organic and hydraulic loading at certain times of the year. DEQ has evaluated the industrial contributions and determined that since the permittee has maintained compliance with its permit limits, there is not a need for a formal pretreatment program at this time. However, the increased organic and hydraulic loading could eventually overcome the WWTP treatment capacity, which would result in permit violations. Should the increased loading from the industrial discharges result in a permit violation, or the presence of pesticides be detected in Odell STP's effluent, DEQ will evaluate to modify the NPDES permit to include industrial pretreatment requirements.

## **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 for Outfall 001 contained in the existing permit.

**Table 3-1: Existing Effluent Limits**

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD <sub>5</sub> (May 1 – October 31)	mg/L	10	15	-
	lb/day	35	52	70
	% removal	85	-	-
BOD <sub>5</sub> (November 1 to April 30)	mg/L	30	45	-
	lb/day	110	160	210
	% removal	85	-	-
TSS (May 1 – October 31)	mg/L	10	15	-
	lb/day	35	52	70
	% removal	85	-	-
TSS (November 1 – April 30)	mg/L	30	45	-
	lb/day	110	160	210
	% removal	85	-	-
pH	SU	May not be outside the range of 6.3 to 9.0.		
Excess thermal load April 15- May 15 May 16 – September 30	million kcal/day (Mkcal/day)	2,700 2,000	Expressed as: Maximum 7 day rolling average of the daily excess thermal loads	
Temperature (see note a): October 1 – April 14	°C	24.1 weekly average maximum		
Dissolved Oxygen: January 1 through May 15 May 16 through December 31	mg/L	Daily minimum shall not be less than 8.5 mg/L. Daily minimum shall not be less than 5.4 mg/L.		
<i>E. coli</i> Bacteria (see note b.)	#/100mL	Monthly log mean (same as geometric mean) may not exceed 126 organisms per 100 ml. No single sample may exceed 406 organisms per 100 ml.		
Notes:				
a. Final limits took effect upon completion of upgrades on April 15, 2023.				

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
b. No single E. coli sample may exceed 406 organisms per 100 mL; however, DEQ will not cite a violation of this limit if the permittee takes at least 5 consecutive re-samples at 4 hour intervals beginning 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				

## 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<sub>5</sub>), total suspended solids (TSS) and pH (i.e., federal secondary treatment standards). Substitution of 5-day carbonaceous oxygen demand (CBOD<sub>5</sub>) for BOD<sub>5</sub> 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<sub>5</sub> 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 Hood basin.

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

Parameter	Federal Secondary Treatment Standards		Hood Basin-Specific Design Criteria (OAR 340-041-0165)
	30-Day Average	7-Day Average	Monthly Average
BOD <sub>5</sub> (mg/L)	30	45	10 from May 1 to October 31 30 from November 1 to April 30
TSS (mg/L)	30	45	10 from May 1 to October 31 30 from November 1 to April 30
pH (S.U.)	6.0 – 9.0. (instantaneous)		6.5 – 8.5
BOD <sub>5</sub> and TSS % Removal	85%	Not applicable	Not applicable

The limits for BOD<sub>5</sub> and TSS shown in the table above 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. The permittee's facility has been engineered to achieve BOD<sub>5</sub> and TSS monthly average concentrations of 10 mg/L during the dry weather season and 30

mg/L during the wet weather season. DEQ uses the maximum monthly design flow to calculate the mass load limits as shown below for the dry and wet weather seasons.

$$\text{Monthly Avg Mass Load} = \text{Design Flow}^* \times \text{Monthly Concentration Limit} \times \text{Unit Conversion factor}$$

$$\text{Weekly Average Mass Load} = 1.5 \times \text{Monthly Average Mass Load Limit}$$

$$\text{Daily Maximum Mass Load} = 2 \times \text{Monthly Average Mass Load Limit}$$

\*Design flow is the design maximum monthly dry weather flow (DMMDWF) or design maximum monthly wet weather flow (DMMWWF)

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 <sub>5</sub> Concentration Limit (mg/L)
<b>Dry Weather</b>	0.49	10	10
<b>Wet Weather</b>	0.71	30	30
Design flow comments: dry weather design flow basis is design maximum monthly dry weather flow (DMMDWF); wet weather design flow basis is design maximum monthly wet weather flow (DMMWWF)			

Odell STP's summer mass load limits for BOD<sub>5</sub> and TSS are calculated using the design maximum monthly dry weather flow of 0.49 mgd and a concentration of 10 mg/L. The summer calculations for BOD<sub>5</sub> and TSS are:

Monthly Average:  $0.49 \text{ mgd} \times 10 \text{ mg/L} \times 8.34 = 40.8 \text{ lbs/day}$  rounded off to 41 lbs/day (two significant figures)

Weekly Average:  $40.8 \text{ lbs/day monthly average} \times 1.5 = 61.2 \text{ lbs/day}$  rounded off to 61 lbs/day (two significant figures)

Daily Maximum:  $40.8 \text{ lbs/day monthly average} \times 2 = 81.7 \text{ lbs/day}$  rounded off to 82 lbs/day (two significant figures)

Odell STP's winter mass load limits for BOD<sub>5</sub> and TSS are calculated using the design maximum monthly wet weather flow of 0.71 mgd and a concentration of 30 mg/L. The winter calculations for BOD<sub>5</sub> and TSS are:

Monthly Average:  $0.71 \text{ mgd} \times 30 \text{ mg/L} \times 8.34 = 177.6 \text{ lbs/day}$  rounded off to 180lbs/day (two significant figures)

Weekly Average:  $177.6 \text{ lbs/day monthly average} \times 1.5 = 266 \text{ lbs/day}$  rounded off to 270 lbs/day (two significant figures)

Daily Maximum: 177.6 lbs/day monthly average x 2 = 355 lbs/day rounded off to 360 lbs/day (two significant figures)

The facility's dry weather and wet weather mass load limits were previously calculated using their dry weather average design flow of 0.42 mgd. To address antidegradation and anti-backsliding, the previous mass load limits are retained for this permit cycle. Additionally, the permittee has not requested a mass load increase. The proposed BOD<sub>5</sub> and TSS limits are listed in the following table.

**Table 3-4: BOD<sub>5</sub> and TSS Technology Based Effluent Limits**

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD <sub>5</sub> (May 1 – October 31)	mg/L	10	15	NA
	lbs/day	35	52	70
	% removal	85	85	NA
TSS (May 1 – October 31)	mg/L	10	15	NA
	lbs/day	35	52	70
	% removal	85	85	NA
BOD <sub>5</sub> (November 1 – April 1)	mg/L	30	45	NA
	lbs/day	110	160	210
	% removal	85	85	NA
TSS (November 1 – April 1)	mg/L	30	45	NA
	lbs/day	110	160	210
	% removal	85	85	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 Odell Creek. These uses are listed in OAR-340-041-0160 for Hood Basin.

- Public and private domestic water supply
- Industrial water supply
- Irrigation and livestock watering
- Fish and aquatic life
- Wildlife and hunting
- Fishing
- Boating
- Water contact recreation
- Aesthetic quality
- Hydro power

### 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. The table also lists any parameters with a TMDL wasteload allocation assigned to the facility (Category 4).

**Table 3-5: 303(d) and TMDL Parameters**

<b>Water Quality Limited Parameters (Category 5)</b>	
AU ID:	OR_WS_170701050702_02_102006
AU Name:	HUC12 Name: Odell Creek-Hood River
AU Status:	Impaired
Year Listed	2004
Year Last Assessed	2022
303d Parameters (Category 5)	DDE 4,4’; DDT 4,4’; Guthion; DDD 4,4’; Dieldrin
<b>TMDL Parameters (Category 4)</b>	
Temperature	

There are five category 5 parameters that are 303(d) listed in the Odell Creek-Hood River watershed. These parameters were assessed in 2022 and include DDD 4,4' and DDE 4,4', listed in 2004, Guthion, listed in 2010, and Dieldrin and DDT 4,4', listed in 2012. See section 3.3.11 for further detail on these parameters.

### 3.3.3 TMDL Wasteload Allocations

DEQ issued a TMDL for the Western Hood Subbasin. WLAs from this TMDL that are applicable to the permittees are listed in the following table.

**Table 3-6: Applicable WLAs**

<b>Parameter</b>	<b>WLA</b>	<b>Time Period</b>
Excess Thermal Load	4.4 x 10 <sup>6</sup> kcal/day	April 15 – June 15

Parameter	WLA	Time Period
Excess Thermal Load	4.0 x 10 <sup>6</sup> kcal/day	June 16 – Sept 30
Note: The TMDL WLAs are also expressed as equations as discussed in Section 3.3.7		

### 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 3-7: 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 3-8: Pollutants of Concern**

Pollutant	How was pollutant identified?
pH	Effluent Monitoring
Temperature	Effluent Monitoring
E. coli	Effluent Monitoring
Total Ammonia Nitrogen	Application Requirement
Dissolved Oxygen	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 mixing zone is defined as 25 percent of Odell Creek flow and no more than 50 feet downstream from the outfall. The zone of initial dilution is defined as 10 percent of the Odell Creek flow and no more than 5 feet downstream from the outfall.*

DEQ proposes to update the mixing zone description to remove the distance downstream. The proposed Regulatory Mixing Zone and Zone of Initial Dilution is described as:

*The Regulatory Mixing Zone is defined as 25 percent of Odell Creek flow and the Zone of Initial Dilution is defined as 10 percent of Odell Creek flow.*

The outfall is located at 45.6432106°, -121.5436853° (WGS 84). The coordinates were measured in 2009 by DEQ and are at end-of-pipe. They were verified by DEQ staff again in 2023.

The dilution factors at the edge of the Regulatory Mixing Zone and Zone of Initial Dilution are shown in Table 3-9. The mixing zone memo documenting the analysis and determination of dilution factors is in a December 20<sup>th</sup>, 2023 Mixing Zone Memo which is part of the administrative record.

**Table 3-9: Dilution Summary**

<b>Dilution Summary – Year-Round</b>						
<b>Water Quality Standard</b>	<b>Stream Flow (cfs)</b>		<b>Effluent Flow</b>		<b>Dilution Factor</b>	<b>Location</b>
	<b>Statistic</b>	<b>Flow</b>	<b>Statistic</b>	<b>Flow</b>		
Aquatic Life, Acute	1Q10	3.1	<input checked="" type="checkbox"/> ADWDF x PF <input type="checkbox"/> Max Daily Avg <input type="checkbox"/> Other	0.63 MGD (0.975 CFS)	1.3	ZID
Aquatic Life, Chronic	7Q10	3.6	<input type="checkbox"/> ADWDF <input checked="" type="checkbox"/> Max Monthly Avg <input type="checkbox"/> Other	0.43 MGD (0.665 CFS)	2.4	RMZ
Human Health, Non-Carcinogen	30Q5	4.4	<input type="checkbox"/> ADWDF <input checked="" type="checkbox"/> Max Monthly Avg <input type="checkbox"/> Other	0.43 MGD (0.665 CFS)	2.7	RMZ
Human Health, Carcinogen	Harmonic Mean	Not calculated	<input type="checkbox"/> Annual Avg Design <input type="checkbox"/> Annual Avg <input type="checkbox"/> Other: No data	N/A	N/A	RMZ
<i>ADWDF = Average dry weather design flow</i> <i>PF = Peaking factor (1.5)</i>						
<b>Comments: ADWDF = 0.42 MGD.</b> The Human Health, Non-Carcinogen dilution value is calculated with the same statistics as those needed for use in the Ammonia RPA 30-day Chronic Criteria for Aquatic Life.						

**3.3.6 pH**

The pH criterion for this basin is 6.5 – 8.5 per OAR 340-041-0165. The facility’s current permit limits are 6.3 – 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 lower limit remains 6.3 and is a WQBEL. The upper limit is 9.0 and is a TBEL. The following provides a summary of the data used for the analysis.

**Table 3-10: pH Reasonable Potential Analysis**

<b>INPUT</b>	<b>Lower pH Criteria</b>	<b>Upper pH Criteria</b>
1. Dilution at mixing zone boundary	2.4	2.4
2. Upstream characteristics		
a. Temperature (deg C)	16.8	6.4
b. pH	7.2	7.6
c. Alkalinity (mg CaCO3/L)	34.8	34.8
3. Effluent characteristics		
a. Temperature (°C)	19.2	13.9
b. pH (S.U.)	6.3	9.0
c. Alkalinity (mg CaCO3/L)	99.5	99.5
4. Applicable pH criteria	6.5	8.5
<b>pH at mixing zone boundary</b>	6.5	8.0
<b>Is there reasonable potential?</b>	No	No
<b>Proposed effluent limits</b>	6.3	9.0
Effluent data source: DMRs 2019-2023 for alkalinity and 2023 DMR for temperature (post-chiller installation)		
Ambient data source: DMRs 2022-2023 for pH and alkalinity and DMRs 2019-2023 for temperature		

### 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 3-11: Temperature Criteria Information**

<b>Applicable Temperature Criterion</b>	Core Cold Water 16°C (OAR 340-041-0028(4)(b))
Applicable dates: Year-round	
<b>Salmon/Steelhead Spawning 13 °C?</b> OAR 340-041-0028(4)(a) (See note a.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Applicable dates: January 1 – June 15	
<b>WQ-limited?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>TMDL wasteload allocation assigned?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Applicable dates: April 15 – June 15 and June 16 – September 30	
TMDL based on natural conditions criterion?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Cold water summer protection criterion applies?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Cold water spawning protection applies?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Comments: a) Salmon/steelhead spawning use dates differ from those in the 2003 OAR spawning map	

The applicable temperature criteria noted in the table above reflect both the designated fish uses as specified in the EPA-approved beneficial uses for the Hood Basin (OAR 340-041-0160) and also the existing beneficial uses. The 2003 Hood Basin EPA-approved designated beneficial uses do not include salmon and steelhead spawning.<sup>1</sup> However, in 2016 a hydroelectric dam upstream of the mouth of Odell Creek was removed, reopening 4.5 miles of Odell Creek to salmonid use, including spawning. This spawning use during the Jan. 1 – June 15 period is reflected in the spawning map contained in the most recent version of OAR 340-041-0160.<sup>2</sup> While not yet approved by EPA for designated beneficial use purposes, this map reflects the known current spawning use in the creek. Oregon’s antidegradation regulations require that designated and existing beneficial uses be assessed for protection during permit development.

A temperature TMDL was developed by DEQ in 2018 for the Western Hood Subbasin, revising a TMDL developed in 2002. The revised TMDL established new wasteload allocations (WLAs) for NPDES-permitted point sources in the subbasin. These WLAs apply from April 15 – September 30 and address salmon and steelhead spawning fish use from January 1 - May 15 and core cold water use for the remainder of the year. As noted above, the spawning use now applies from January 1 – June 15 and the associated criterion (13 °C) also applies during this period. Since the TMDL did not address the spawning use for the May 16 – June 15 period, the permit writer developed the proposed effluent limits to ensure they are also protective of the spawning use during this period. The development of these limits is discussed below.

The revised TMDL developed WLAs for Odell STP under five different scenarios. The WLAs presented in Scenario 8 of the TMDL were applied in the previous permit. The Diamond Fruit-

<sup>1</sup> <https://www.oregon.gov/deq/FilterRulemakingDocs/figure160b.pdf>

<sup>2</sup> <https://secure.sos.state.or.us/oard/viewAttachment.action?ruleVrsnRsn=309323>

Odell facility terminated its NPDES permit on 15 November 2022 and now discharges solely to Odell STP, changing the applicable scenario from Scenario 8 (Odell STP with Diamond-Odell permitted flows) to Scenario 9 (Odell STP alone). Furthermore, the WLAs in Scenario 9 must be adjusted for the extended salmon and steelhead spawning season due to the newly identified existing use mentioned above.

The permit writer used Equation 3 in the revised TMDL to calculate a WLA for the April 15 to June 15 period when the 13 °C steelhead spawning criterion applies and the June 16 to September 30 period when the 16 °C core cold water habitat criterion applies. The equation is:

$$WLA = (HUA_{ps})(Q_e + Q_r)(C_f)$$

Where,

WLA = Wasteload allocation thermal load (gcal/day)

$HUA_{ps}$  = Portion of human use allowance allocated to point sources (°C)

$Q_e$  = Point source effluent flow (dry weather design flow) (cfs)

$Q_r$  = Upstream river low flow (estimated or measured low flow) (cfs)

$C_f$  = Conversion factor for calculating gcal/day from °C-ft<sup>3</sup>: (2.446665 gcal-s / °C-ft<sup>3</sup>-day)

The TMDL assigns Odell STP a human use allowance of 0.18 °C. Odell STP's average dry weather design flow is 0.42 mgd, which is equivalent to 0.65 cfs upon conversion.

For the April 15 to June 15 period, the upstream river low flow was calculated by averaging the late May and June minimum stream flows reported in Table D-3, resulting in a value of 9.35 cfs for  $Q_r$ . The WLA calculation is:

$$WLA = (HUA_{ps})(Q_e + Q_r)(C_f)$$

$$WLA = (0.18 \text{ °C}) \times (0.65 \text{ cfs} + 9.35 \text{ cfs}) \times (2.446665 \text{ gcal-s} / \text{°C-ft}^3\text{-day})$$

WLA = 4.404 million kcal/day rounded off to 4.4 million kcal/day (two significant figures)

For the June 16 to September 30 period, the upstream river low flow value is 8.5 cfs, occurring in September and reported in Table D-3. The WLA calculation is:

$$WLA = (HUA_{ps})(Q_e + Q_r)(C_f)$$

$$WLA = (0.18 \text{ °C}) \times (0.65 \text{ cfs} + 8.5 \text{ cfs}) \times (2.446665 \text{ gcal-s} / \text{°C-ft}^3\text{-day})$$

WLA = 4.02966 million kcal/day rounded off to 4.0 million kcal/day (two significant figures)

The WLAs are included in the proposed permit as static excess thermal load limits of 4.4 million kcal/day during the critical season when the 13 °C steelhead spawning criterion applies (April 15 - June 15) and 4.0 million kcal/day during the critical season when the 16 °C core cold water

habitat criterion applies (June 16 - September 30). The permit also includes flow-based allocations that are consistent with the TMDL.

Odell STP does not discharge into a waterbody that has summer 7DADM ambient temperatures that are colder than the biologically based rearing criterion, but it does discharge into salmon and steelhead spawning waters. The TMDL requires demonstration of compliance with subsection (b) of the Protecting Cold Water criterion (OAR 340-041-0028 (11)) during permit renewal. DEQ performed a reasonable potential analysis to assess Odell STP's compliance with this rule from January 1 - April 14, the portion of the salmon and steelhead spawning season without a designated WLA. The results of this RPA indicate there is no potential for Odell STP to cause the water temperature in Odell Creek to increase more than allowed under this rule subsection (Appendix A).

In addition to the requirement for the facility to address the WLA during the TMDL's critical period (April 15 – September 30), the TMDL also stated that outside of this period point sources are assigned their current load. During the previous permit renewal DEQ determined that a maximum weekly average effluent temperature of 24.1 °C for the remainder of the year met this requirement. This limit is retained in the proposed permit.

**Table 3-12: Temperature Criterion Effluent Limits**

<b>Effluent limit needed?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>TMDL WLA Limit:</b> <b>Option A:</b> 4.4 million kcal/day (as a 7-day rolling average) <b>Option B:</b> $0.18 \cdot (Q_e + Q_r) \cdot 2.447$ million kcal/day (as a 7-day rolling average) (see note a.)
Applicable time period: April 15 – June 15
<b>TMDL WLA Limit:</b> <b>Option A:</b> 4.0 million kcal/day (as a 7-day rolling average) <b>Option B:</b> $0.18 \cdot (Q_e + Q_r) \cdot 2.447$ million kcal/day (as a 7-day rolling average) (see note a.)
Applicable time period: June 16 – September 30
<b>TMDL Limit:</b> 24.1 °C weekly average maximum
Applicable time period: October 1 – April 14
<b>Temperature Criterion Limit:</b> NA
Applicable time period: NA

**Effluent limit needed?**  Yes  No

Notes:

- a. The permittee must select either Option A or Option B as the applicable 7-day rolling average ETLL. If the permittee selects Option B, the permittee must calculate the daily ETLL using the above equation. The permittee must then calculate the 7-day rolling average ETLL using the equation for each day the Option B limit is selected. The 7-day Rolling Average for any day is the average of the daily values for that day and the preceding six (6) days.

$Q_r$  is the daily average Odell Creek flow, upstream from the outfall (cfs) (measurement method must be approved by DEQ in writing prior to use of Option B).  $Q_e$  is the daily average effluent flow (cfs). When using Option B to calculate the ETLL and  $Q_r$  is less than the 7Q10 value, the 7Q10 must be used as a substitution for actual river flow in the equation listed above. The 7Q10 values are:

April 15 – June 15: 9.35 cfs

June 16 – September 30: 8.5 cfs

During the April 15 – May 15 and June 16 – September 30 periods, the limits presented in the table above are less stringent than those in the current permit. (They are more stringent during the May 16 – June 15 period where the spawning criterion is newly applied.) These less stringent limits are included in the TMDL's Scenario 9. As discussed in Sections 3.4 and 3.5, below, the new limits are allowed under the applicable antibacksliding and antidegradation regulations and are included in the proposed permit.

### 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 13°C or more for salmon and steelhead, and 9 °C or more for bull trout.

While this segment of the receiving stream is identified as having salmonid spawning use, there is no information indicating that there is an active salmonid spawning area where spawning redds are located or likely to be located within the mixing zone. 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. Since the likely location of any active salmonid spawning areas would be outside of the mixing zone, the impairment of an active spawning area is prevented or minimized.

- 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 °C or more to less than 2 seconds.

The maximum daily effluent temperature reported post-installation of the chiller units and thus expected to be maintained for the new permit cycle is 20.8 °C, well below the lethal criterion of 32 °C, thus acute impairment or instantaneous lethality are prevented.

- 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 °C or more to less than 5% of the cross-section of 100% of the 7Q10 flow of the water body.

The maximum effluent temperature reported post-installation of the chiller units and thus expected to be maintained for the new permit cycle is 20.8 °C. Since the maximum effluent temperature is below 25 °C, thermal shock caused by the discharge is prevented or minimized.

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

The maximum effluent temperature reported post-installation of the chiller units and thus expected to be maintained for the new permit cycle is 20.8 °C. Since the maximum effluent temperature is below 21 °C, migration blockage caused by the discharge is prevented or minimized.

There are no effluent limits needed to comply with thermal plume requirements.

**Table 3-13: Thermal Plume Effluent Limit**

Effluent limit needed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Calculated limit:</b> NA
<b>Applicable timeframe:</b> NA
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. 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.

**Table 3-14: Proposed *E. coli* Limits**

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

### **3.3.9 Dissolved Oxygen**

The previous permit contained seasonal limits for Dissolved Oxygen based on prior policy. Review of DO limits is only required when the permittee requests a BOD<sub>5</sub> mass load increase or discharges into a receiving water that is 303(d) listed for DO. Since neither of these conditions apply, the DO limits do not need to be reviewed. The current limits will be retained in the renewed permit to address anti-backsliding and anti-degradation. DO compliance monitoring will be retained at the same frequency as the previous permit.

### **3.3.10 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.

#### **3.3.10.1 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. The following table provides a summary of the data used for the ammonia analysis and the results of the analysis.

Only temperature data collected post-installation of the chiller units was used in this analysis, spanning from April 14th, 2023 to Dec 31, 2023. Upon installation of the chiller units, Odell STP had completed its compliance schedule to meet its temperature limits and therefore, only values reported post installation are representative of the effluent temperatures expected in the next permit cycle.

Odell STP does not have an existing ammonia limit. DEQ found no reasonable potential for Odell STP to exceed the ammonia criteria resulting from this analysis.

**Table 3-15: Ammonia Analysis Information - Summer**

	Acute (ug/L)	Chronic (ug/L)	
		4-day	30-day
Dilution	1.3	2.4	2.7
Ammonia Criteria	14.0	4.3	1.7
<b>Effluent Data Used</b>			
Ammonia (mg/L)	1.2	1.2	
pH (SU)	7.2	7.2	
Temperature (°C)	19.4	19.4	
Alkalinity (mg/L CaCO3)	70.3	70.3	
<b>Receiving Stream Data Used</b>			
Ammonia (mg/L)	0.6	0.6	
pH (SU)	7.6	7.6	
Temperature (°C)	17.7	17.7	
Alkalinity (mg/L CaCO3)	55.2	55.2	
Ammonia Limit Needed?	No		
Calculated Limits	AML	MDL	
Ammonia (mg/L)	na	na	
<b>Effluent data source</b>			
Ammonia, pH, and alkalinity - DMRs 2019 - 2023. Temperature - DMRs post installation of the chiller units (04/14/2023-12/31/2023).			
<b>Ambient data source</b>			
Ammonia, pH, and alkalinity - DMRs 2022 - 2023 Temperature – DMRs 2019 - 2023			

**Table 3-16: Ammonia Analysis Information - Winter**

	Acute (ug/L)	Chronic (ug/L)	
		4-day	30-day
Dilution	1.3	2.4	2.7
Ammonia Criteria	14.2	5.4	2.1
Effluent Data Used			
Ammonia (mg/L)	2.6	2.6	
pH (SU)	7.4	7.4	
Temperature (°C)	17.5	17.5	
Alkalinity (mg/L CaCO <sub>3</sub> )	74.1	74.1	
Receiving Stream Data Used			
Ammonia (mg/L)	0.2	0.2	
pH (SU)	7.6	7.6	
Temperature (°C)	10.9	10.9	
Alkalinity (mg/L CaCO <sub>3</sub> )	63.0	63.0	
Ammonia Limit Needed?	No		
Calculated Limits	AML	MDL	
Ammonia (mg/L)	na	na	
Effluent data source			
Ammonia, pH, and alkalinity - DMRs 2019 - 2023. Temperature – 2023 DMRs post-installation of the chiller units			
Ambient data source			
Ammonia, pH, and alkalinity - DMRs 2022 - 2023 Temperature – DMRs 2019 - 2023			

**3.3.10.2 Mercury – Human Health Criterion**

DEQ determined that this facility is not a likely source of mercury. Therefore, no additional controls or monitoring will be required.

**3.3.11 Other Pollutants of Concern**

As indicated in section 3.3.2, Odell Creek is listed as water quality limited for five pesticides, DDD 4,4', DDE 4,4', DDT 4,4', Guthion, and Dieldrin. The DEQ does not consider these pesticides as pollutants of concern because:

- Dieldrin and DDT are legacy pesticides that are currently prohibited from use. The DDE and DDD are production and degradation byproducts of DDT. These compounds are persistent and bioaccumulative in the environment. They are not

currently in use and therefore, they are not expected to be present in the STP discharge.

- Guthion is an organophosphate pesticide that was commonly used on apples, pears, and other fruit in the United States. In September 2013, the USEPA banned the domestic use of Guthion and the presence of this pesticide has not been detected in the Hood basin in the past ten years. Since the pesticide is no longer in use it is unlikely to be present in the fruit process water the facility receives from Mt. Adams, Diamond-Odell, Diamond-Central, and Duckwall-Pooley fruit processors, and therefore, Guthion is not expected to be present in the STP's discharge.

Carbaryl is a pesticide that is used as a chemical fruit thinner. It has been identified as a potential pollutant of concern due to its detection in Odell Creek and the reasoning that it could be effectively concentrated by the fruit rinsing/flotation process. The STP receives a significant amount of discharge from fruit processing facilities and if carbaryl were to be present in their discharge it would likely pass through the STP untreated.

Monitoring of the effluent for carbaryl was required quarterly for one-year post-issuance of the previous permit. All four monitoring results were below the detection limit of 1.0 µg/L, which is less than USEPA's acute and chronic water quality criteria of 2.1 µg/L for protecting freshwater organisms from potential effects of carbaryl. Although carbaryl was not detected in the effluent, additional monitoring is required due to its continued use and the increase in volume of discharge Odell STP receives from the fruit processing industries. See section 2.3.

The permit requires the STP to monitor carbaryl for four calendar quarters. The presence of carbaryl in the effluent would likely trigger the need for a pretreatment program. DEQ has added a carbaryl summary report requirement to Schedule D due to these circumstances.

### **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). Except for the excess thermal load limits, the proposed limits are the same or more stringent than the existing permit so the antibacksliding provision is satisfied. As discussed in Section 3.3.7 above, during the April 15 – May 15 and June 16 – September 30 periods the excess thermal load limits in the proposed permit are less stringent than the limits in the existing permit. Although antibacksliding provisions generally do not allow relaxation of effluent limits in renewal permits, section 303(d)(4)(A) of the Clean Water Act allows relaxation when the receiving water is not in attainment for the limiting or related pollutant, the effluent limit is based on a TMDL wasteload allocation (WLA), and it can be shown that relaxation is consistent with antidegradation requirements. As noted above, the receiving water is water quality limited for temperature and the new, less stringent excess thermal load limits are based on TMDL WLAs. It also complies with the antidegradation requirement since TMDL WLA ensures the temperature increase is an insignificant increase according to the Oregon's antidegradation rule, OAR 340-041-0004(3)(c). Therefore, the new thermal load limits based on the TMDL wasteload allocations are allowed and are included in the proposed permit.

## **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 discharge loadings as the existing permit, except for the temperature (excess thermal load) limits as discussed in Section 3.3.7. Under Oregon's Antidegradation Rule, discharges with insignificant temperature increases are not considered degradation (OAR 340-041-0004(3)(c)). Specifically, the rule states that insignificant temperature increases authorized under OAR 340-041-0028(11) and (12) are not considered a reduction in water quality. Section 3.3.7 of this report provides an analysis of the temperature impacts of this discharge and determines appropriate effluent limits to ensure the discharge will result in temperature increases at or below those authorized under OAR 340-041-0028(11) and (12). Based on OAR 340-041-0004 and Section 3.3.7 of this report, the discharge from the facility does not have the potential to reduce water quality as it pertains to temperature.

The designated beneficial uses for the receiving stream are listed in Section 3.3.1. As noted in Section 3.3.7, DEQ determined that salmonid spawning for the January 1 – June 15 period is an existing use that is not currently designated. DEQ's analyses presented in that section indicate that the proposed permit limits ensure the discharge will not adversely impact salmonid spawning. Therefore, DEQ has determined that the proposed discharge complies with DEQ's antidegradation policy.

## **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 with the potential to leach contaminants into the groundwater. No groundwater issues or potential impacts to groundwater have been identified at this facility. Therefore, no groundwater monitoring or limits are required. Any groundwater concerns associated with the permittee's land application of Class B biosolids are evaluated in the biosolids management plan (BMP).

# **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 permit holder currently produces a Class B biosolids for land application by distribution or sale and anticipates continuing to do so. DEQ reviewed the biosolids management plan and land application plan. These are available for public review and comment along with the permit. Once approved after public comment, conditions in the biosolids management plan and land application plan 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
- The permittee must have written site authorization for each location from DEQ before land applying and abide by the restrictions for each site
- Prior to application, the permittee must ensure that biosolids meet one of the pathogen reduction standards under 40 CFR 503.32
- The permittee must not apply biosolids containing pollutants in excess of the ceiling concentrations for the nine metals shown in Schedule A of the permit

## 4.3 Recycled Water

A recycled water use plan was developed and included in the previous permit because at that time the permittee was inquiring with local orchards about recycled water use interest. The permittee has notified DEQ that the orchards are not interested, and the facility does not intend to recycle any water. Thus, the recycled water use plan has been omitted for this permit cycle.

## 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. DEQ has determined that effluent characterization and monitoring of the receiving stream (Odell Creek) for pH, ammonia, alkalinity, and temperature is necessary to fully evaluate the facility's site specific conditions.

## **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 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 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.

### **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 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.

## **7.7 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.

## **7.8 Spill/Emergency Response Plan**

The permittee must have an up-to-date spill response plan for prevention and handling of spills and unplanned discharges. The permittee must develop and implement a management plan for use of glycol solution in the cooling system (chillers).

## **7.9 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.

## **7.10 Outfall Inspection**

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

## **7.11 Carbaryl Summary Report**

A condition that requires the permittee to submit a carbaryl summary report directly to the compliance inspector upon completion of carbaryl monitoring.

# **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: Reasonable Potential Analysis**

Analysis for protecting cold-water criteria, rule OAR 340-041-0028(11)(b)

<b>Stream Meets Spawning Water Quality Criterion (OAR 340-041-0028(11)(b))</b>		
For situations where the receiving stream 60DADM temperatures are below the criterion. Analysis is at 100% stream flow (full mix). This assessment is in addition to the numeric criterion RPA.		
Section 5.5 of the Temperature IMD		
Facility Name:	Odell STP	Date: 2/26/2024
Applicable Criterion and Season: Salmon/Steelhead Spawning 13° C criterion applies Jan 1 - June 15, but TMDL covers April 15 - June 15, so this analysis was conducted for the Jan 1 - Apr 14 season.		
Enter data into white cells below:		
Ambient Flow =	8.4 cfs	Data Metric/Source
Ambient Temperature =	6.4 °C	7Q10 derived from Hood River/Odell Creek flow ratio
Effluent Flow =	0.41 mgd	60 dAM from 2019-2023 monthly DMRs
Effluent Temperature =	14.6 °C	60 dAM actual flows 2019-2023 monthly DMRs
Allowable increase when ambient ≥ 10°C:	0.5 °C	60 dAM from 2019-2023 monthly DMRs
Allowable increase when ambient < 10°C:	1 °C	From OAR 340-041-0028(11)(b)
100% dilution =	14	dilution = (Qe+Qr)/Qe
<b>When ambient ≥10°C: ΔT at 100% Stream Flow = 0.32 °C No Reasonable Potential</b>		
<b>When ambient ≤10°C: ΔT at 100% Stream Flow = 0.58 °C No Reasonable Potential</b>		

Equation used to calculate ΔT in 100% of the stream

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

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<sub>all</sub> = Allowable temperature increase at edge of MZ (°C)
- Cp = Specific Heat of Water (1 cal/g °C)
- ρ = Density of Water (1 g/cm<sup>3</sup>)
- 3785.41 = Flow conversion from mgd to m<sup>3</sup>/day

### Thermal Plumes OAR 340-041-0053(2)(d) Part D Analysis

<b>Temperature Thermal Plume Limitations within the Mixing Zone Rule (OAR 340-041-0053(2)(d))</b>		
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 salmonids (See associated notes in the "Thermal Plumes Instructions".) This spreadsheet assesses compliance with OAR 340-042-0053(2)(d) subparts C and D.		
Facility Name:	Odell STP	Date: 2/26/2024
<b>OAR 340-041-0053(2)(d)(D): Migration Blockage</b>		
<b>21 deg C at 25% of the stream cross section</b>		
Enter data into white cells below:		
7Q10 =	3.6 cfs	Data Metric/Source
Ambient Temperature =	19.7 °C	7Q10 Flow from MZ memo
Effluent Flow =	0.63 mgd	Maximum daily maximum from ICIS summary stats
Max 7dAM Effluent Temperature =	20.8 °C	ADWDF x Peaking Factor (1.5)
		Maximum daily effluent temperature from monthly DMRs post-installation of the chiller units
25% of 7Q10 =	0.9 cfs	
25% dilution =	2	dilution = (Qr*0.25)/Qe + 1
<b>Temperature at 25% cross section = 20.3 °C No Reasonable Potential</b>		
<b>ΔT at 25% Stream Flow = 0.6 °C</b>		

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<sub>all</sub> = Allowable temperature increase at edge of MZ (°C)
- Cp = Specific Heat of Water (1 cal/g °C)
- ρ = Density of Water (1 g/cm<sup>3</sup>)
- 3785.41 = Flow conversion from mgd to m<sup>3</sup>/day