Location: City Hall – Council Chambers
Date: September 27, 2022
Time: 6:00 PM

City Council Meeting Agenda

Mayor Jason Beebe, Council Members Steve Uffelman, Janet Hutchison, Patricia Jungmann, Gail Merritt, Jeff Papke, Raymond Law and City Manager Steve Forrester

ATTEND TELEPHONICALLY BY CALLING 346-248-7799 Meeting ID: 947 5839 2608 Passcode: 123456

Call to Order

Flag Salute

Additions to Agenda

Consent Agenda

1. Regular Meeting Brief 9-13-2022
2. Annual Liquor License Renewals

Visitors, Appearances and Requests

Council Presentations

Council Business

3. Industrial Pre-Treatment Plan **(PUBLIC HEARING)** - Josh Smith
4. Intent to Award Water Re-Use Project - Eric Klann

Staff Reports and Requests

5. City Manager's Report - Steve Forrester

Committee Reports

Ordinances

Resolutions

Visitors, Appearances and Requests

Adjourn

Agenda items maybe added or removed as necessary after publication deadline

CITY OF PRINEVILLE
Regular Meeting Brief
387 NE Third Street – Prineville, OR 97754
541.447.5627 ph 541-447-5628 fax

Full Meeting Recordings Available at:
http://cityofprineville.com/meetings/

City Council Meeting Brief
September 13, 2022

Council Members Present:
Steve Uffelman
Jason Beebe
Janet Hutchison
Patricia Jungmann
Gail Merritt
Ray Law

Council Members Absent
Jeff Papke

Additions to the Agenda
None.

Consent Agenda

1. Regular Meeting Brief 8-23-2022
2. Annual Liquor License Renewals
3. Dad's Place – Change in Ownership Liquor Application

Councilor Hutchison made a motion to approve consent agenda as presented. Motion seconded. No discussion on motion. Motion carried.

Visitors, Appearances and Requests

No one came forward.

Council Presentations

There were no Council Presentations.

Council Business

There was no Council Business.

Staff Reports and Requests:

4. **City Manager's Report–** Steve Forrester

Mr. Forrester went through his Manager's Report that highlighted activities for each department.

Casey Kaiser, Senior Planner/Public Works Director gave an update for an award from National Public Works Association (NPWA) that the city is receiving on the Aquifer Storage and Recovery (ASR) project. An email will follow with details of when the award ceremony will happen.

Matt Weiderholt, Railroad Manager came up to talk about the national railroad strike that may happen on Friday. Class I railroads are starting to store cars in secure areas. Railroad union negotiations have been going since 2019 and have been in a cooling off period. As of this afternoon 10 of the 12 unions have agreed verbally, the two largest are holding strong for the strike. Incoming traffic will slow down for our railroad. There could be an economic impact estimated at $2B per day if the strike goes through. An embargo will be put on automobiles effective tomorrow.

Mr. Forrester provided an Ochoco Irrigation District (OID) update explaining that irrigation will begin shutting down for the season. They are predicting a polar vortex to hit us this winter which could help water levels, however they have been predicting that the last couple of years.

Mayor Beebe would like to see an educational outreach on water flows and levels because there is a lot of misconception out there.

5. **Meadow Lakes Update –** Zach Lampert

Zach Lampert, Golf Pro / Facility Manager went through a power point presentation. The presentation highlighted golf rounds over last 10 years and how rounds effect how all other areas perform at the golf course. Mr. Lampert went through trends for daily green fees, and merchandise sales explaining it is harder to order merchandise now. Total golf revenue sums up everything that isn't restaurant.

Mr. Lampert showed the national golf trend with blue representing states that are down in rounds and how well the city compared nationally.

Mr. Lampert had a graph for the fund balance since FY09 and its gradual increase since then. He explained Meadow Lakes is a thirty year old facility and some things have to be taken care of. The report continued regarding dollars spent on capital projects since FY 2014, capital improvement projects completed over last couple years, upcoming projects that are budgeted and on the radar projects. Ron's café is now fully staffed and will be open seven days a week and there have even been discussions about serving dinner.

Discussions continued with increase in revenues, irrigation project completed making golf course looking best it ever has, and parking lot improvements being very important.

6. **Quarterly Financial Report –** Lori Hooper

Lori Hooper, Finance Director presented a power point presentation that summarized all city funds combined. Major expenditures for the General Fund for FY 22. There were graphs that illustrated the General Fund beginning fund balance trends, current property tax collections which has come in higher than projected, electrical franchise fees, and transient lodging tax which is also up.

Ms. Hooper continued with the Transportation Fund, gas tax collection is up over the prior year. Material & services may need a budget adjustment and the beginning fund balance trends which is up this last year.

Railroad revenue is at 105%. Labor negotiations were completed and may need a budget adjustment. Profit & Loss statements showed a profit in all three months of the quarter.

In the Airport Fund airport charges for services are up.

In the Golf Course fund there was a budget adjustment done and referred to Mr. Lampert's update covering everything else.

Committee Reports

Councilor Uffelman and Justin Severance, Street Supervisor both attended a COACT meeting. There are federal funds available for improvements provided that you have a traffic safety action plan and we as a city need to have an action plan. Mr. Severance will be meeting with Mr. Forester to get that plan initiated.

Councilor Uffelman also attended the Community Renewable Energy Association (CREA) meeting and there is a legislative day coming up to take a tour with state representatives and those running for office to see renewable energy generation projects.

Ordinances:

None.

Resolutions

7. **Resolution No. 1537– Approving Subgrant Agreement with Crook County for COVID State Fiscal Recovery Fund Grant Agreement -** Jered Reid

Mr. Reid explained that this might look familiar because the city recently passed a resolution for this funding. It was determined that an agreement is needed with the County since these funds will be distributed to the county to distribute to the city.

There were no questions.

Councilor Merritt made a motion to approve Resolution No. 1537. Motion seconded. No discussion on motion. All in favor, motion carried.

Visitors, Appearances and Requests:

No one came forward.

Adjourn

Councilor Hutchison made a motion to adjourn the meeting. Motion seconded. No discussion on motion. All in favor, motion carried.

Meeting adjourned at 7:00 P.M.

Motions and Outcomes:

Motion:	Outcome	Beebe	Hutchison	Jungmann	Law	Merritt	Papke	Uffelman
Consent Agenda	PASSED	Y	Y	-	Y	Y	-	Y
Resolution No. 1537– Approving Subgrant Agreement with Crook County for COVID State Fiscal Recovery Fund Grant Agreement	PASSED	Y	Y	Y	Y	Y	-	Y
Adjourn Meeting	PASSED	Y	Y	Y	Y	Y	-	Y

Public Records Disclosure

Under the Oregon public records law, all meeting information, agenda packets, ordinances, resolutions, audio and meeting briefs are available at the following URL: https://www.cityofprineville.com/meetings .

Annual Liquor License Renewals

September 27, 2022

Tacos Morales

Horseshoe Tavern

Sons of Beer

Apple Peddler

Lucky 7

Towne Pump & Pantry

STAFF REPORT

MEETING DATE: 9/27/2022 **PREPARED BY:** Planning/Public Works

SECTION: Staff Reports and Requests **DEPARTMENT:** Public Works

CITY GOAL: Fiscal Responsibility, Provide Quality Municipal Service & Programs

SUBJECT: Industrial Pretreatment Program

REASON FOR CONSIDERATION:

The Industrial Pretreatment Program is nearing completion. A few items have been provisionally approved by the Oregon Department of Environmental Quality (DEQ) that require public review prior to final approval.

BACKGROUND:

Recent increase in industry within the City has resulted in some industrial and commercial sewer users that discharge greater than 25,000 gallons per day of sewage. These types of discharges have triggered the DEQ requirement for the City to develop an Industrial Pretreatment Program. For this program, several documents have been updated or created that require the public review process. These documents include updates to City code; Chapter 53 (Wastewater), Chapter 51 (Sewer) and the creation of Chapter 54 (Sewer Extra Strength Charge) and the Local Limits Report. Please refer to the attached memorandum from Anderson Perry & Associates, Inc., for additional details regarding these documents.

FISCAL IMPACT:

No fiscal impact is anticipated from the documents themselves. However, the administration of the City's Industrial Pretreatment Program is anticipated to cost between $30,000 and $40,000 annually.

RECOMMENDATION:

City Staff recommends City Council accept the Local Limits Report and direct staff to develop an Ordinance adopting updates to Chapters 51 and 53 and creating Chapter 54. The Ordinance will be brought back to the next Council meeting for its first presentation.

anderson perry & associates, inc.

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engineering ▪ surveying ▪ natural resources

MEMO

To:	City of Prineville City Council
From:	Treyton Moore, P.E.
Subject:	**City of Prineville, Oregon - Industrial Pretreatment Program Implementation**
Date:	May 24, 2022
Job/File No.	1260-05-02
cc:	Eric Klann, City of Prineville (w/encl.) Jason Wood, City of Prineville (w/encl.) Jacob Zeigler, City of Prineville (w/encl.) Brett Moore, Anderson Perry & Associates, Inc. (AP) (w/encl.)

Introduction

In the past few years, industry within the City of Prineville has grown, with several commercial and industrial users reaching sewer discharges of greater than 25,000 gallons per day (gpd). Industrial users who discharge sewage in volumes greater than or equal to 25,000 gpd are recognized by the Oregon Department of Environmental Quality (DEQ) as Significant Industrial Users (SIUs). The establishment of SIUs within the city limits has triggered the DEQ to implement a requirement for the City to develop and administer an Industrial Pretreatment Program (IPP). A fundamental part of the IPP includes developing local limits or limits on the concentrations of pollutants that industries are permitted to discharge to the City's sewer system. The purpose of this memo is to inform the City of the work that has been done to develop the IPP and educate the public so the appropriate public review procedures can be followed.

Purpose of the Industrial Pretreatment Program

Historically, IPPs have been developed for several reasons. The primary focus of IPPs is to help protect a municipality's wastewater treatment plant, sewer system, downstream waterbodies, and/or environment from harm that could result from pollutants discharged by industrial users. Pollutants contained in industrial wastewater can vary significantly from those in municipal wastewater. At certain concentrations, some industrial pollutants can damage treatment equipment, clog sewers, pass through treatment plants untreated, and/or inhibit treatment, potentially causing downstream pollution. These pollutants have been identified as pollutants of concern by the DEQ. A properly administered IPP puts the responsibility and liability for removing these pollutants on the industries producing them, so the City does not need to purchase extremely expensive equipment required for proper treatment of industrial pollutants.

In addition to protecting the City's wastewater treatment facility (WWTF), an IPP also helps ensure that the financial impact from industrial wastewater does not disproportionately impact the City's municipal rate payers. Some industrial users have high water uses and, therefore, high sewer

discharges. An IPP can help monitor the quantity of wastewater produced by an industrial user and aid the City in charging such users proportionally based on discharge quantity if the City desires to do so.

Council Action Items

In developing the IPP, two documents were produced that require public notice and review before they can be finalized by the DEQ. The first is the Local Limits Report, which has been included with this memo as Attachment 1. The Local Limits Report outlines the process used to calculate limits for pollutants of concern and presents the established limits for use when administering the IPP.

The second item includes suggested updates to the City's Municipal Sewer Use Ordinance (see Attachment 2). In 2018, the City updated their Sewer Use Ordinance to add Chapter 53 to establish the City's authority to implement and administer an IPP. Now that local limits have been developed, modifications to Chapters 51 and 53 have been suggested that would incorporate these new limits into the Municipal Sewer Use Ordinance.

Additionally, AP has created Chapter 54 for the Municipal Sewer Use Ordinance as a potential suggestion to provide scaled sewer rates that charge industrial users more if they discharge higher volumes of wastewater or wastewater with higher organic loadings. Although these types of loadings or volumes of wastewater may not have substantial negative impacts on the WWTF itself, they consume disproportionate amounts of the WWTF's treatment capacity. Many municipalities have incorporated similar scaled wastewater rates to ensure that extra-strength wastewater dischargers or high-volume wastewater dischargers pay proportional rates based on the excess capacity being utilized, as multiple users of this nature would ultimately accelerate the need for future expansion of the WWTF. AP has prepared Chapter 54 to provide a basis for an extra-strength charge if the City elects to implement such a policy.

Note that these Sewer Use Ordinance suggestions are provided simply for Council consideration. They have already been reviewed and provisionally approved by the DEQ, should the City choose to implement such changes.

Conclusion

Local limits have been developed to aid the City in implementing an IPP as directed by the DEQ. The purposes of such limits have been outlined, and the attached Local Limits Report describes the processes used in developing these limits. In addition, suggested Municipal Sewer Use Ordinance updates have been developed to aid the City in incorporating these local limits and guide the City in developing an extra-strength user charge should they elect to do so.

TM/bh
Enclosure
G:\Clients\Prineville\1260-05 General Engineering\(013) Industrial Pretreatment Program\Correspondence\Prineville City Council IPP Memo\Memo.docx

LOCAL LIMITS REPORT

SEPTEMBER 2020

Prepared for the
City of Prineville, Oregon

anderson perry

1901 N. Fir Street, La Grande, Oregon
214 E. Birch Street, Walla Walla, Washington
2659 S.W. 4th Street, Suite 200, Redmond, Oregon
243 E. Main Street, Suite C, Hermiston, Oregon

LOCAL LIMITS REPORT

FOR

CITY OF PRINEVILLE, OREGON

SEPTEMBER 2020

ANDERSON PERRY & ASSOCIATES, INC.

La Grande, Redmond, and Hermiston, Oregon
Walla Walla, Washington

 Job No. 1260-05

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TABLES

APPENDICES

Introduction

The purpose of this Report is to present the development of maximum allowable headworks loadings (MAHLs) and maximum allowable industrial loadings (MAILs) for pollutants of concern (POC) to the City of Prineville, Oregon, as part of the City's Industrial Pretreatment Program (IPP). The development of MAHLs and MAILs allows the City to determine whether the implementation of local limits would be required to adequately protect the City's wastewater treatment facility (WWTF) from potential treatment inhibition or POC introduction in quantities that may pass through the WWTF and cause violation of the City's National Pollutant Discharge Elimination System (NPDES) permit.

Background

Wastewater Treatment Facility Description

This section provides a general overview of the City's WWTF. Wastewater from the collection system undergoes influent screening and grit removal. Following preliminary treatment, wastewater flow is split to either Plants 1 or 2, as shown on Figure 1 - Treatment Process Flow Schematic, in Appendix A. Below are descriptions of the treatment processes performed by Plants 1 and 2.

Plant 1

Plant 1 features a partially aerated primary lagoon followed by a secondary lagoon. Following the secondary lagoon, chlorine is injected into the oxidized wastewater, which then flows through the chlorine contact chamber and to an irrigation storage lagoon (referred to as the "Golf Course Irrigation Storage Lagoon"). Treated wastewater from the Golf Course Irrigation Storage Lagoon is then beneficially reused as irrigation water at the City-owned Meadow Lakes Golf Course located nearby.

Plant 2

Plant 2 features two aerated primary lagoons in series followed by a secondary lagoon. After the secondary lagoon, chlorine is injected into the oxidized wastewater, which then flows through the chlorine contact chamber and into an irrigation storage lagoon (referred to as the "Kidney Pond"). Treated wastewater in the Kidney Pond is then either beneficially reused for irrigation at nearby pastureland or flows to bentonite-lined treatment wetlands for additional treatment. After receiving additional treatment, the treated wastewater is indirectly discharged to the Crooked River via unlined disposal wetlands. Both plants are connected by piping for operational flexibility.

Regulatory Water Quality and Sludge Standards

The WWTF's NPDES Permit contains discharge limits for the following parameters: five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), pH, and E. coli bacteria. For many of the POCs resulting from industrial practices, the City's NPDES Permit requires the WWTF to "comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rule (OAR) 340-041-0033 and section 307(a) of the federal Clean Water Act for toxic pollutants." The OAR contains reference to multiple tables with water quality criteria for multiple pollutants (see Appendix B). These water quality criteria are based on acute and chronic toxicity to

aquatic wildlife and for human consumption. Three tables establish these water quality criteria as follows:

- Table 30 lists water quality criteria for aquatic species as established by the Environmental Protection Agency (EPA).
- Table 31 lists water quality criteria for aquatic species used by the Oregon Department of Environmental Quality for permitting. These criteria include more compounds than Table 30 and have tighter standards for some of the parameters listed on Table 30.
- Table 40 lists water quality criteria for human health as approved by the EPA in April 2014.

Because the City indirectly discharges to the Crooked River via disposal wetlands, groundwater quality criteria also apply to the City's effluent. Tables with reference levels for groundwater quality are found in OAR 340-40-0030. The three tables that establish groundwater quality references are as follows (see Appendix B):

- Table 1 lists numerical groundwater quality reference levels for inorganic contaminants.
- Table 2 lists numerical groundwater quality reference levels for organic contaminants.
- Table 3 lists numerical groundwater quality reference levels for miscellaneous contaminants.

Sampling and Analysis Plan Summary

To have sound, technically based local limits, the City developed a sampling and analysis plan (SAP). The SAP was developed to obtain quantitative information regarding the concentration, loads, and seasonal fluctuations of specific pollutants entering the City's collection system and WWTF. Results from the SAP were used to quantify pollutant concentrations in the following areas:

1. WWTF headworks, effluent, and unit operations for both treatment plants to determine the removal efficiencies of each POC throughout each plant.

2. Significant industrial user (SIU) process wastewater discharge locations to determine existing discharge concentrations from SIUs.

3. An area of the collection system not impacted by industrial users to determine background concentrations of pollutants from unregulated residential and commercial zones.

Pollutants monitored under the SAP included 14 of the 15 national POCs, as listed below. Ammonia, the fifteenth national POC, was excluded from sampling because it is not known to be contributed by industrial sources.

- Arsenic
- BOD_5
- Cadmium
- Chromium
- Copper

- Cyanide
- Lead
- Mercury
- Molybdenum
- Nickel
- Selenium
- Silver
- TSS
- Zinc

Monitoring Results

Sampling results at the various locations have been summarized and are included in Appendix C. The results were compiled by the City and entered into a spreadsheet, which was sent to Anderson Perry & Associates, Inc., for analysis. Table 1 below shows the number of samples collected at each sampling point.

TABLE 1
SAMPLING LOCATIONS AND FREQUENCY

Location	Number of Samples
Influent	8
Plant 1 Primary Effluent	7
Plant 2 Primary Effluent	7
Plant 1 Effluent	7
Plant 2 Effluent	7
Apple Effluent	8
Facebook Effluent	7
Manhole 857 Domestic Non-industrial	7
Plant 1 Pretreatment Sludge	2
Plant 2 Pretreatment Sludge	2
Plant 1 Sludge	2
Plant 2 Sludge	2

Conventional Pollutants

Conventional pollutants include BOD_5, TSS, and fats, oils, and grease (FOG). Though the WWTF is approaching treatment capacity for BOD_5, the total flow coming from the currently permitted Industrial Users (IUs) equates to approximately 0.06 million gallons per day, or 6 percent of the entire contributing flow to the WWTF. Furthermore, these IUs are not industries that produce excessive quantities of these pollutants. In addition, FOG has historically been managed through best management practices (BMPs)

via the use of grease traps and/or grease interceptors. BMPs will continue to be implemented and monitored for the control of FOG.

For these reasons, no numeric local limits are established in this Report for conventional pollutants. However, to ensure that any existing industrial or commercial users that contribute BOD_5 loads in concentrations higher than the typical domestic load are equitably charged for the extra WWTF capacity consumed by their load, the City has elected to establish a "soft" BOD_5 and TSS limit of 400 milligrams per liter (mg/L). Users that exceed this limit may be subject to additional charges based on the amount of extra load in their discharged wastewater.

The 400 mg/L limit was determined based on the measured concentrations for BOD_5 and TSS in the City's domestic waste stream. Average domestic concentration for BOD_5 and TSS during the City's sampling were approximately 275 mg/L and 200 mg/L, respectively, with maximum domestic concentrations for BOD_5 and TSS reaching approximately 335 mg/L and 340 mg/L, respectively. To determine the 400 mg/L limits, the maximum sample concentrations were multiplied by a 10 percent safety factor then rounded up to the nearest 50 mg/L.

Local limits for conventional pollutants may need to be reevaluated should an industry with high conventional pollutant loading (e.g., brewery, slaughterhouse, or other food processing industry) connect to the City's collection system.

Maximum Allowable Headworks Load Development

Removal Efficiencies

In developing the MAIL, removal efficiencies for the pollutants found in the liquid stream were calculated through the entirety of the WWTF and through the primary treatment lagoon. These removal efficiencies were calculated for all monitored pollutants. Removal efficiencies were calculated using the Mean Removal Efficiency method (described in Chapter 5 of EPA Local Limits Guidance) as shown in Equation 1.

Equation 1: Mean Removal Efficiency

$$\%Removal = \frac{Avg.Influent_{Conc.} - Avg.Effluent_{Conc.}}{AvgInfluent_{Conc.}}$$

This method was chosen because it dampens daily variability in removal efficiency when limited sample quantities are available. Appendix C includes the average influent and effluent concentrations for the overall plant and for the primary treatment.

Negative Removal Efficiencies

While calculating removal efficiencies, some efficiency values were negative for a POC.

For the average cyanide samples, the average influent concentration was lower than the effluent concentration through Plant 1's secondary treatment. The lower effluent concentration resulted in a negative average removal efficiency of approximately 18 percent for Plant 1. Review of the sampling results in Appendix C revealed that the cyanide result at the Plant 1 effluent for December 17, 2018, was an order of magnitude higher than any other sample

results in the data set. The extreme difference between this one sample and all other cyanide samples at all other locations in Plant 1 suggests that this result may be inaccurate. All samples taken after this date were close to or below the minimum detection limit for cyanide. Due to the limited number of positive detections, this negative removal efficiency was kept to provide a conservative method of calculating the allowable headworks loading (AHL).

The average selenium influent concentration was lower than the effluent concentration through Plant 1's secondary treatment. This lower effluent concentration resulted in a negative average removal efficiency of approximately 57 percent for Plant 1. Review of the sampling results in Appendix C revealed that the cyanide result at the Plant 1 effluent for April 9, 2019, was approximately an order of magnitude higher than any other Plant 1 effluent sample result. The overall negative removal rate through Plant 1 for April 9, 2019, was approximately 546 percent, suggesting that this sample result may be inaccurate. Removing the sample results for this date results in an overall average removal efficiency of approximately 45 percent for Plant 1; however, the overall local limit for selenium would be minimally impacted due to the low overall removal efficiency through Plant 2. For this reason, the negative removal efficiency for selenium was kept to provide a conservative method of calculating the AHL.

Allowable Headworks Loading Calculations

AHL calculations were performed for the applicable criteria of water quality and unit operation inhibition. The City's WWTF is a lagoon system and, therefore, does not regularly waste its sludge. For this reason, AHL calculations were not performed based on sludge quality. In addition, the WWTF is not currently regulated for air pollution and does not have required air emission standards. Consequently, air quality-based AHLs were not developed in this analysis.

Water Quality-based Allowable Headworks Loadings

Though the City's NPDES Permit does not specifically list pollutant concentrations for many of the POCs for the industrial pretreatment program, the Permit does require that "no waste shall be discharged or activities conducted that cause or contribute to a violation of water quality standards." Because the City's effluent is considered indirect discharge, there is no mixing zone study available. For this reason, groundwater quality standards were used in developing the water quality-based AHLs. Tables 1 and 3 from OAR 340-040-0030 were used as reference levels for the available POCs. For POCs that did not have reference levels available in OAR 340-040-0030, the federal Water Quality Criteria for Human Health were used. Table 2 shows the water quality reference levels used for determining the AHL.

Table 2
Groundwater Quality Reference Levels

Pollutant	Groundwater Quality Criteria (µg/L)
Antimony	5.1
Arsenic	50
Barium	1,000
Cadmium	10
Chromium	50

Pollutant	Groundwater Quality Criteria (µg/L)
Copper	1,000
Cyanide	130
Iron	300
Lead	50
Mercury	2
Molybdenum	N/A
Nickel	140
Selenium	10
Silver	50
Thallium	0.043
Zinc	2,100

µg/L = micrograms per liter

Two different equations are typically used for determining the AHL based on water quality criteria. One of these equations is more adapted to direct discharge to a stream and requires the receiving stream background concentration and flow rate. The other equation (Equation 2) allows the calculation of the AHL based on an NPDES Permit limit. Though the City's current NPDES Permit does not have limits set for the POCs, Equation 2 was used to determine the water quality AHLs by substituting the groundwater quality reference levels on Table 2 for the NPDES Permit limits, as seen in Equation 2 below.

Equation 2: Water Quality-Based AHL Formula

$$AHL = \frac{(8.34)(C_{GWR})(Q_{WWTF})}{(1 - R_{WWTF})}$$

Where:

AHL = AHL based on groundwater quality reference levels
C_{GWR} = Groundwater quality reference levels
Q_{WWTF} = WWTF average flow rate, million gallons per day (MGD)
R_{WWTF} = WWTF removal efficiency from headworks to plant effluent, as decimal
8.34 = Conversion factor

Inhibition-based Allowable Headworks Loadings

Though the WWTF has not yet had any reported significant disruptions of biological processes (inhibition) due to pollutant levels in the wastewater, inhibition-based AHLs developed to help protect future pollutant loadings from negatively impacting treatment operations. Since the WWTF has not experienced past inhibition, there are no site-specific inhibition concentrations to use for AHL calculations. Due to this lack of site-specific inhibition concentrations, literature concentrations from Attachment G of the EPA Local Limits Development Guidance were used. Though the City's WWTF is a lagoon process, inhibition concentrations for an activated sludge process were used due to the lack of available lagoon inhibition concentrations and the

conservative nature of the activated sludge inhibition values. Equation 3 was used to calculate the AHL for treatment inhibition.

Equation 3: AHL for Treatment Inhibition

$$AHL = \frac{8.34(C_{INHIB})(Q_{WWTF})}{1 - R_{WWTF}}$$

Where:

AHL = Allowable headworks loading for activated sludge inhibition (pounds per day [lbs/day])
C_{INHIB} = Concentration of pollutant for inhibition (mg/L)
Q_{WWTF} = WWTF average flow rate (MGD)
R_{WWTF} = Removal efficiency of pollutant through primary treatment (as decimal)

Maximum Allowable Headworks Loading

The MAHL for any given POC is the lowest AHL from those calculated for that pollutant. MAHLs for the POCs were calculated for both Plants 1 and 2 by calculating AHLs for both plants. Table 3 shows the AHL from each criterion and the MAHL. This table also shows the current loading at the headworks divided by the MAHL. Inhibition AHLs were not calculated for selenium and silver because literature inhibition concentrations were not available for these POCs.

TABLE 3
MAXIMUM ALLOWABLE HEADWORKS LOADING DETERMINATION

Pollutant	Average Loading at Headworks (lbs/day)	Pass Through AHL (lbs/day)	Inhibition AHL (lbs/day)	MAHL (lbs/day)	Average Loading vs. MAHL (percent)
Plant 1					
Arsenic	0.018	0.610	0.988	0.610	3
Cadmium	0.001	0.501	18.01	0.501	0
Chromium	0.011	1.312	3.958	1.312	1
Copper	0.120	39.3	0.972	0.972	12
Cyanide	0.024	0.647	0.706	0.647	4
Lead	0.005	1.282	2.591	1.282	0
Mercury	0.000	0.086	1.850	0.086	0
Nickel	0.014	1.322	1.597	1.322	1
Selenium	0.006	0.037	NA	0.037	16
Silver	0.001	0.596	NA	0.596	0
Zinc	0.597	95.8	1.461	1.461	41
Plant 2					
Arsenic	0.010	0.243	0.406	0.243	4
Cadmium	0.000	0.230	12.1	0.230	0
Chromium	0.007	0.707	0.841	0.707	1

Pollutant	Average Loading at Headworks (lbs/day)	Pass Through AHL (lbs/day)	Inhibition AHL (lbs/day)	MAHL (lbs/day)	Average Loading vs. MAHL (percent)
Copper	0.069	20.7	0.530	0.530	13
Cyanide	0.014	0.547	0.484	0.484	3
Lead	0.003	0.185	1.635	0.185	2
Mercury	0.000	0.051	1.146	0.051	0
Nickel	0.008	0.655	1.118	0.655	1
Selenium	0.003	0.034	NA	0.034	10
Silver	0.000	0.633	NA	0.633	0
Zinc	0.345	26.1	0.814	0.814	42

Maximum Allowable Industrial Loading

Local limits are developed by multiplying MAHL times a safety factor then subtracting the uncontrolled loading (or residential and unregulated commercial loading) as well as any loading that the City would like to reserve for future industries that may move to the area (see Equation 4).

Equation 4: Maximum Allowable Industrial Loading Formula

$$MAIL = MAHL(1 - SF) - (L_{UNC} + HW + GA)$$

Where:

MAIL = Maximum allowable industrial loading (lbs/day)
MAHL = Maximum allowable headworks loading (lbs/day)
SF = Safety factor (decimal)
L_{UNC} = Loading from uncontrolled sources or background (lbs/day)
HW = Loading from hauled waste (lbs/day) (Assumed to be zero for Prineville)
GA = Growth allowance (lbs/day)

The result of this calculation is the total maximum industrial loading for all current industries in pounds per day. Table 4 shows these calculations for the POCs.

TABLE 4
MAXIMUM ALLOWABLE INDUSTRIAL LOADING CALCULATIONS

Pollutant	Uncontrolled Loading (lbs/day)	Future Growth Allocation (percent)	Safety Factor (percent)	Maximum Industrial Loading (lbs/day)
Plant 1				
Arsenic	0.072	30	10	0.293
Cadmium	0.001	30	10	0.300
Chromium	0.018	30	10	0.769
Copper	0.215	30	10	0.368
Cyanide	0.014	30	10	0.374

Pollutant	Uncontrolled Loading (lbs/day)	Future Growth Allocation (percent)	Safety Factor (percent)	Maximum Industrial Loading (lbs/day)
Lead	0.013	30	10	0.756
Mercury	0.000	30	10	0.051
Nickel	0.061	30	10	0.732
Selenium	0.006	30	10	0.017
Silver	0.002	30	10	0.356
Zinc	0.523	30	10	0.304
Plant 2				
Arsenic	0.042	30	10	0.104
Cadmium	0.000	30	10	0.138
Chromium	0.010	30	10	0.414
Copper	0.124	30	10	0.194
Cyanide	0.355	30	10	0.282
Lead	0.008	30	10	0.103
Mercury	0.000	30	10	0.031
Nickel	0.035	30	10	0.357
Selenium	0.003	30	10	0.017
Silver	0.001	30	10	0.378
Zinc	0.331	30	10	0.157

The future growth allocation is based on the anticipated growth projections for the City of Prineville as presented in the 2018 Wastewater Facilities Plan (WWFP). The WWFP took into account projected growth from 2017 to 2037, along with anticipated improvements and urban growth boundary connections during the same time period. In addition to the future growth allocation percentage, a 10 percent safety factor was used for all parameters based on the EPA's minimum recommendation. The minimum recommended safety factor was used due to the conservative approaches taken throughout the calculation process as previously mentioned in this document.

Local Limits Distribution

Typical methods for allocating local limits to the City's controlled dischargers are outlined in the EPA Local Limits Development Guidelines. In the City's situation, uniformly allocating all pollutants to each of the IUs is preferred due to the ease of administrating the local limits. In addition, the discharges from both SIUs is similar enough in composition that developing limits based on contributory flow would not be effective. Equation 5 shows the formula used to determine this distribution.

Equation 5: Uniform Concentration Limit

$$C_{Lim} = \frac{MAIL}{Q_{CONT} \times 8.34}$$

Where:

C_{Lim} = Concentration limit for a given industrial user (mg/L)
MAIL = Maximum allowable industrial loading (lbs/day)
Q_{CONT} = Total flow rate for all industrial users (MGD)

Table 5 contains a summary of the suggested local limits based on the calculations performed using Equation 5.

TABLE 5
SUGGESTED LOCAL LIMITS

Pollutant	Limit (mg/L)
Arsenic	0.54
Cadmium	0.72
Chromium	2.16
Copper	1.01
Cyanide	1.15
Lead	0.54
Mercury	0.16
Nickel	1.86
Selenium	0.05
Silver	1.09
Zinc	0.82

Based on the results from the City's sampling results, there do not appear to be any existing IUs that will have trouble meeting any of these calculated local limits as long as existing site pretreatment processes and BMPs continue to be properly maintained and operated. When comparing the suggested local limits to the monitoring results of the City's SIUs, most average SIU POC concentrations were less than 5 percent of the suggested local limits, with most maximum POC concentrations below 10 percent of the suggested local limits. Zinc was the only POC that consistently had higher SIU concentrations, with SIU averages of approximately 20 percent of the suggested local limit.

Additional Recommendations

Municipal Code Modifications

The City's municipal code will require modifications to incorporate the new numeric local limits. During the initial stages of the development of Prineville's IPP and Local Limits, Chapter 53 of the City's municipal code was written to establish legal authority for the IPP. Though Chapter 53 implements the City's IPP and Local Limits, the City's preexisting sewer code, Chapter 51, was never updated to reflect the addition of Chapter 53 nor the development of these Local Limits. The City is currently in the process of updating Chapter 51 of its municipal code to reflect the implementation of Chapter 53. In addition, Chapter 53 will be updated to include the City of

Prineville's Local Limits, and a chapter will be written to address the implementation of an extra strength charge for users who discharge wastewater with concentrations of BOD_5 or TSS that are higher than 400 mg/L.

Fats, Oils, and Grease

Historically, the City of Prineville has not had concerns with FOG in the collection system or at the WWTF. However, during the analysis of the industrial user survey results, it was unclear whether some restaurants had properly maintained grease traps and/or grease interceptors. It is recommended that the City follow up with these restaurants to ensure that properly maintained pretreatment devices (grease trap or grease interceptor as applicable) are implemented at these restaurants to help protect the collection system and WWTF from FOG.

Amalgam

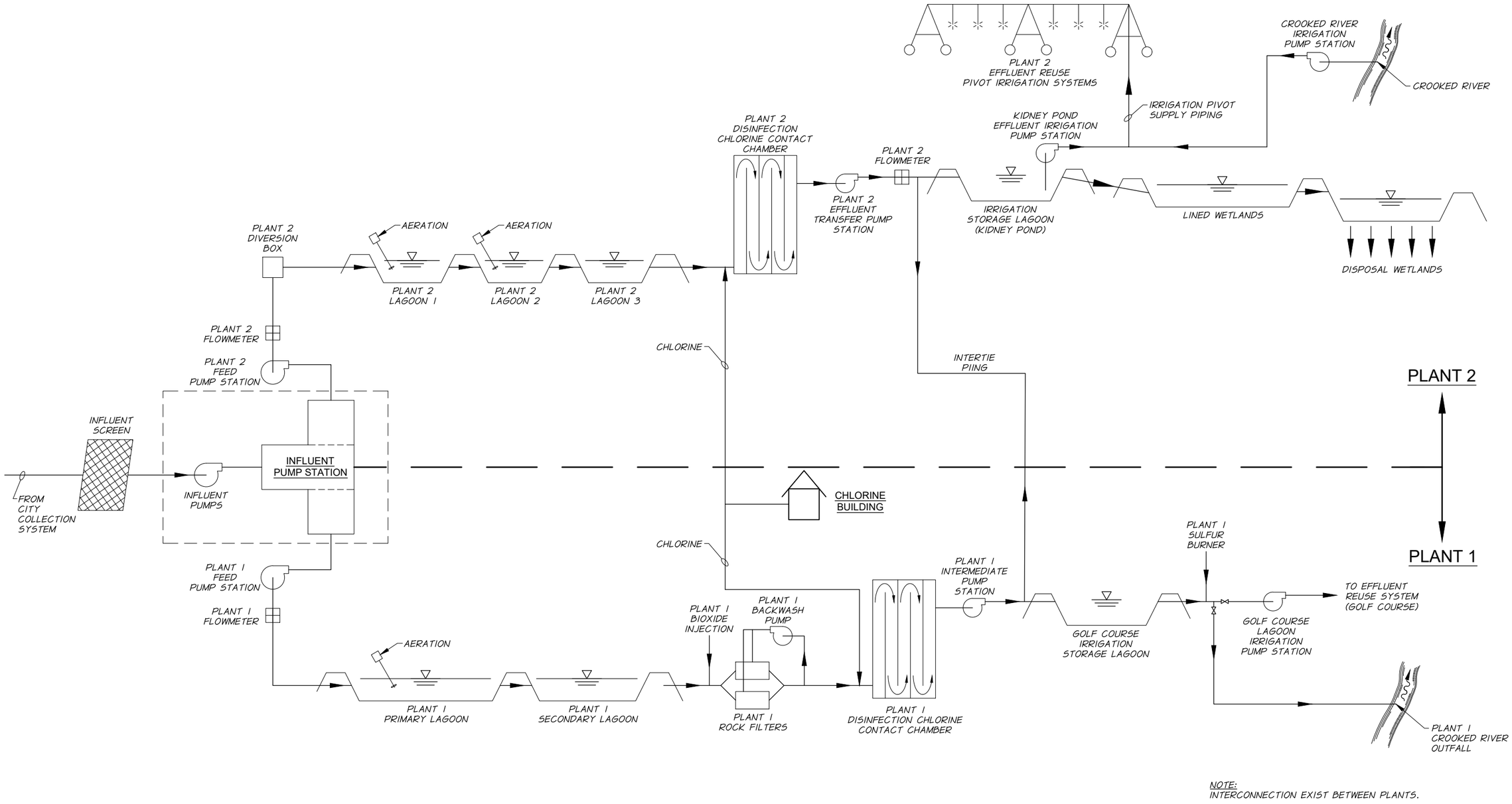
There are dentist offices in Prineville that produce wastewater containing amalgam. Amalgam is an alloy of mercury and silver that is used in the dental business. Based on the wastewater survey results, the dentist offices in Prineville have regularly maintained amalgam separators. It is recommended that the City require periodic documentation of the maintenance performed on the amalgam separators to help ensure the proper function of the separators.

Conclusion

With the development of local limits, the City can now update its municipal code and develop protocol for administering its pretreatment program. These limits will be used when issuing IU wastewater permits under the pretreatment program. These local limits will need to be reviewed and may be updated if the City's industrial growth exceeds that planned for during the development of these limits.

Appendices Table of Contents

APPENDIX A
Treatment Process Flow Schematic



NOTE:
INTERCONNECTION EXIST BETWEEN PLANTS.

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anderson perry & associates, inc.

CITY OF
PRINEVILLE, OREGON
LOCAL LIMITS REPORT

TREATMENT PROCESS FLOW SCHEMATIC

FIGURE
1

APPENDIX B
Oregon Administrative Rules
Water Quality Tables

OAR 340-041-8033
Table 30
Aquatic Life Water Quality Criteria for Toxic Pollutants

The concentration for each compound listed in Table 30 is a criterion established for waters of the state in order to protect aquatic life. The aquatic life criteria apply to waterbodies where the protection of fish and aquatic life is a designated use. All values are expressed as micrograms per liter (µg/L). Compounds are listed in alphabetical order with the corresponding information: the Chemical Abstract Service (CAS) number, whether there is a human health criterion for the pollutant (i.e. "y"= yes, "n" = no), and the associated aquatic life freshwater and saltwater acute and chronic criteria. *Italicized* pollutants are not identified as priority pollutants by EPA. Dashes in the table column indicate that there is no aquatic life criterion.

Unless otherwise noted in the table below, the acute criterion is the Criterion Maximum Concentration (CMC) applied as a one-hour average concentration, and the chronic criterion is the Criterion Continuous Concentration (CCC) applied as a 96-hour (4 days) average concentration. The CMC and CCC criteria may not be exceeded more than once every three years. Footnote A, associated with eleven pesticide pollutants in Table 30, describes the exception to the frequency and duration of the toxics criteria stated in this paragraph.

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Table 30
Aquatic Life Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Human Health Criterion	Freshwater (µg/L)		Saltwater (µg/L)	
				Acute Criterion (CMC)	Chronic Criterion (CCC)	Acute Criterion (CMC)	Chronic Criterion (CCC)
1	Aldrin	309002	y	3 [A]	--	1.3 [A]	--
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
2	*Alkalinity*		n	--	20,000 [B]	--	--
[B] *Criterion shown is the minimum (i.e. CCC in water may not be below this value in order to protect aquatic life).*							

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Table 30
Aquatic Life Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Human Health Criterion	Freshwater (µg/L)		Saltwater (µg/L)	
				Acute Criterion (CMC)	Chronic Criterion (CCC)	Acute Criterion (CMC)	Chronic Criterion (CCC)
3	*Ammonia*	7664417	n	*The ammonia criteria are pH and temperature dependent — See ammonia criteria Tables 30(a)-(c) at end of Table 30.* [M]		*The ammonia criteria are pH, temperature and salinity dependent. Values for saltwater criteria (total ammonia) can be calculated from the tables specified in Ambient Water Quality Criteria for Ammonia (Saltwater)—1989 (EPA 440/5-88-004) See DEQ's calculator for calculating saltwater ammonia criteria at: http://www.deq.state.or.us/wq/standards/toxics.htm*	
[M] *The acute criteria in Table 30(a) apply in waterbodies where salmonids are a designated use in OAR 340-041-0101 through OAR 340-041-0340. The acute criteria in Table 30(b) apply in waterbodies where salmonids are not a designated use. The chronic criteria in Table 30(c) apply where fish and aquatic life is a designated use. It is not necessary to account for the presence or absence of salmonids or the presence of any early life stage of fish for the chronic criteria. Refer to DEQ's beneficial use website at: http://www.deq.state.or.us/wq/standards/uses.htm for additional information on salmonid beneficial use designations, including tables and maps.*							
4	Arsenic	7440382	y	340 [C, D]	150 [C, D]	69 [C, D]	36 [C, D]
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.* [D] *Criterion is applied as total inorganic arsenic (i.e. arsenic (III) + arsenic (V)).*							
5	BHC Gamma (Lindane)	58899	y	0.95	0.08 [A]	0.16 [A]	--
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
6	Cadmium	7440439	n	*See* **E**	*See* **C, F**	40 [C]	8.8 [C]
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.*							

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Table 30
Aquatic Life Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Human Health Criterion	Freshwater (µg/L)		Saltwater (µg/L)	
				Acute Criterion (CMC)	Chronic Criterion (CCC)	Acute Criterion (CMC)	Chronic Criterion (CCC)
[E] *The freshwater criterion for this metal is expressed as "total recoverable" and is a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endnote E at bottom of Table 30.*							
[F] *The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endnote F at bottom of Table 30.*							
7	Chlordane	57749	y	2.4 [A]	0.0043 [A]	0.09 [A]	0.004 [A]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
8	*Chloride*	16887006	n	860,000	230,000	--	--
9	*Chlorine*	7782505	n	19	11	13	7.5
10	*Chlorpyrifos*	2921882	n	0.083	0.041	0.011	0.0056
11	Chromium III	16065831	n	*See* **C, F**	*See* **C, F**	--	--
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.* [F] *The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endnote F at bottom of Table 30.*							
12	Chromium VI	18540299	n	16 [C]	11 [C]	1100[C]	50[C]
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.*							
13	Copper	7440508	y	*See* **C, N**	*See* **C, N**	4.8 [C]	3.1 [C]
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.* [N] *The freshwater criterion for copper is a function of the concentration of ions, alkalinity, organic carbon, pH and temperature in the water column. To calculate the criterion, use the Biotic Ligand Model referenced in endnote N at the bottom of Table 30. The acute copper criterion (CMC) is applied as a one-hour average concentration. The chronic criterion (CCC) is applied as a 96-hour (4 days) average concentration. See endnote N also for procedures and information.*							

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Table 30
Aquatic Life Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Human Health Criterion	Freshwater (µg/L)		Saltwater (µg/L)	
				Acute Criterion (CMC)	Chronic Criterion (CCC)	Acute Criterion (CMC)	Chronic Criterion (CCC)
*[**Note**: The Environmental Quality Commission adopted these revised copper criteria on 11/02/2016. However, the revised criteria become effective for federal Clean Water Act purposes upon approval by the U.S. Environmental Protection Agency.]*							
14	Cyanide	57125	y	22 [J]	5.2 [J]	1 [J]	1 [J]
[J] *This criterion is expressed as µg free cyanide (CN)/L.*							
15	DDT 4,4'	50293	y	1.1 [A, G]	0.001 [A, G]	0.13 [A, G]	0.001 [A, G]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.* [G] *This criterion applies to DDT and its metabolites (i.e. the total concentration of DDT and its metabolites should not exceed this value).*							
16	*Demeton*	8065483	n	--	0.1	--	0.1
17	Dieldrin	60571	y	0.24	0.056	0.71[A]	0.0019[A]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
18	Endosulfan	115297	n	0.22 [A, H]	0.056 [A, H]	0.034 [A, H]	0.0087 [A, H]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.* [H] *This value is based on the criterion published in Ambient Water Quality Criteria for Endosulfan (EPA 440/5-80-046) and should be applied as the sum of alpha- and beta-endosulfan.*							
19	Endosulfan Alpha	959988	y	0.22 [A]	0.056 [A]	0.034 [A]	0.0087 [A]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
20	Endosulfan Beta	33213659	y	0.22 [A]	0.056 [A]	0.034 [A]	0.0087 [A]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
21	Endrin	72208	y	0.086	0.036	0.037 [A]	0.0023 [A]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
22	*Guthion*	86500	n	--	0.01	--	0.01

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Table 30
Aquatic Life Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Human Health Criterion	Freshwater (µg/L)		Saltwater (µg/L)	
				Acute Criterion (CMC)	Chronic Criterion (CCC)	Acute Criterion (CMC)	Chronic Criterion (CCC)
23	Heptachlor	76448	y	0.52 [A]	0.0038 [A]	0.053 [A]	0.0036 [A]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
24	Heptachlor Epoxide	1024573	y	0.52 [A]	0.0038 [A]	0.053 [A]	0.0036 [A]
[A] *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.*							
25	*Iron (total)*	7439896	n	--	1000	--	--
26	Lead	7439921	n	*See* **C , F**	*See* **C , F**	210 [C]	8.1 [C]
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.* [F] *The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endnote F at bottom of Table 30.*							
27	*Malathion*	121755	n	--	0.1	--	0.1
28	Mercury (total)	7439976	n	2.4	0.012	2.1	0.025
29	*Methoxychlor*	72435	y	--	0.03	--	0.03
30	*Mirex*	2385855	n	--	0.001	--	0.001
31	Nickel	7440020	y	*See* **C , F**	*See* **C , F**	74 [C]	8.2 [C]
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.* [F] *The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endnote F at bottom of Table 30.*							
32	*Parathion*	56382	n	0.065	0.013	--	--
33	Pentachlorophenol	87865	y	*See* **I**	*See* **I**	13	7.9
[I] *Freshwater aquatic life values for pentachlorophenol are expressed as a function of pH, and are calculated as follows: CMC=(exp(1.005(pH)-4.869); CCC=exp(1.005(pH)-5.134).*							
34	*Phosphorus Elemental*	7723140	n	--	--	--	0.1

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Table 30
Aquatic Life Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Human Health Criterion	Freshwater (µg/L)		Saltwater (µg/L)	
				Acute Criterion (CMC)	Chronic Criterion (CCC)	Acute Criterion (CMC)	Chronic Criterion (CCC)
35	Polychlorinated Biphenyls (PCBs)	NA	y	2 [K]	0.014 [K]	10 [K]	0.03 [K]
[K] *This criterion applies to total PCBs (e.g.* determined as Aroclors or congeners)							
36	Selenium	7782492	y	*See* **C , L**	4.6 [C]	290 [C]	71 [C]
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.* [L] *The CMC=(1/[(f1/CMC1)+(f2/CMC2)]µg/L) * CF where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC1 and CMC2 are 185.9 µg/L and 12.82 µg/L, respectively. See expanded endnote F for the Conversion Factor (CF) for selenium.*							
37	Silver	7440224	n	*See* **C , F**	0.10 [C]	1.9 [C]	--
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.* [F] *The freshwater acute criterion for this metal is expressed as a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endnote F at bottom of Table 30.*							
38	*Sulfide Hydrogen Sulfide*	7783064	n	--	2	--	2
39	Toxaphene	8001352	y	0.73	0.0002	0.21	0.0002
40	*Tributyltin (TBT)*	688733	n	0.46	0.063	0.37	0.01
41	Zinc	7440666	y	*See* **C , F**	*See* **C , F**	90 [C]	81 [C]
[C] *Criterion is expressed in terms of "dissolved" concentrations in the water column.* [F] *The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endnote F at bottom of Table 30.*							

Expanded Endnotes A, E, F, N

Endnote A: Alternate Frequency and Duration for Certain Pesticides

This criterion is based on EPA recommendations issued in 1980 that were derived using guidelines that differed from EPA's 1985 Guidelines which update minimum data requirements and derivation procedures. The CMC may not be exceeded at any time and the CCC may not be exceeded based on a 24-hour average. The CMC may be applied using a one hour averaging period not to be exceeded more than once every three years, if the CMC values given in Table 30 are divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

Endnote E: Equation for Hardness-Dependent Freshwater Cadmium Acute Criteria

The freshwater criterion for this metal is expressed as total recoverable with two significant figures, and is a function of hardness (mg/L) in the water column. Criteria values based on hardness are calculated using the following formula (CMC refers to the acute criterion):

$$\mathbf{CMC} = (\exp(m_A*[\ln(\text{hardness})] + b_A))$$

Chemical	m_A	b_A	m_C	b_C
Cadmium	1.128	-3.828	N/A	N/A

Endnote F: Equations for Hardness-Dependent Freshwater Metals Criteria and Conversion Factor Table

The freshwater criterion for this metal is expressed as dissolved with two significant figures, and is a function of hardness (mg/L) in the water column. Criteria values based on hardness are calculated using the following formulas (CMC refers to the acute criterion; CCC refers to the chronic criterion):

$$\textbf{CMC} = (\exp(m_A*[\ln(\text{hardness})] + b_A))*CF$$

$$\textbf{CCC} = (\exp(m_C*[\ln(\text{hardness})] + b_C))*CF$$

"CF" is the conversion factor used for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column.

Values for Calculating Hardness-Dependent Metals Criteria				
Chemical	**m_A**	**b_A**	**m_C**	**b_C**
Cadmium	N/A	N/A	0.7409	-4.719
Chromium III	0.8190	3.7256	0.8190	0.6848
Lead	1.273	-1.460	1.273	-4.705
Nickel	0.8460	2.255	0.8460	0.0584
Silver	1.72	-6.59	--	--
Zinc	0.8473	0.884	0.8473	0.884

The conversion factors (CF) below must be used in the equations above for the hardness-dependent metals in order to convert total recoverable metals criteria to dissolved metals criteria. For metals that are not hardness-dependent (i.e. arsenic, chromium VI, selenium, and silver (chronic)), or are saltwater criteria, the criterion value associated with the metal in Table 30 already reflects a dissolved criterion based on its conversion factor below.

Conversion Factor (CF) Table for Dissolved Metals				
Chemical	Freshwater		Saltwater	
	Acute	Chronic	Acute	Chronic
Arsenic	1.000	1.000	1.000	1.000
Cadmium	N/A	1.101672-[(ln hardness)(0.041838)]	0.994	0.994
Chromium III	0.316	0.860	--	--
Chromium VI	0.982	0.962	0.993	0.993
Copper	N/A	N/A	0.83	0.83
Lead	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]	0.951	0.951
Nickel	0.998	0.997	0.990	0.990
Selenium	0.996	0.922	0.998	0.998
Silver	0.85	0.85	0.85	--
Zinc	0.978	0.986	0.946	0.946

Endnote N: Deriving freshwater copper criteria

The freshwater copper criteria at any time are the Biotic Ligand Model (BLM) derived Instantaneous Water Quality Criteria (IWQC) output based on a concurrently measured set of model input parameter values. The Biotic Ligand Model uses multiple ambient water quality parameters to derive 1-hour acute exposure (CMC) and 96-hour chronic exposure (CCC) water quality criteria (IWQC) for copper based on the site specific water chemistry that determines the toxicity of copper to aquatic life. If measured data for one or more of the model input parameters used to derive the acute and chronic IWQC is not available, the procedures in section (1) or (2) of this endnote will be used as specified to substitute an estimate or a default value for the missing input parameter. BLM results (IWQC) based on sufficient measured input parameter data are more accurate and supersede results based on estimates or default values. The acceptable BLM software to calculate the IWQC include version 2.2.3, referenced in "Aquatic Life Ambient Freshwater Quality Criteria – Copper": EPA-822-R-07-001, February 2007, and version 2.2.4. The criteria are expressed as dissolved copper in micrograms per liter (to the nearest one-tenth).

(1) Input Parameter Substitution and Estimation Procedures to Derive BLM Criteria (IWQC)

If the measured value for any input parameter needed to derive an IWQC using the BLM is not available, DEQ will substitute an estimated input parameter value according to the procedures described in this section [Endnote N (1)]. If the data required to determine the estimated parameter value is not available, DEQ will use default values derived according to the procedures in Endnote N (2).

(a) Total recoverable concentration measurements will be substituted for dissolved concentration measurements that are not available. For alkalinity, calcium, chloride, magnesium, potassium, sodium and sulfate, total recoverable concentration measurements will be used as a direct substitute for dissolved concentration measurements. Total organic carbon (TOC) measurements will be multiplied by 0.83 to convert the TOC value to an equivalent dissolved organic carbon (DOC) value; except where sufficient TOC and DOC data are available for a site, DEQ will calculate and apply a site-specific translator in place of 0.83 to convert TOC values to DOC for use in the BLM.

(b) Alkalinity, calcium, chloride, magnesium, potassium, sodium and sulfate:
If data for any of these BLM input parameters are missing from a particular dataset, DEQ will estimate its value based on the relationship of the ion or alkalinity to specific conductance measurements for that data set using the regression analysis equations in Table 1. Specific conductance measurements must be concurrent with the other BLM input parameters dataset.

Table N-1	
Parameter	**Regression Equation**
Alkalinity	$Alk. = \exp^{(0.88 \cdot [\ln(SpC)] - 0.41)}$
Calcium	$Ca = \exp^{(0.96 \cdot [\ln(SpC)] - 2.29)}$
Chloride	$Cl = \exp^{(1.15 \cdot [\ln(SpC)] - 3.82)}$
Magnesium	$Mg = \exp^{(0.91 \cdot [\ln(SpC)] - 3.09)}$
Potassium	$K = \exp^{(0.84 \cdot [\ln(SpC)] - 3.74)}$
Sodium	$Na = \exp^{(0.86 \cdot [\ln(SpC)] - 2.22)}$
Sulfate	$SO_4 = \exp^{(1.45 \cdot [\ln(SpC)] - 5.59}$

Where, "SpC" is a measurement of specific conductance in µmhos/cm, "ln" is the natural logarithm, and "exp" is a mathematical constant that is the base of the natural logarithm.

(c) pH
If concurrent pH data is missing from the sample dataset, DEQ will use a representative pH value determined by interpolating from data available for the site or proximate monitoring locations where conditions (such as type of water body, stream flow and geology) are similar to the site. DEQ will use the available data and methods to produce the best practicable estimate of pH for the site and time for which the IWQC is being derived.

(d) Temperature
If concurrent temperature data is missing from the sample dataset, DEQ will use a monthly mean temperature based on data available for the site or proximate monitoring locations where conditions (such as type of water body and stream flow) are similar to the site.

(e) Humic Acid
If sufficient high quality data on the percentage of humic acid as a proportion of DOC is available for a site, DEQ will use that value in the BLM in place of the default value of 10% used in the model.

(2) Default Action Values

If the measured value for DOC, alkalinity, calcium, chloride, magnesium, potassium, sodium or sulfate is not available to derive an IWQC using the BLM, and the parameter value cannot be estimated as specified in section (1) above, DEQ will use a conservative input value for the missing parameter as described in this section [Endnote N (2)] to derive a default action value using the Biotic Ligand Model. The default action value will be used for Clean Water Act purposes until measured or estimated input parameter data are available to derive accurate copper criteria (IWQC) based on site specific water chemistry.

(a) The default input parameter values for DOC, alkalinity calcium, chloride, magnesium, potassium, sodium and sulfate will be the percentile value from the distribution of the high quality data available for surface waters in the region as shown in Table N-2.

Table N-2 Percentile of data distribution to be used as default value by region		
Region	**DOC** percentile	**Alkalinity and Ions** percentile
Willamette	20th	20th
Coastal	20th	20th
Cascades	20th	20th
Eastern	15th	15th
Columbia River	20th	20th

(b) The regional default values for each parameter and region will be updated periodically as additional high quality data becomes available and is added to DEQ's database.
(c) The regional default values for each parameter are available on DEQ's website.
(d) The regions listed in Table N-2 are comprised of the following EPA Level III ecoregions or waterbody:

(i) Willamette: the Willamette Valley
(ii) Coastal: Coast Range and Klamath Mountains
(iii) Cascades: Cascades
(iv) Eastern: Eastern Cascades Slopes and Foothills, Columbia Plateau, Blue Mountains, Northern Basin and Range and Snake River Plain
(v) Columbia River: Columbia River mainstem in Oregon

(3) General Policies

(a) The copper BLM derives instantaneous criteria results (IWQC) that vary at a site over time reflecting the effect of local water chemistry on copper toxicity to aquatic organisms. DEQ will apply the BLM criteria for Clean Water Act purposes to protect the water body during the most bioavailable or toxic conditions.
(b) For assessing waters of the state, DEQ will use approaches that give preference to the use of BLM criteria derived with site-specific measured input parameter data.

Table 30(a): Ammonia Acute Criteria Values (One-hour Average)—Salmonid Species Present
Temperature and pH-Dependent and expressed as Total Ammonia Nitrogen (mg/L TAN)

Criteria cannot be exceeded more than once every three years

$$Acute\ Criterion = MIN\left(\left(\frac{0.275}{1+10^{7.204-pH}}+\frac{39.0}{1+10^{pH-7.204}}\right),\left(0.7249\times\left(\frac{0.0114}{1+10^{7.204-pH}}+\frac{1.6181}{1+10^{pH-7.204}}\right)\times\left(23.12\times 10^{0.036\times(20-T)}\right)\right)\right)$$

	Temperature (°C)																
pH	**0-14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
6.5	33	33	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	31	31	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	30	30	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0
6.8	28	28	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	26	26	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7.0	24	24	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	8.0	7.3
7.1	22	22	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	20	20	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6.0
7.3	18	18	17	16	14	13	12	11	10	9.5	8.7	8.0	7.4	6.8	6.3	5.8	5.3
7.4	15	15	15	14	13	12	11	9.8	9.0	8.3	7.7	7.0	6.5	6.0	5.5	5.1	4.7
7.5	13	13	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0
7.6	11	11	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	9.6	9.6	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	3.0
7.8	8.1	8.1	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.2	2.9	2.7	2.5
7.9	6.8	6.8	6.6	6.0	5.6	5.1	4.7	4.3	4.0	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8.0	5.6	5.6	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.9	1.7
8.1	4.6	4.6	4.5	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4
8.2	3.8	3.8	3.7	3.5	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
8.3	3.1	3.1	3.1	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.96
8.4	2.6	2.6	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79
8.5	2.1	2.1	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.90	0.83	0.77	0.71	0.65
8.6	1.8	1.8	1.7	1.6	1.5	1.3	1.2	1.1	1.0	0.96	0.88	0.81	0.75	0.69	0.63	0.59	0.54
8.7	1.5	1.5	1.4	1.3	1.2	1.1	1.0	0.94	0.87	0.80	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.2	1.2	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.0	1.0	1.0	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32
9.0	0.88	0.88	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

Table 30(b): Ammonia Acute Criteria Values (One-hour Average*)—Salmonid Species Absent
Temperature and pH-Dependent and expressed as Total Ammonia Nitrogen (mg/L TAN)

Criteria cannot be exceeded more than once every three years

$$Acute\ Criterion = 0.7249 \times \frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}} \times MIN\left(51.93, 23.12 \times 10^{0.036\times(20-T)}\right)$$

	Temperature (°C)																				
pH	**0-10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
6.5	51	48	44	41	37	34	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	49	46	42	39	36	33	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	46	44	40	37	34	31	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0
6.8	44	41	38	35	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	41	38	35	32	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7.0	38	35	33	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9	7.3
7.1	34	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	31	29	27	25	23	21	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6.0
7.3	27	26	24	22	20	18	17	16	14	13	12	11	10	9.5	8.7	8.0	7.4	6.8	6.3	5.8	5.3
7.4	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0	8.3	7.7	7.0	6.5	6.0	5.5	5.1	4.7
7.5	21	19	18	17	15	14	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0
7.6	18	17	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	2.9
7.8	13	12	11	10	9.3	8.5	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.2	2.9	2.7	2.5
7.9	11	9.9	9.1	8.4	7.7	7.1	6.6	3.0	5.6	5.1	4.7	4.3	4.0	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8.0	8.8	8.2	7.6	7.0	6.4	5.9	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.9	1.7
8.1	7.2	6.8	6.3	5.8	5.3	4.9	4.5	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4
8.2	6.0	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
8.3	4.9	4.6	4.3	3.9	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.96
8.4	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79
8.5	3.3	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.90	0.83	0.77	0.71	0.65
8.6	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.5	1.3	1.2	1.1	1.0	0.96	0.88	0.81	0.75	0.69	0.63	0.58	0.54
8.7	2.3	2.2	2.0	1.8	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.94	0.87	0.80	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32
9.0	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

Table 30(c): Ammonia Chronic Criteria Values (30-day Rolling Average*)

Temperature and pH-Dependent and expressed as Total Ammonia Nitrogen (mg/L TAN)

* The highest four-day average within the 30-day averaging period must not be more than 2.5 times the chronic value

Criteria cannot be exceeded more than once every three years

$$Chronic\ Criterion = 0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \times \left(2.126 \times 10^{0.028\times(20-MAX(T,7))}\right)$$

	Temperature (°C)																							
pH	**0-7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
6.5	4.9	4.6	4.3	4.1	3.8	3.6	3.3	3.1	2.9	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.6	1.5	1.5	1.4	1.3	1.2	1.1
6.6	4.8	4.5	4.3	4.0	3.8	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1
6.7	4.8	4.5	4.2	3.9	3.7	3.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1
6.8	4.6	4.4	4.1	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1
6.9	4.5	4.2	4.0	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0
7.0	4.4	4.1	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	0.99
7.1	4.2	3.9	3.7	3.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95
7.2	4.0	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.96	0.90
7.3	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.97	0.91	0.85
7.4	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.96	0.90	0.85	0.79
7.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.83	0.78	0.73
7.6	2.9	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.6	1.5	1.4	1.4	1.3	1.2	1.1	1.1	0.98	0.92	0.86	0.81	0.76	0.71	0.67
7.7	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60
7.8	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53
7.9	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47
8.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60	0.56	0.53	0.50	0.44	0.44	0.41
8.1	1.5	1.5	1.4	1.3	1.2	1.1	1.1	0.99	0.92	0.87	0.81	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38	0.35
8.2	1.3	1.2	1.2	1.1	1.0	0.96	0.90	0.84	0.79	0.74	0.70	0.65	0.61	0.57	0.54	0.50	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.30
8.3	1.1	1.1	0.99	0.93	0.87	0.82	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26
8.4	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47	0.44	0.41	0.39	0.36	0.34	0.32	0.30	0.28	0.26	0.25	0.23	0.22
8.5	0.80	0.75	0.71	0.67	0.62	0.58	0.55	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.24	0.22	0.21	0.20	0.18
8.6	0.68	0.64	0.60	0.56	0.53	0.49	0.46	0.43	0.41	0.38	0.36	0.33	0.31	0.29	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.16	0.15
8.7	0.57	0.54	0.51	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.30	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13
8.8	0.49	0.46	0.43	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26	0.24	0.23	0.21	0.20	0.19	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.11
8.9	0.42	0.39	0.37	0.34	0.32	0.30	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.12	0.11	0.10	0.09
9.0	0.36	0.34	0.32	0.30	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.09	0.09	0.08

OAR 340-041-8033
TABLE 31
Aquatic Life Water Quality Guidance Values for Toxic Pollutants

Effective April 18, 2014

Water Quality Guidance Values Summary [A]

The concentration for each compound listed in Table 31 is a guidance value that DEQ may use in application of Oregon's Toxic Substances Narrative (340-041-0033(2)) to waters of the state in order to protect aquatic life. All values are expressed as micrograms per liter (µg/L) except where noted. Compounds are listed in alphabetical order with the corresponding EPA number (from National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047), corresponding Chemical Abstract Service (CAS) number, aquatic life freshwater acute and chronic guidance values, and aquatic life saltwater acute and chronic guidance values.

OAR 340-041-8033
Table 31
Aquatic Life Water Quality Guidance Values for Toxic Pollutants

EPA No.	Pollutant	CAS Number	Freshwater		Saltwater	
			Acute	Chronic	Acute	Chronic
56	Acenaphthene	83329	1,700	520	970	710
17	Acrolein	107028	68	21	55	
18	Acrylonitrile	107131	7,550	2,600		
1	Antimony	7440360	9,000	1,600		
19	Benzene	71432	5,300		5,100	700
59	Benzidine	92875	2,500			
3	Beryllium	7440417	130	5.3		
19 B	BHC (Hexachlorocyclohexane-Technical)	319868	100		0.34	
21	Carbon Tetrachloride	56235	35,200		50,000	

OAR 340-041-8033
Table 31
Aquatic Life Water Quality Guidance Values for Toxic Pollutants

EPA No.	Pollutant	CAS Number	Freshwater		Saltwater	
			Acute	Chronic	Acute	Chronic
	Chlorinated Benzenes		250	50	160	129
	Chlorinated naphthalenes		1,600		7.5	
	Chloroalkyl Ethers		238,000			
26	Chloroform	67663	28,900	1,240		
45	Chlorophenol 2-	95578	4,380	2,000		
	Chlorophenol 4-	106489			29,700	
52	Methyl-4-chlorophenol 3-	59507	30			
5a	Chromium (III)	16065831			10,300	
109	DDE 4,4'-	72559	1,050		14	
110	DDD 4,4'-	72548	0.06		3.6	
	Diazinon	333415	0.08	0.05		
	Dichlorobenzenes		1,120	763	1,970	
29	Dichloroethane 1,2-	107062	118,000	20,000	113,000	
	Dichloroethylenes		11,600		224,000	
46	Dichlorophenol 2,4-	120832	2,020	365		
31	Dichloropropane 1,2-	78875	23,000	5,700	10,300	3,040
32	Dichloropropene 1,3-	542756	6,060	244	790	
47	Dimethylphenol 2,4-	105679	2,120			
	Dinitrotoluene		330	230	590	370
16	Dioxin (2,3,7,8-TCDD)	1746016	0.01	38 pg/L		
85	Diphenylhydrazine 1,2-	122667	270			

OAR 340-041-8033
Table 31
Aquatic Life Water Quality Guidance Values for Toxic Pollutants

EPA No.	Pollutant	CAS Number	Freshwater		Saltwater	
			Acute	Chronic	Acute	Chronic
33	Ethylbenzene	100414	32,000		430	
86	Fluoranthene	206440	3,980		40	16
	Haloethers		360	122		
	Halomethanes		11,000		12,000	6,400
89	Hexachlorobutadiene	87683	90	9.3	32	
90	Hexachlorocyclopentadiene	77474	7	5.2	7	
91	Hexachloroethane	67721	980	540	940	
93	Isophorone	78591	117,000		12,900	
94	Naphthalene	91203	2,300	620	2,350	
95	Nitrobenzene	98953	27,000		6,680	
	Nitrophenols		230	150	4,850	
26 B	Nitrosamines	35576911	5,850		3,300,000	
	Pentachlorinated ethanes		7,240	1,100	390	281
54	Phenol	108952	10,200	2,560	5,800	
	Phthalate esters		940	3	2,944	3.4
	Polynuclear Aromatic Hydrocarbons				300	
	Tetrachlorinated Ethanes		9,320			
37	Tetrachloroethane 1,1,2,2-	79345		2,400	9,020	
	Tetrachloroethanes		9,320			

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Table 31
Aquatic Life Water Quality Guidance Values for Toxic Pollutants

EPA No.	Pollutant	CAS Number	Freshwater		Saltwater	
			Acute	Chronic	Acute	Chronic
38	Tetrachloroethylene	127184	5,280	840	10,200	450
	Tetrachlorophenol 2,3,5,6					440
12	Thallium	7440280	1,400	40	2,130	
39	Toluene	108883	17,500		6,300	5,000
	Trichlorinated ethanes		18,000			
41	Trichloroethane 1,1,1-	71556			31,200	
42	Trichloroethane 1,1,2-	79005		9,400		
43	Trichloroethylene	79016	45,000	21,900	2,000	
55	Trichlorophenol 2,4,6-	88062		970		

The following chemicals/compounds/classes are of concern due to the potential for toxic effects to aquatic organisms; however, no guidance values are designated. If these compounds are identified in the waste stream, then a review of the scientific literature may be appropriate for deriving guidance values.

- Polybrominated diphenyl ethers (PBDE)
- Polybrominated biphenyls (PBB)
- Pharmaceuticals
- Personal care products
- Alkyl Phenols
- Other chemicals with Toxic effects

Footnotes:

A Values in Table 31 are applicable to all basins.

B This number was assigned to the list of non-priority pollutants in National Recommended Water Quality Criteria: 2002 (EPA-822-R-02-047).

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TABLE 40
Human Health Water Quality Criteria for Toxic Pollutants

Effective April 18, 2014

Human Health Criteria Summary

The concentration for each pollutant listed in Table 40 was derived to protect Oregonians from potential adverse health impacts associated with long-term exposure to toxic substances associated with consumption of fish, shellfish, and water. The "organism only" criteria are established to protect fish and shellfish consumption and apply to waters of the state designated for fishing. The "water + organism" criteria are established to protect the consumption of drinking water, fish, and shellfish, and apply where both fishing and domestic water supply (public and private) are designated uses. All criteria are expressed as micrograms per liter (µg/L), unless otherwise noted. Pollutants are listed in alphabetical order. Additional information includes the Chemical Abstract Service (CAS) number, whether the criterion is based on carcinogenic effects (can cause cancer in humans), and whether there is an aquatic life criterion for the pollutant (i.e. "y"= yes, "n" = no). All the human health criteria were calculated using a fish consumption rate of 175 grams per day unless otherwise noted. A fish consumption rate of 175 grams per day is approximately equal to 23 8-ounce fish meals per month. For pollutants categorized as carcinogens, values represent a cancer risk of one additional case of cancer in one million people (i.e. 10^{-6}), unless otherwise noted. All metals criteria are for total metal concentration, unless otherwise noted. Italicized pollutants represent non-priority pollutants. The human health criteria revisions established by OAR 340-041-0033 and shown in Table 40 do not become applicable for purposes of ORS chapter 468B or the federal Clean Water Act until approved by EPA pursuant to 40 CFR 131.21 (4/27/2000).

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Table 40
Human Health Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
1	Acenaphthene	83329	n	n	95	99
2	Acrolein	107028	n	n	0.88	0.93
3	Acrylonitrile	107131	y	n	0.018	0.025
4	Aldrin	309002	y	y	0.0000050	0.0000050
5	Anthracene	120127	n	n	2900	4000
6	Antimony	7440360	n	n	5.1	64
7	Arsenic (inorganic) [A]	7440382	y	y	2.1	2.1(freshwater) 1.0 (saltwater)
[A] *The arsenic criteria are expressed as total inorganic arsenic. The "organism only" freshwater criterion is based on a risk level of approximately 1 x 10^{-5}, and the "water + organism" criterion is based on a risk level of 1 x 10^{-4}.*						
8	Asbestos [B]	1332214	y	n	7,000,000 fibers/L	--
[B] *The human health risks from asbestos are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*						
9	*Barium* [C]	7440393	n	n	1000	--
[C] *The human health criterion for barium is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*						
10	Benzene	71432	y	n	0.44	1.4
11	Benzidine	92875	y	n	0.000018	0.000020
12	Benz(a)anthracene	56553	y	n	0.0013	0.0018
13	Benzo(a)pyrene	50328	y	n	0.0013	0.0018

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Table 40
Human Health Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
14	Benzo(b)fluoranthene 3,4	205992	y	n	0.0013	0.0018
15	Benzo(k)fluoranthene	207089	y	n	0.0013	0.0018
16	BHC Alpha	319846	y	n	0.00045	0.00049
17	BHC Beta	319857	y	n	0.0016	0.0017
18	BHC Gamma (Lindane)	58899	n	y	0.17	0.18
19	Bromoform	75252	y	n	3.3	14
20	Butylbenzyl Phthalate	85687	n	n	190	190
21	Carbon Tetrachloride	56235	y	n	0.10	0.16
22	Chlordane	57749	y	y	0.000081	0.000081
23	Chlorobenzene	108907	n	n	74	160
24	Chlorodibromomethane	124481	y	n	0.31	1.3
25	Chloroethyl Ether bis 2	111444	y	n	0.020	0.053
26	Chloroform	67663	n	n	260	1100
27	Chloroisopropyl Ether bis 2	108601	n	n	1200	6500
28	Chloromethyl ether, bis	542881	y	n	0.000024	0.000029
29	Chloronaphthalene 2	91587	n	n	150	160
30	Chlorophenol 2	95578	n	n	14	15
31	Chlorophenoxy Herbicide (2,4,5,-TP) [D]	93721	n	n	10	--

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Table 40
Human Health Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
[D] *The Chlorophenoxy Herbicide (2,4,5,-TP) criterion is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*						
32	Chlorophenoxy Herbicide (2,4-D) [E]	94757	n	n	100	--
[E] *The Chlorophenoxy Herbicide (2,4-D) criterion is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*						
33	Chrysene	218019	y	n	0.0013	0.0018
34	Copper [F]	7440508	n	y	1300	--
[F] *Human health risks from copper are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*						
35	Cyanide [G]	57125	n	y	130	130
	[G] *The cyanide criterion is expressed as total cyanide (CN)/L.*					
36	DDD 4,4'	72548	y	n	0.000031	0.000031
37	DDE 4,4'	72559	y	n	0.000022	0.000022
38	DDT 4,4'	50293	y	y	0.000022	0.000022
39	Dibenz(a,h)anthracene	53703	y	n	0.0013	0.0018
40	Dichlorobenzene(m) 1,3	541731	n	n	80	96
41	Dichlorobenzene(o) 1,2	95501	n	n	110	130

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Table 40
Human Health Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
42	Dichlorobenzene(p) 1,4	106467	n	n	16	19
43	Dichlorobenzidine 3,3'	91941	y	n	0.0027	0.0028
44	Dichlorobromomethane	75274	y	n	0.42	1.7
45	Dichloroethane 1,2	107062	y	n	0.35	3.7
46	Dichloroethylene 1,1	75354	n	n	230	710
47	Dichloroethylene trans 1,2	156605	n	n	120	1000
48	Dichlorophenol 2,4	120832	n	n	23	29
49	Dichloropropane 1,2	78875	y	n	0.38	1.5
50	Dichloropropene 1,3	542756	y	n	0.30	2.1
51	Dieldrin	60571	y	y	0.0000053	0.0000054
52	Diethyl Phthalate	84662	n	n	3800	4400
53	Dimethyl Phthalate	131113	n	n	84000	110000
54	Dimethylphenol 2,4	105679	n	n	76	85
55	Di-n-butyl Phthalate	84742	n	n	400	450
56	Dinitrophenol 2,4	51285	n	n	62	530
57	*Dinitrophenols*	25550587	n	n	62	530
58	Dinitrotoluene 2,4	121142	y	n	0.084	0.34
59	Dioxin (2,3,7,8-TCDD)	1746016	y	n	0.00000000051	0.00000000051

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Table 40
Human Health Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
60	Diphenylhydrazine 1,2	122667	y	n	0.014	0.020
61	Endosulfan Alpha	959988	n	y	8.5	8.9
62	Endosulfan Beta	33213659	n	y	8.5	8.9
63	Endosulfan Sulfate	1031078	n	n	8.5	8.9
64	Endrin	72208	n	y	0.024	0.024
65	Endrin Aldehyde	7421934	n	n	0.030	0.030
66	Ethylbenzene	100414	n	n	160	210
67	Ethylhexyl Phthalate bis 2	117817	y	n	0.20	0.22
68	Fluoranthene	206440	n	n	14	14
69	Fluorene	86737	n	n	390	530
70	Heptachlor	76448	y	y	0.0000079	0.0000079
71	Heptachlor Epoxide	1024573	y	y	0.0000039	0.0000039
72	Hexachlorobenzene	118741	y	n	0.000029	0.000029
73	Hexachlorobutadiene	87683	y	n	0.36	1.8
74	*Hexachlorocyclo-hexane-Technical*	608731	y	n	0.0014	0.0015
75	Hexachlorocyclopentadiene	77474	n	n	30	110
76	Hexachloroethane	67721	y	n	0.29	0.33
77	Indeno(1,2,3-cd)pyrene	193395	y	n	0.0013	0.0018

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Table 40
Human Health Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
78	Isophorone	78591	y	n	27	96
79	Manganese [H]	7439965	n	n	--	100
[H] *The "fish consumption only" criterion for manganese applies only to salt water and is for total manganese. This EPA recommended criterion predates the 1980 human health methodology and does not utilize the fish ingestion BCF calculation method or a fish consumption rate.*						
80	Methoxychlor [I]	72435	n	y	100	--
[I] *The human health criterion for methoxychlor is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*						
81	Methyl Bromide	74839	n	n	37	150
82	Methyl-4,6-dinitrophenol 2	534521	n	n	9.2	28
83	Methylene Chloride	75092	y	n	4.3	59
84	Methylmercury (mg/kg) [J]	22967926	n	n	--	0.040 mg/kg
[J] *This value is expressed as the fish tissue concentration of methylmercury. Contaminated fish and shellfish is the primary human route of exposure to methylmercury.*						
85	Nickel	7440020	n	y	140	170
86	Nitrates [K]	14797558	n	n	10000	--
[K] *The human health criterion for nitrates is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*						
87	Nitrobenzene	98953	n	n	14	69

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Table 40
Human Health Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
88	Nitrosamines	35576911	y	n	0.00079	0.046
89	Nitrosodibutylamine, N	924163	y	n	0.0050	0.022
90	Nitrosodiethylamine, N	55185	y	n	0.00079	0.046
91	Nitrosodimethylamine, N	62759	y	n	0.00068	0.30
92	Nitrosodi-n-propylamine, N	621647	y	n	0.0046	0.051
93	Nitrosodiphenylamine, N	86306	y	n	0.55	0.60
94	Nitrosopyrrolidine, N	930552	y	n	0.016	3.4
95	Pentachlorobenzene	608935	n	n	0.15	0.15
96	Pentachlorophenol	87865	y	y	0.15	0.30
97	Phenol	108952	n	n	9400	86000
98	Polychlorinated Biphenyls (PCBs) [L]	NA	y	y	0.0000064	0.0000064
[L] *This criterion applies to total PCBs (e.g. determined as Aroclors or congeners).*						
99	Pyrene	129000	n	n	290	400
100	Selenium	7782492	n	y	120	420
101	Tetrachlorobenzene, 1,2,4,5-	95943	n	n	0.11	0.11
102	Tetrachloroethane 1,1,2,2	79345	y	n	0.12	0.40
103	Tetrachloroethylene	127184	y	n	0.24	0.33
104	Thallium	7440280	n	n	0.043	0.047

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Table 40
Human Health Water Quality Criteria for Toxic Pollutants

No.	Pollutant	CAS Number	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
105	Toluene	108883	n	n	720	1500
106	Toxaphene	8001352	y	y	0.000028	0.000028
107	Trichlorobenzene 1,2,4	120821	n	n	6.4	7.0
108	Trichloroethane 1,1,2	79005	y	n	0.44	1.6
109	Trichloroethylene	79016	y	n	1.4	3.0
110	Trichlorophenol 2,4,6	88062	y	n	0.23	0.24
111	Trichlorophenol, 2, 4, 5-	95954	n	n	330	360
112	Vinyl Chloride	75014	y	n	0.023	0.24
113	Zinc	7440666	n	y	2100	2600

OAR 340-040-0030 - Tables

TABLE 1
(OAR 340-40-020)

Numerical Groundwater Quality Reference Levels:[1]

Inorganic Contaminants	Reference Level (mg/L)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Fluoride	4.0
Lead	0.05
Mercury	0.002
Nitrate-N	10.0
Selenium	0.01
Silver	0.05

[1]All reference levels are for total (unfiltered) concentrations unless otherwise specified by the Department.

TABLE 2
(OAR 340-40-020)

Numerical Groundwater Quality Reference Levels (Continued):[1]

Organic Contaminants	Reference Level (mg/L)
Benzene	0.005
Carbon Tetrachloride	0.005
p-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.200
Trichloroethylene	0.005
Total Trihalomethanes (the sum of concentrations bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform))	0.100
Vinyl Chloride	0.002
2,4-D	0.100
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.100
Toxaphene	0.005
2,4,5-TP Silvex	0.010

[1]All reference levels are for total (unfiltered) concentrations unless otherwise specified by the Department.

TABLE 3
(OAR 340-40-020)

Numerical Groundwater Quality Guidance Levels:[1]

Miscellaneous Contaminants	Guidance Level (mg/L)[2]
Chloride	250
Color	15 Color Units
Copper	1.0
Foaming agents	0.5
Iron	0.3
Manganese	0.05
Odor	3 Threshold odor number
pH	6.5-8.5
Sulfate	250
Total dissolved solids	500
Zinc	5.0

[1]All guidance levels except total dissolved solids and are for total (unfiltered) concentrations unless otherwise specified by the Department.

[2]Unless otherwise specified, except pH.

APPENDIX C
Wastewater Sampling Results

DEVELOPMENT OF LOCAL LIMITS
SAMPLING AND ANALYSIS PLAN

Influent

Lqioxhqw	BOD_5	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L
Minimum Detection Limit			0.00000825	0.00000168	0.0000289	0.0000251	0.00000508	0.00000349	0.0000161	0.0000466	0.00000247	0.000486	0.00228	
Minimum Recording Limit	4	7	0.0005	0.000100	0.000400	0.0005	0.00010	0.00050	0.0005	0.00050	0.000100	0.0050	0.00300	0.5
December 17, 2018	217	186	0.0032	0.000117	0.001860	0.0199	0.00075	0.02400	0.0023	0.00124	0.000106	0.0895	0.00410	ND
March 19, 2019	171	118	0.0024	0.000229	0.001160	-	0.00070	0.01070	0.0026	0.00111	0.000044	0.0637	ND	14.2
April 9, 2019	168	128	0.0032	0.000094	0.001730	-	0.00062	0.01040	0.0028	0.00123	0.000062	0.0659	ND	11.6
June 18, 2019	230	132	0.0049	0.000174	0.003000	0.0267	0.00117	0.01330	0.0037	0.00151	0.000203	0.2760	ND	14.5
June 27, 2019	104	112	0.0026	0.000107	0.002510	0.0251	0.00096	0.00598	0.0027	0.00103	0.000100	0.0967	ND	10.9
August 1, 2019	317	192	0.0034	0.000139	0.002180	0.0218	0.00133	0.00945	0.0018	0.00081	0.000084	0.1020	ND	17.0
August 11, 2019	100	118	0.0027	0.000092	0.001610	0.0188	0.00114	0.00454	0.0005	0.00059	0.000069	0.0708	ND	20.0
December 11, 2019	106	130	0.0024	0.000222	0.001460	0.0105	0.00076	0.00191	0.0024	0.00070	0.000041	0.0513	ND	11.0
Average	177	140	0.0031	0.000147	0.001939	0.0205	0.00093	0.01004	0.0023	0.00103	0.000089	0.1020	0.00410	14.2

BOD_5 = five-day biochemical oxygen demand
mg/L = milligrams per liter
ND = non-detect
ng/L = nanogram per liter
TSS = total suspended solids

DEVELOPMENT OF LOCAL LIMITS
SAMPLING AND ANALYSIS PLAN

Plant 1 - Primary Effluent

Lqioxhqw	BOD_5	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L
Minimum Detection Limit			0.00000825	0.00000168	0.0000289	0.0000251	0.00000508	0.00000349	0.0000161	0.0000466	0.00000247	0.000486	0.00228	
Minimum Recording Limit	4	7	0.0005	0.000100	0.000400	0.0005	0.00010	0.00050	0.0005	0.00050	0.000100	0.0050	0.00300	0.5
December 17, 2018	8	17	0.0026	0.000036	0.000911	0.0057	0.00048	0.00562	0.0024	0.00132	0.000090	0.0256	0.00330	5.3
March 19, 2019	8	44	0.0019	0.000052	0.000446	-	0.00024	0.00512	0.0023	0.00113	0.000026	0.0168	ND	4.6
April 9, 2019	15	23	0.0021	0.000064	0.000868	-	0.00023	0.00539	0.0025	0.00111	0.000042	0.0235	0.00350	2.8
June 27, 2019	164	56	0.0015	0.000017	0.001150	0.0033	0.00018	0.00289	0.0021	0.00110	0.000007	0.0188	ND	3.3
August 1, 2019	78	32	0.0015	0.000103	0.000556	0.0154	0.00555	0.00244	0.0021	0.00059	0.000163	0.1130	ND	7.5
August 11, 2019	103	18	0.0016	0.000025	0.000517	0.0027	0.00034	0.00265	ND	0.00054	0.000091	0.0132	ND	4.9
December 11, 2019	105	62	0.0017	0.000037	0.000571	0.0038	0.00034	0.00319	0.0016	0.00069	0.000080	0.0179	ND	3.0
Average	69	36	0.0018	0.000048	0.000717	0.0062	0.00105	0.00390	0.0022	0.00093	0.000071	0.0327	0.00340	4.5

BOD_5 = five-day biochemical oxygen demand
mg/L = milligrams per liter
ND = non-detect
ng/L = nanogram per liter
TSS = total suspended solids

DEVELOPMENT OF LOCAL LIMITS
SAMPLING AND ANALYSIS PLAN

Plant 2 - Primary Effluent

Influent	BOD_5	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L
Minimum Detection Limit			0.00000825	0.00000168	0.0000289	0.0000251	0.00000508	0.00000349	0.0000161	0.0000466	0.00000247	0.000486	0.00228	
Minimum Recording Limit	4	7	0.0005	0.000100	0.000400	0.0005	0.00010	0.00050	0.0005	0.00050	0.000100	0.0050	0.00300	0.5
December 17, 2018	10	31	0.0031	0.000044	0.001260	0.0079	0.00049	0.00837	0.0024	0.00114	0.000042	0.0569	0.00340	5.1
March 19, 2019	12	68	0.0034	0.000068	0.008260	-	0.00476	0.00704	0.0041	0.00104	0.000052	0.0416	ND	7.9
April 9, 2019	28	68	0.0001	0.000005	ND	-	0.00001	0.00029	0.0001	ND	ND	0.0022	0.00240	4.5
June 27, 2019	112	60	0.0026	0.000027	0.000621	0.0052	0.00029	0.00635	0.0022	0.00092	0.000009	0.0350	ND	1.8
August 1, 2019	95	106	0.0031	0.000043	0.000423	0.0073	0.00051	0.00654	0.0018	0.00067	0.000044	0.0362	ND	3.1
August 11, 2019	101	98	0.0029	0.000037	0.000524	0.0052	0.00021	0.00587	0.0002	0.00074	0.000031	0.0215	ND	2.6
December 11, 2019	96	54	0.0030	0.000064	0.000617	0.0072	0.00045	0.00498	0.0018	0.00069	0.000057	0.0442	0.00280	4.3
Average	65	69	0.0026	0.000041	0.001951	0.0065	0.00096	0.00563	0.0018	0.00087	0.000039	0.0339	0.00287	4.2

BOD_5 = five-day biochemical oxygen demand
mg/L = milligrams per liter
ND = non-detect
ng/L = nanogram per liter
TSS = total suspended solids

DEVELOPMENT OF LOCAL LIMITS
SAMPLING AND ANALYSIS PLAN

Golf Course Pond - Plant 1 Final Effluent

Influent	BOD_5	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L
Minimum Detection Limit			0.00000825	0.00000168	0.0000289	0.0000251	0.00000508	0.00000349	0.0000161	0.0000466	0.00000247	0.000486	0.00228	
Minimum Recording Limit	4	7	0.0005	0.000100	0.000400	0.0005	0.00010	0.00050	0.0005	0.00050	0.000100	0.0050	0.00300	0.5
December 17, 2018	2	6	0.0024	0.000031	0.000783	0.0039	0.00046	0.00310	0.0024	0.00174	0.000102	0.0218	0.01180	5.7
March 19, 2019	2	40	0.0013	0.000013	0.000080	-	0.00018	0.00203	0.0016	0.00062	0.000018	0.0057	ND	1.0
April 9, 2019	40	60	0.0017	0.000012	0.000574	-	0.00010	0.00290	0.0020	0.00795	0.000042	0.0120	0.00270	ND
June 27, 2019	188	4	0.0009	0.000008	0.000455	0.0021	0.00014	0.00114	0.0009	0.00031	ND	0.0089	ND	1.0
August 1, 2019	18	18	0.0014	0.000010	0.000317	0.0031	0.00028	0.00141	0.0006	0.00016	0.000028	0.0203	ND	1.1
August 11, 2019	18	24	0.0013	0.000029	0.000404	0.0029	0.00017	0.00129	ND	0.00019	0.000048	0.0109	0.00250	1.6
December 11, 2019	4	11	0.0015	0.000017	0.000414	0.0032	0.00016	0.00182	0.0011	0.00029	0.000023	0.0120	0.00230	1.2
Average	39	23	0.0015	0.000017	0.000432	0.0030	0.00021	0.00196	0.0015	0.00161	0.000044	0.0131	0.00483	1.9

BOD_5 = five-day biochemical oxygen demand
mg/L = milligrams per liter
ND = non-detect
ng/L = nanogram per liter
TSS = total suspended solids

DEVELOPMENT OF LOCAL LIMITS
SAMPLING AND ANALYSIS PLAN

Horse Shoe / Kidney Pond - Plant 2 Final Effluent

Influent	BOD_5	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L
Minimum Detection Limit			0.00000825	0.00000168	0.0000289	0.0000251	0.00000508	0.00000349	0.0000161	0.0000466	0.00000247	0.000486	0.00228	
Minimum Recording Limit	4	7	0.0005	0.000100	0.000400	0.0005	0.00010	0.00050	0.0005	0.00050	0.000100	0.0050	0.00300	0.5
December 17, 2018	8	11	0.0026	0.000021	0.000746	0.0040	0.00426	0.00272	0.0023	0.00167	0.000044	0.0638	ND	ND
March 19, 2019	7	14	0.0018	0.000023	0.000180	-	0.00038	0.00392	0.0022	0.00140	0.000021	0.0170	ND	2.3
April 9, 2019	8	8	0.0025	0.000022	0.000600	-	0.00031	0.00504	0.0024	0.00136	0.000033	0.0273	0.00330	2.4
June 27, 2019	11	2	0.0018	0.000024	0.000521	0.0030	0.00024	0.00415	0.0016	0.00093	0.000017	0.0398	ND	1.7
August 1, 2019	18	11	0.0022	0.000021	0.000239	0.0041	0.00034	0.00443	0.0015	0.00058	0.000012	0.0112	ND	1.0
August 11, 2019	18	14	0.0021	0.000016	0.000480	0.0024	0.00027	0.00411	0.0000	0.00060	0.000010	0.0170	ND	1.7
December 11, 2019	6	5	0.0022	0.000024	0.000483	0.0034	0.00016	0.00440	0.0018	0.00064	0.000029	0.0187	ND	2.1
Average	11	9	0.0022	0.000022	0.000464	0.0034	0.00085	0.00411	0.0017	0.00103	0.000024	0.0278	0.00330	1.9

BOD_5 = five-day biochemical oxygen demand
mg/L = milligrams per liter
ND = non-detect
ng/L = nanogram per liter
TSS = total suspended solids

DEVELOPMENT OF LOCAL LIMITS
SAMPLING AND ANALYSIS PLAN

Apple

Influent	BOD_5	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L
Minimum Detection Limit			0.00000825	0.00000168	0.0000289	0.0000251	0.00000508	0.00000349	0.0000161	0.0000466	0.00000247	0.000486	0.00228	
Minimum Recording Limit	4	7	0.0005	0.000100	0.000400	0.0005	0.00010	0.00050	0.0005	0.00050	0.000100	0.0050	0.00300	0.5
March 26, 2019	917	1582	-	-	-	-	-	-	-	-	-	-	-	-
March 20, 2019	-	-	0.0034	0.000655	0.013200	-	0.00502	0.00696	0.0147	0.00264	0.000310	0.4920	ND	55.5
April 9, 2019	294	200	0.0027	0.000104	0.003650	-	0.00036	0.00443	0.0034	0.00173	0.000046	0.1180	0.01860	19.3
June 18, 2019	486	400	0.0034	0.000142	0.004350	0.0733	0.00058	0.00372	0.0057	0.00192	0.000340	0.1810	ND	18.6
June 27, 2019	528	142	0.0036	0.000224	0.003190	0.0531	0.00040	0.00688	0.0043	0.00206	0.000031	0.1640	ND	28.0
August 1, 2019	340	92	0.0030	0.000153	0.001770	0.0647	0.00706	0.00402	0.0030	0.00106	0.000028	0.1900	ND	7.4
August 11, 2019	450	60	0.0033	0.000032	0.001590	0.0242	0.00022	0.00361	0.0008	0.00103	0.000052	0.0337	ND	6.2
December 11, 2019	262	96	0.0015	0.000025	0.000826	0.0324	0.00016	0.00133	0.0055	0.00065	0.000011	0.0293	ND	5.7
Average	468	367	0.0030	0.000191	0.004082	0.0495	0.00197	0.00442	0.0053	0.00158	0.000117	0.1726	0.01860	20.1

BOD_5 = five-day biochemical oxygen demand
mg/L = milligrams per liter
ND = non-detect
ng/L = nanogram per liter
TSS = total suspended solids

DEVELOPMENT OF LOCAL LIMITS
SAMPLING AND ANALYSIS PLAN

Facebook

Lqioxhqw	BOD_5	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L
Minimum Detection Limit			0.00000825	0.00000168	0.0000289	0.0000251	0.00000508	0.00000349	0.0000161	0.0000466	0.00000247	0.000486	0.00228	
Minimum Recording Limit	4	7	0.0005	0.000100	0.000400	0.0005	0.00010	0.00050	0.0005	0.00050	0.000100	0.0050	0.00300	0.5
December 18, 2018	190	108	0.0049	0.000471	0.005120	0.0222	0.00056	-	0.0024	0.00453	0.000031	0.1040	ND	11.7
March 20, 2019	302	270	0.0025	0.000241	0.003690	-	0.00045	0.05620	0.0032	0.00350	0.000065	0.1890	ND	36.5
April 9, 2019	195	120	0.0046	0.001920	0.002540	-	0.00026	0.12700	0.0019	0.00279	0.000050	0.0631	ND	15.2
June 27, 2019	266	210	0.0030	0.000468	0.003400	0.0399	0.00062	0.24100	0.0041	0.00315	0.000039	0.1550	ND	38.9
August 1, 2019	370	180	0.0028	0.000255	0.002050	0.0311	0.00226	0.18300	0.0016	0.00122	0.000043	0.1340	ND	11.3
August 11, 2019	362	236	0.0025	0.000276	0.003110	0.0295	0.00057	0.11300	0.0013	0.00122	0.000073	0.1230	0.00260	16.9
December 11, 2019	167	128	0.0023	0.000054	0.001700	0.0223	0.00028	0.00354	0.0015	0.00119	0.000021	0.0673	ND	9.1
Average	265	179	0.0032	0.000526	0.003087	0.0290	0.00071	0.12062	0.0023	0.00251	0.000046	0.1193	0.00260	19.9

BOD_5 = five-day biochemical oxygen demand
mg/L = milligrams per liter
ND = non-detect
ng/L = nanogram per liter
TSS = total suspended solids

DEVELOPMENT OF LOCAL LIMITS
SAMPLING AND ANALYSIS PLAN

Manhole 857 - Domestic Wastewater

Influent	BOD_5	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L
Minimum Detection Limit			0.00000825	0.00000168	0.0000289	0.0000251	0.00000508	0.00000349	0.0000161	0.0000466	0.00000247	0.000486	0.00228	
Minimum Recording Limit	4	7	0.0005	0.000100	0.000400	0.0005	0.00010	0.00050	0.0005	0.00050	0.000100	0.0050	0.00300	0.5
December 18, 2018	303	242	0.0755	0.000250	0.011500	0.1100	0.00409	0.00585	0.0627	0.00121	0.000539	0.1580	ND	83.6
March 20, 2019	268	176	0.0025	0.000074	0.001870	-	0.00100	0.00175	0.0033	0.00111	0.000894	0.0648	ND	78.7
April 9, 2019	257	100	0.0028	0.000092	0.002010	-	0.00758	0.00232	0.0033	0.00114	0.000405	0.0776	0.00260	80.2
June 27, 2019	174	338	0.0033	0.000127	0.002420	0.0241	0.00106	0.00324	0.0032	0.00146	0.000232	0.1360	ND	25.0
August 1, 2019	332	156	0.0029	0.000091	0.002120	0.0225	0.00121	0.00261	0.0025	0.00071	0.000107	0.1100	ND	33.3
August 11, 2019	311	200	0.0024	0.000086	0.001720	0.0155	0.00079	0.00214	0.0007	0.00067	0.000208	0.0937	ND	35.7
December 11, 2019	260	142	0.0024	0.000091	0.001110	0.0218	0.00074	0.00174	0.0020	0.00078	0.000371	0.0850	0.00250	30.1
Average	272	193	0.0131	0.000116	0.003250	0.0388	0.00235	0.00281	0.0111	0.00101	0.000394	0.1036	0.00255	52.4

BOD_5 = five-day biochemical oxygen demand
mg/L = milligrams per liter
ND = non-detect
ng/L = nanogram per liter
TSS = total suspended solids

Chapter 51
SEWERS

Sections:

Cross-reference:

Reimbursement districts for public improvements, see Chapter 39.

GENERAL PROVISIONS

51.001 ADOPTION OF LAWS AND RULES.

The city adopts and incorporates herein by reference the following as they presently exist or may hereinafter be amended: O.R.S. 447.010 through 447.140, the State Plumbing Code and applicable administrative rules of the Director of Commerce.

(Ord. 981, passed 1-28-92)

51.002 DEFINITIONS.

For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

APPLICANT. The person(s) applying for a sewer connection permit. The applicant shall be the owner of the premises to be served by the sewer for which a permit is requested, or his/her designated agent authorized in writing to act on his/her behalf.

BOD (BIOCHEMICAL OXYGEN DEMAND). The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five days at 20ºC, expressed in milligrams per liter.

BUILDING. Any structure used for human habitation, employment, place of business, recreation, or any other purpose, containing sanitary facilities.

BUILDING DRAIN. That part of the lowest horizontal piping of a building drainage system which receives the discharge from soil, waste, and other drainage pipes within or adjoining the building or structure and conveys the discharge to the building sewer, beginning at a point five feet outside the established line of the building structure including any structural projection except eaves.

BUILDING SEWER. The extension from the building drain to the public sewer or other points of disposal.

CLEANOUT. A sealed aperture permitting access to the building sewer pipe for stoppage removal and other cleaning purposes.

COLLECTION SYSTEM. The system of public and private sewers which are operated by the city and are designed for the collection and conveyance of sanitary sewage.

DWELLING UNIT. A facility designed for permanent or semi-permanent occupancy which provides the occupants with minimum kitchen, sleeping and sanitary facilities.

FIXTURE UNIT. Fixture unit load values for drainage piping as specified in this chapter, or if not included herein, then as specified in the following or as it may hereinafter be amended. O.R.S. 447.010 through 447.140, the State Plumbing Code and Administrative Rules of the Director of Commerce adopted pursuant to O.R.S. 447.020.

GARBAGE. Solid wastes from the domestic and commercial preparation, cooking, and dispensing of food, and from the handling, storage, and sale of produce.

INDUSTRIAL WASTES. Any liquid, gaseous, radioactive or solid waste substance, or a combination thereof resulting from any process of industry, manufacturing, trade or business or from the development or recovery of any natural resources as distinct from sanitary sewage.

NATURAL OUTLET. Any outlet into a watercourse, pond, ditch, lake or other body of surface or ground water.

PERSON. Any individual, firm, company, association, society, corporation or group.

pH. The logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution.

PROPERLY SHREDDED GARBAGE. The wastes from the preparation, cooking and ~~the~~ dispensing of food, and the handling, storage and sale of produce, that have been shredded to a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (1.27 centimeters) in any dimension.

PUBLIC SEWER. A sewer in which all owners of abutting properties have equal rights~~, and~~ that is owned and controlled by the city. This includes the system from the point of connection of the building drain and/or building sewer to a septic tank effluent pumping (STEP) system to the collection system and the ultimate sewage treatment process.

PUBLIC WORKS DIRECTOR. The Public Works Director of the city, or his/her authorized deputy, agent, or representative.

SANITARY SEWER. A pipe or conduit intended to carry liquid and water-carried wastes, from residences, commercial buildings, industrial plants and institutions together with minor quantities of ground, storm and surface waters that are not intentionally admitted into the system.

SERVICE CONNECTION. That part of the public sewer which extends from a street sewer and receives flow from a building sewer or a building drain and which may or may not include a STEP system.

SEWAGE. A combination of water-carried wastes, from residences, commercial buildings, industrial establishments and institutions or other places, together with minor quantities of ground, storm and surface waters that are not intentionally admitted into the sewer system.

SEWAGE TREATMENT PLANT. Any arrangement of devices and structures used in the process of treating sewage.

SEWAGE WORKS. All facilities for collecting, pumping, treating and disposing of sewage.

SHALL is mandatory; ***MAY*** is permissive.

SLUG. Any discharge of water, sewage or industrial waste which in concentration of any given constituent or in quantity of flow exceeds for any period of duration longer than 15 minutes more than five times the average 24-hour sewage concentration or flows during normal operation.

STEP SYSTEM. A septic tank effluent pump system designed for a specific user application which is owned, operated and maintained by the applicant~~city~~. It is required as a condition for service to pretreat sewage and pressurize the resulting effluent for delivery to a street sewer in areas where the street sewer is a pressure sewer designed for septic tank effluent. The pressure pipeline located in public rights-~~-~~of-~~-~~way, may be owned and operated by the city, if so designated. If not designated, it is to be owned and operated by the applicant. ~~If the system is installed on private property, an easement to the city which allows access must be given by the property owner.~~

STORM SEWER or ***STORM DRAIN.*** A sewer designated to carry only storm waters, surface run-off, drainage and street wash waters, but excludes sewage and industrial wastes, other than unpolluted cooling water.

~~***SUPERINTENDENT.*** The Superintendent of Sewage Works of the city, or his/her authorized deputy, agent or representative.~~

SUSPENDED SOLIDS. Solids that either float on the surface of, or are in suspension in, water, sewage or other liquids, and which are removable by laboratory filtering.

WATERCOURSE. A channel in which a flow of water occurs, either continuously or intermittently.

(Ord. 981, passed 1-28-92)

PUBLIC SEWER USE REQUIRED

51.015 DEPOSIT OF OBJECTIONABLE WASTE.

It shall be unlawful for any person to place, deposit or permit to be deposited in any unsanitary manner on public or private property within the city, or in any area under the jurisdiction of the city, any human or animal excrement, sewage, garbage or other objectionable waste.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.016 DISCHARGE OF UNTREATED WASTE.

It shall be unlawful to discharge to any natural outlet within the city, or in any area under the jurisdiction of the city, any sewage or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this chapter.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.017 PRIVIES AND CESSPOOLS.

Except as hereinafter provided, it shall be unlawful to construct or maintain any privy vault, septic tank, cesspool or any other facilities intended or used for the disposal of sewage.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.018 CONNECTION TO PUBLIC SEWER REQUIRED.

(A) *Connection to Existing Public Sewer.* The owner of all buildings or dwelling units used for human occupancy, employment, recreation or any other purpose situated within the city and abutting on any street, alley or right-of-way in which there is now located a public sanitary sewer of the city is required at their expense, unless waived in writing by the city with the waiver period not exceeding five years, to connect to the public sewer in accordance with the provisions of this chapter within 90 days provided that the public sewer is within 100 feet of the property line.

(B) *Connection to Future Public Sewer.* At such time as the public sewer becomes available to any property served by a private sewage disposal system, as provided for in §§ 51.015 through 51.018 of this chapter, a direct connection shall, unless waived in writing by the city with such waiver period not exceeding five years, be made to the public sewer. Any connections made to the public sewer shall be made in compliance with this chapter, and any septic tank, cesspools, or other similar private sewage disposal facilities shall be abandoned by the property owner, in accordance with then-existing state law, and at no expense to the city.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

PRIVATE SEWAGE DISPOSAL

51.030 CONFLICTING PROVISIONS.

No statement contained in this subchapter shall be construed to interfere with any current or to-be-published requirements that may be imposed by the Oregon State Department of Environmental Quality.

(Ord. 981, passed 1-28-92)

51.031 PRIVATE DISPOSAL AUTHORIZED.

Where a public sanitary sewer is not available under the provisions of §§ 51.015 through 51.018, the building sewer shall be connected to a private sewage disposal system which is in compliance with the provisions of this subchapter.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.032 PERMITS AND WAIVERS.

Before construction is commenced relative to a private sewage disposal system, the property owner must obtain a written waiver from the city concerning the current availability of the city sewer system. Secondly, the property owner shall obtain a written permit from the Oregon State Department of Environmental Quality relating to the construction and use of a private sewage disposal system.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

~~51.033 CONNECTION TO PUBLIC SEWER REQUIRED.~~

~~At such time as the public sewer becomes available to any property served by a private sewage disposal system, as provided for in §§ 51.015 through 51.018 of this chapter, a direct connection shall, unless waived in writing by the city with such waiver period not exceeding five years, be made to the public sewer. Any connections made to the public sewer shall be made in compliance with this chapter, and any septic tank, cesspools or other similar private~~

~~sewage disposal facilities shall be abandoned by the property owner, in accordance with then-existing state law, and at no expense to the city.~~

~~(Ord. 981, passed 1-28-92) Penalty, see § 51.999~~

51.034 OPERATING PRIVATE SEWER SYSTEMS.

The property owner shall be required to operate and maintain the private sewage disposal system facilities in a sanitary manner at all times and at no expense to the city.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

BUILDING SEWERS AND CONNECTIONS

51.045 PERMITS.

(A) *Authority to open into, make connections or cover.* No unauthorized person shall uncover, make any connections with or opening into, use, alter or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the city. Applications for permits shall be made at the City Hall.

(B) *Before permit issuance.* Before the applicant can be issued a permit, the applicant must pay the connection fee and inspection fee for the installation of the public sewer system connection. Once issued, each permit shall be valid for 60 days from the date of issuance.

(C) *Classes of connection permits.* There shall be three classes of building service connection permits: for residential services, for commercial service, and for service to establishments producing industrial wastes. In any case, the applicant shall make application on a special form furnished by the city. The permit application shall be supplemented by a site plan or other information considered pertinent in the judgement of the ~~Superintendent~~Public Works Director. The specific permit and inspection fees for each class of building service connection permits, which are to be paid at the time the application is filed, are set out under a separate city ordinance.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.046 FEES, CHARGES AND RATES.

All permit fees, inspection fees, installation charges, connections fees and user rates for the city shall be set by separate Council resolution and resulting city ordinance.

(Ord. 981, passed 1-28-92)

51.047 COSTS AND EXPENSES.

All costs and expenses incident to the associated extension of the public sewer, and the ultimate installation and connection of the building sewer to the public sewer shall be borne by the property owner~~,~~ and shall be in accordance with city standards. The property owner shall indemnify the city from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer. If the city is requested to make the connection to the applicant's building drain or building sewer, the costs shall include engineering, construction management, excavation, installation, materials, backfill, street repair and related overheads. Before construction commences the applicant shall place on deposit with the city the necessary funds, or security acceptable to the city, as estimated by the city, for the completion of the extension of the public sewer, including the estimated cost of a STEP system when required. Within 30 days after completion of the project the property owner will pay or the city

will return to the property owner any difference in the actual cost of the project and the estimated cost for which the deposit was made.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.048 SEPARATE BUILDING SEWERS.

(A) A separate and independent building sewer shall be provided for every building; except in the following situations:~~.~~

(1) Where one building stands at the rear of another on an interior lot and no private or public sewer is available or can be constructed to the rear building through an adjoining alley, court, yard or driveway, the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer.

(2) Where required, two or more buildings on one tax lot under one ownership can share a single STEP system provided that such is approved in writing by the city and that the STEP system utilized is sized appropriately.

(B) In each of the exceptions mentioned in division (A), each separate and independent building shall pay the applicable connection and inspection fees and specified monthly user~~s~~ charges.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.049 USE OF OLD SEWERS.

Old sewers may be used in connection with new buildings only when they are found, with proper examination and testing by the city and/or its ~~Sewer Works Superintendent~~Public Works Director, to meet all requirements of this chapter.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.050 CONSTRUCTION STANDARDS.

(A) *Sewer construction standards.*

(1) The size, slope, alignment, and materials of construction of a building sewer and the methods to be used in excavating, placing of pipe, jointing, testing, backfilling the trench and the connection to the public sewer, including a STEP system where applicable, shall all conform to the requirements of any city building code, the State Plumbing Code and the Administrative Rules of the Director of Commerce, and other applicable rules, regulations and resolutions of the city, as they presently exist, or may hereinafter be amended or enacted.

(2) All ultimate connections to the public sewer, including a STEP system where applicable, shall be made gastight and watertight. Any deviations from the prescribed procedures and materials must be approved by the city's ~~Sewer Superintendent~~Public Works Director before installation.

(B) *Building drain connection elevation.* Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. In all buildings in which the building drain is too low to permit gravity flow to the public sewer, the sanitary sewage carried by the building drain shall be lifted by a means approved by the

~~Sewer Superintendent~~Public Works Director and discharged to the building sewer. This lift system shall be designed, constructed, maintained, owned, and operated by the building owner.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.051 SURFACE RUNOFF.

No person shall make connection of roof downspouts, exterior foundation drains, areaway drains or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.052 STEP SYSTEMS.

Specific STEP system installation requirements~~,~~ are as follows.

(A) *Permits.* Where a STEP system is required, an easement to construct, operate and maintain the system shall be given to the city prior to the city's issuance of the requested permit.

(B) *Notice of installation.* The applicant for the STEP system construction shall notify the ~~Sewer Superintendent~~Public Works Director at least two weeks prior to the need for the sewer application in order for the city to arrange for the installation.

(C) *Installation specifications.* The materials, excavation and installation of the STEP system shall be in accordance with the plans and specifications of the city. As such, individual electrical and pump needs will have to be determined for each individual service connection.

(D) *Operation and Maintenance~~Electrical power~~.* Electrical power for the STEP system shall be arranged and ~~be~~ provided by the applicant. Suitable electrical rough-in, consistent with applicable city and state electrical codes, for the structure(s) to be served is a condition for the connection of service to the sewer system. Rough-in, as well as other electrical costs, is the responsibility of the applicant. All installation, operation, and maintenance costs shall be paid for by the applicant.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.053 EXCAVATION REGULATIONS.

(A) *Restoration of public property.* All streets, sidewalks, parkways and any other public property disturbed in the course of the service connection installation shall be restored in a manner satisfactory to the city. All repairs or replacements shall be made at the expense of the property owner.

(B) *Safety measures.* All excavation for building sewer installation shall be adequately guarded with barricades and lights ~~so as~~in order to protect the public from hazard. The type of safety measures relied upon will be conducted in a manner satisfactory to the city. Construction safety shall be the ultimate responsibility of the installation contractor.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.054 INSPECTION AND CONNECTION.

The applicant for the building sewer permit shall notify the ~~Sewer System Works Superintendent~~Public Works Director when the building sewer installation is ready for inspection and connection to the public sewer. The connection shall be made under the supervision of the ~~Superintendent~~ Public Works Director or a designated representative. No cover shall be added until the proper level of inspection and connection related supervision has been conducted.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

PUBLIC SEWER USE REGULATIONS

~~51.070 STORM AND INDUSTRIAL COOLING WATER.~~

~~Storm water and all other unpolluted drainage shall be discharged to such sewers as are specifically designed as storm sewers, or to a natural outlet approved by the Superintendent. Industrial cooling waters or unpolluted process waters may also be discharged, on approval of the Superintendent and/or the Department of Environmental Quality, to a storm sewer or other natural outlets.~~

~~(Ord. 981, passed 1-28-92) Penalty, see § 51.999~~

51.071 ~~PROHIBITED DISCHARGES~~USE OF PUBLIC SEWERS.

(A) No person shall discharge or cause to be discharged into a sanitary sewer the following described substances, materials, waters or wastes if it appears likely, in the opinion of the Public Works Director and/or the Department of Environmental Quality, that the wastes can harm either the sewers, sewage treatment process, or equipment, have an adverse effect on the receiving stream or can otherwise endanger life, limb, public property, or constitute a nuisance. In forming his/her opinion as to the acceptability of these wastes, the Public Works Director will give consideration to such factors as the quantities of subject wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, capacity of the sewage treatment plant, degree of treatability of wastes in the sewage treatment plant, and other pertinent factors. Refer to Prineville Administrative Code §53.125 for additional guidance on prohibited discharges.

(B) Waste rejection, discharge control, or pretreatment.

(1) If any waters or wastes are discharged, or are proposed to be discharged to the public sewers, which contain the substances or possess the characteristics in division (A) of this section, and which in the judgement of the Public Works Director, may have a deleterious effect upon the sewage works, processes, equipment or irrigation lands and/or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the Public Works Director may do the following:

(a) Reject the wastes.

(b) Require pretreatment to an acceptable condition as a requirement for discharge to the public sewers.

(c) Require control over the quantities and rates of discharge.

(d) Require additional payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges under § 51.078.

(2) If the Public Works Director permits the pretreatment or equalization of waste flows, the design and installation of the facilities and equipment shall be subject to the review and approval of the Public Works Director, and subject to the requirements of all applicable codes, ordinances and laws.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

No person shall discharge or cause to be discharged any of the following described waters or wastes to any sanitary sewer.

(A) Any storm water, surface water, ground water, roof runoff, subsurface drainage, uncontaminated cooling water or unpolluted industrial process waters.

(B) Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas.

(C) Any waters or wastes containing toxic or poisonous solids, liquids or gases in sufficient quantity, either singularly or by interaction with other wastes, to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance or create any hazard in the receiving waters of the sewage treatment plant, including but not limited to cyanides in excess of two mg/L as CN in the wastes as discharged to the public sewer.

(D) Any water or wastes having a pH lower than 5.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment or personnel of the sewer works.

(E) Solid or viscous substances in qualities or of such other interference with the proper operation of the sewage works such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch, manure, hair and fleshings, entrails and paper dishes, cups, milk containers and the like, either whole or ground by garbage grinders.

(F) Any septic tank or cesspool sludge or wastes disposals, which are planned for direct disposal into the sewage treatment facilities.

(G) Any other substance prohibited by the Department of Environmental Quality of the State of Oregon.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.072 PROHIBITED POTENTIAL HARMFUL DISCHARGES.

(A) *Prohibited potential harmful discharges.* No person shall discharge or cause to be discharged into a sanitary sewer the following described substances, materials, waters or wastes if it appears likely, in the opinion of the Superintendent and/or the Department of Environmental Quality, that the wastes can harm either the sewers, sewage treatment process or equipment, have an adverse effect on the receiving stream or can otherwise endanger life, limb, public property or constitute a nuisance. In forming his/her opinion as to the acceptability of these wastes, the Superintendent will give consideration to such factors as the quantities of subject wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, capacity of the sewage treatment plant, degree of treatability of wastes in the sewage treatment plant and other pertinent factors. Substances prohibited are as follows.

(1) Any liquid or vapor having a temperature higher than 150ºF or 65ºC.

(2) Any waters or wastes containing fats, wax, grease or oils, whether emulsified or not, in excess of 100 mg/L or contain substances which may solidify or become viscous at temperatures between 32 and 150ºF or between 0 and 65ºC.

(3) Any garbage that has not been properly shredded. Also the installation and operation of any garbage grinder equipped with a motor of three-fourths horsepower (0.76 hp metric) or greater shall be subject to the review and approval of the Superintendent.

(4) Any waters or wastes containing strong acid iron pickling wastes, or concentrated plating solutions, whether neutralized or not.

(5) Any ground or unground fruit peelings and cores from commercial canneries and/or packing plants. This also includes cull fruits and vegetables and ordinary fruits and vegetables and related seeds.

(6) Any waters or wastes containing iron, chromium, copper, zinc and similar objectionable or toxic substances; or wastes exerting an excessive chlorine requirement, over five parts per million to a degree that any material received in the composite sewage at the sewage treatment works exceeds the limits established by the Superintendent for such materials.

(7) Any waters or wastes containing phenols or other taste or odor producing substances, in such concentrations exceeding limits which may be established by the Superintendent as necessary, after treatment of the composite sewage, to meet the requirements of the state, federal or other public agencies or jurisdiction for the discharge to irrigation lands and/or receiving waters.

(8) Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the Superintendent in compliance with applicable state or federal regulations.

(9) Any waters or wastes having a pH in excess of 9.0.

(10) Materials which exert or cause the following.

(a) Unusual concentrations of inert suspended solids (such as, but not limited to, Fullers earth, lime slurries and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).

(b) Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions).

(c) Unusual BOD, chemical oxygen demand or chlorine requirements in such quantities as to constitute a significant load on the sewage treatment works.

(d) Unusual volume of flow or concentration of wastes constituting slug as defined in § 51.002.

(11) Waters or wastes containing substances which are not amenable to treatment or deduction by the sewage treatment processes employed, or are amenable to treatment only to a degree that the sewage treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the irrigation lands and/or receiving waters.

(B) *Waste rejection, discharge control or pretreatment.*

(1) If any waters or wastes are discharged, or are proposed to be discharged to the public sewers, which contain the substances or possess the characteristics enumerated in division (A) of this section, and which in the judgement of the Superintendent, may have a deleterious effect upon the sewage works, processes, equipment or irrigation lands and/or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the Superintendent may do the following.

(a) Reject the wastes.

(b) Require pretreatment to an acceptable condition as a requirement for discharge to the public sewers.

(c) Require control over the quantities and rates of discharge.

(d) Require additional payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges under § 51.078.

(2) If the Superintendent permits the pretreatment or equalization of waste flows, the design and installation of the facilities and equipment shall be subject to the review and approval of the Superintendent, and subject to the requirements of all applicable codes, ordinances and laws.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.073 PRETREATMENT FACILITIES MAINTENANCE.

Where pretreatment or flow-equalizing facilities are required relative to water or waste to be discharged to the public sewer, they shall be maintained at a level of continuous and satisfactory and effective operation by the property owner at such owner's expense.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.074 INTERCEPTORS.

Grease, oil and sand interceptors shall be provided by the property owner when, in the opinion of the Superintendent, the devices are necessary for the proper handling of liquid wastes containing grease in excess amounts, any flammable wastes, sand or other harmful ingredients; with the exception that the interceptors shall not be required for private living quarters or dwelling units. The following shall apply to interceptor installations.

(A) All interceptors required to be installed shall be of a type, performance quality and capacity as approved by the Superintendent.

(B) The installed device shall be located in such a manner as to be readily and easily accessible for cleaning and inspection.

(C) Access for periodic cleaning and inspection of the installed interceptors will not be withheld by the property owner.

(D) All costs, including original installation, future replacement, inspection and cleaning, are the responsibility of the property owner.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.075 INDUSTRIAL WASTES.

The following shall apply to the control of industrial wastes to be or which are inadvertently being discharged into the public sewer from industries which exhibit excess strengths or characteristics of excess strengths.

(A) The controls for industrial waste admission apply if BOD in excess of or equal to 200 mg/L or suspended solids in excess of or equal to 150 mg/L is found to exist as a result of composite sample testing.

(B) The composite sample taken shall consist of no less than 12 individual samples taken at a minimum of 30-minute intervals over a period which is not less than six hours.

(C) Review and written acceptance by the city shall be obtained prior to the discharge into the public sewers of any waste having BOD in excess of or equal to 200 mg/L or a suspended solids content in excess of or equal to 150 mg/L.

(D) Pretreatment facilities shall be required if in the opinion of the Superintendent a need exists to modify or eliminate industrial wastes that are harmful to the structures, processes or operations of the sewage treatment works. In such cases, the property owner(s) shall provide at their own expense any pretreatment or processing facilities as may be determined necessary by the Superintendent to render the industrial waste acceptable for admission to the public sewers.

(E) Any industry planning to discharge wastes from a canning, freezing or food-packing operation shall not be allowed to discharge the industrial waste into the public sewer.

(F) The volume of flow used for computing industrial waste charges shall be metered water consumption of the industrial user or customer as shown in the records of meter readings maintained by the city. If the industrial user or customer discharging industrial wastes into the public sewers procures any part, or all, of its water supply from sources other than the City Water Department, all or a part of which is discharged into the public sewers, the additional water supply shall be metered. In such cases the industrial user or customer shall install and maintain at his/her expense water meters of a type approved by the Superintendent for the purposes of determining the volume of water obtained from these other sources.

(G) Where, in the judgement of the Superintendent, it is deemed necessary to protect the public sewer system, certain industrial plants may be required to have separate collection systems; one system to be installed for customary sanitary sewage which is connected directly to the public sewer system; a second system to be installed to collect processing wastes from shop sinks, floor drains, wash stations, plating or cleaning works and all other industrial waste sources. The waste from this system shall be discharged into an exterior concrete sump of sufficient capacity to hold at least two day's discharge from these sources and be connected to the city sewer system only by a valved overflow. The sump shall be readily accessible for inspection and analysis by the city, and only properly treated or neutralized wastes will be allowed to flow into the city's sewer system. The city reserves the right to require that city approval be secured for each incident of discharge into the city's sewer system.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.076 CONTROL MANHOLES; SAMPLING DEVICES.

(A) When required by the Superintendent, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable control manhole, together with the necessary meters and other appurtenances in the building sewer to facilitate observation, sampling and measurement of the wastes. The manhole, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the Superintendent. The manhole shall be installed by the owner at his/her expense, and shall be maintained by the owner so as to be safe and accessible at all times. The flow measurement device can be a Parshall flume, weir, venturi nozzle, magnetic flow meter or any other type of device providing accurate and continuous flow indications. Pump timers or other indirect measurement devices will not be acceptable. The flow meter shall be suitable for indicating and totalizing the flow in millions of gallons per day through the device, provided above, with an error not exceeding plus or minus 2%. The instrument shall be equipped with a set of electrical contacts arranged to momentarily close a circuit to energize a process timer and sampling device for every fixed quantity of flow. This quantity should be selected so as to insure a minimum of 12 samples per operating day. Other control variations will

~~be acceptable if it can be demonstrated to the Superintendent that the sampling procedure will result in a waste sample which is proportional to the waste flow.~~

~~(B) The length of operation of the sampling device shall be dependent on the type of sampling arrangement used, but in no case shall the daily collected sample be less than two quarts in volume.~~

~~The method of sampling used can be continuous pumping past a solenoid-operated valve, direct pumping into sample containers, continuous pumping past a sampler dipper calibrated to remove a constant sample, by a proportional dipper sampler operating directly in the waste flow or by any other approved means. All samples must be continuously refrigerated at a temperature of 39ºF, plus or minus five degrees. The flow measurement and sampling station shall be located and constructed in a manner acceptable to the city. Complete plans on all phases of the proposed installation, including all equipment proposed for use, shall be submitted to the city for approval prior to construction. The person discharging the waste shall keep flow records as required by the city and shall provide qualified personnel to properly maintain and operate the facilities.~~

~~(Ord. 981, passed 1-28-92) Penalty, see § 51.999~~

~~51.077 SAMPLING STANDARDS.~~

~~All measurements, tests and analysis of the characteristics of waters and wastes to which reference is made in this chapter shall be determined in accordance with the latest edition of *Standard Methods for the Examination of Water and Wastewater*, published by the American Public Health Association, and shall be determined at the control manhole provided, or upon suitable samples taken at the control manhole. In the event that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the building sewer is connected. Sampling shall be carried out by customarily accepted methods to reflect the effect of constituents upon the sewage works and to determine the existence of hazards to life, limb and property. (The particular analysis involved will determine whether a 24-hour composite of all outfalls of a premises is appropriate or whether a grab sample or samples should be taken. Normally, but not always, BOD and suspended solids analysis are obtained from 24-hour composites of all outfalls whereas pH's are determined from periodic grab samples.)~~

~~(Ord. 981, passed 1-28-92) Penalty, see § 51.999~~

~~51.078 SPECIAL AGREEMENTS.~~

~~No statement contained in this subchapter shall be construed to prevent any special agreements or arrangements between the city and any industrial concern whereby an industrial waste of unusual strength or character may be accepted by the city for treatment, subject to payment therefor, by the industrial concern. As such, any payments associated with the arrangements will be determined by special contract between the city and the specific industrial concern for which the special arrangements have been made.~~

~~(Ord. 981, passed 1-28-92)~~

INFILTRATION AND INFLOW

51.085 NOTICE TO CORRECT.

All property owners identified by the city as contributors to excessive or improper infiltration or inflow into the public sewer shall be advised in writing of their infiltration and inflow problems by the city.

(Ord. 981, passed 1-28-92)

51.086 TIME LIMIT FOR CORRECTIVE ACTION.

The owners of all properties who need to take corrective action shall be provided a 60-day grace period in which to correct the infiltration and inflow problems as identified by the city. The 60-day grace period shall commence on the date of notification.

(Ord. 981, passed 1-28-92)

51.087 NOTICE OF CORRECTIVE ACTION TAKEN.

By the end of the 60-day grace period, each property owner shall notify the city that corrective actions have been or are in progress of being taken.

Details with respect to corrective actions taken or expected to be taken and the anticipated completion date shall be specified in the notification to the city.

(Ord. 981, passed 1-28-92)

51.088 FAILURE TO CORRECT.

(A) *Failure to notify.* A property owner who fails to notify the city of corrective actions prior to the end of the 60-day grace period shall be subject to termination of service, without further notice. The termination of service shall include immediate discontinuance and shut off of the property owner's water service, if the service is provided by the city, until the violation shall have been corrected in accordance with federal, state and city regulations.

(B) *Continuation of excess infiltration or inflow.* In the instance that excessive or improper infiltration or inflow into the public sewer of the city shall continue beyond the 60-day grace period, it is hereby declared that the continuing infiltration or inflow is a public nuisance, that the city shall have the right to abate the public nuisance and to enter upon any private property within the city for such purpose and shall assess the cost of the abatement as a lien against the property upon which the continuing infiltration and inflow occurs and shall assess the cost of the abatement to the property upon or from which the infiltration and inflow occurs. The assessment shall be levied by the filing of a statement of the costs together with the description of the property or properties to be assessed, together with the names of the owner(s) thereof with the City Manager, whereupon the City Manager shall forthwith enter the assessment as a lien against the property. An administration fee of 15% of the cost shall also be charged and collected by the city in addition to all costs of abatement.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

SERVICE; CHARGES AND BILLING

51.100 DEFINITIONS.

For the purpose of this subchapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning. All definitions included in § 51.002 are incorporated herein by reference.

COMMERCIAL USER. Any premises used for commercial or business purposes which are not determined to be an industry as defined in this subchapter.

DOMESTIC WASTE. Any wastewater which would, under ordinary facts and circumstances, emanate from dwellings.

EQUIVALENT RESIDENTIAL UNIT (ERU). A volume of wastewater emanating from an average residential dwelling unit in the city's sewer treatment works service area which is assumed to incur the same costs for operation and maintenance as the average volume of domestic waste. When ERU's are relied upon in establishing user charges, the city shall utilize the metered water use records of the residential dwelling units in the treatment works service area for purposes of making this determination.

INDUSTRIAL USER. ~~Industrial user means a~~Any source of a direct or indirect discharge to the sewage system other than a domestic or commercial user. Additionally, two specific types of industrial users exist and are defined below.

(1) Categorical Industrial User. A user regulated by one of the EPA's categorical pretreatment standards as listed in 40 CFR Chapter 1, Subchapter N, Parts 405 through 471.

(2) Significant Industrial User. A user subject to the categorical pretreatment standards; or a user that:

(a) Discharges an average of 25,000 GPD or more of process wastewater to the city sewage system (excluding sanitary, noncontact cooling, and boiler blowdown wastewater); or

(b) Contributes to a process wastestream that makes up 5% or more of the average dry weather hydraulic or organic capacity of the treatment plant; or

(c) Is designated as such by the city on the basis that it has a reasonable potential for adversely affecting the treatment plant's operation or for violating any pretreatment standard or requirement.

(d) Upon finding that a user meeting the criteria in subsection (2)(a) of this definition has no reasonable potential for adversely affecting the POTW's operation or for violating any applicable pretreatment standard or requirement, the city may at any time, on its own initiative or in response to a petition received from a user and in accordance with procedures established pursuant to 40 CFR 403.8(f)(6), determine that such user should not be considered a significant industrial user.

~~(1) Any nongovernmental, nonresidential user of the public treatment works which is identified in the "Standard Industrial Classification Manual," 1972, Office of Management and Budget, as amended and supplemented, under the following divisions.~~

~~Division A - Agriculture, Forestry and Fishing~~

~~Division B - Mining~~

~~Division D - Manufacturing~~

~~Division E - Transportation, Communications, Electric, Gas and Sanitary Services~~

~~Division I - Services~~

~~(2) As a general rule, any public treatment works user which discharges more than the equivalent of 25,000 gallons per day (gpd) of sanitary wastes will be considered an industrial user unless an exclusion is requested by the user, and as such is granted by the city.~~

~~(3) Given the aforementioned, a user of the public treatment works system may be excluded from the industrial user category if it is determined by the city that the user will introduce primarily domestic waste and other waste from sanitary conveniences.~~

OPERATION AND MAINTENANCE. All activities required to ensure the continuous, dependable and economical functions of collection, treatment and discharge of the public treatment works sewage or user wastes. The activities and attendant costs would include, but not be limited to, the following: preventive and corrective maintenance; replacement of equipment; debt service costs; and, control of the unit processes and equipment that make up the collection, treatment and discharge of the public treatment works such as keeping financial and personal management records, laboratory control, process control, safety, emergency operation planning, employment of attorneys and consultants, and payment of court costs and fines.

PUBLIC TREATMENT WORKS. A collection, treatment and discharge sewerage system owned and operated by a public authority.

REPLACEMENT. Obtaining and installing any equipment, accessories or appurtenances that are deemed necessary by the city to maintain the capacity and performance for which the collection and treatment works were designed and constructed. This process shall continue during the designed for or useful life, whichever is longer, of the collection and treatment works facilities.

RESIDENTIAL USER. The user of a single-family dwelling or such other dwelling units included in multiple unit buildings designed for such purposes.

SERVICE AREA. All of the area served by the collection and treatment works system for which there is one uniform user charge system. The service area shall include the corporate limits of the city and any other contiguous and neighboring territory as the City Council shall, from time to time, deem it necessary to service.

TREATMENT WORKS. All facilities used in any manner for the purpose of collecting, pumping, treating and the ultimate disposal of sewage. "Treatment system" and "sewerage system" shall be equivalent terms for ***TREATMENT WORKS.***

USER. Every property owner and/or tenant of any property which is connected to, or required by city ordinance to be connected to, the treatment works system of the city.

USER CHARGE. The periodic or monthly charges levied on all users of the city's public treatment works.

(Ord. 980, passed 1-28-92)

51.101 SERVICE.

Application for city sewage treatment works services shall be made in the following manner.

(A) The application for city sewage treatment works services shall be considered to be the application for a permit to make a connection to the city's public sewer system. The application will state the purpose for which service is to be used, the address for mailing of the billings and other information as the city may reasonably require. In signing the application, the property owner agrees to abide by the rules and regulations of the city's public sewer system.

(B) Deposits and establishment of credit shall be performed at the time the application for service by the city's public sewer system is made. The credit of the applicant shall be established if the following requirements are met: the applicant makes a cash deposit with the city to secure the payment of two months user charges for services, but not less than $20; or, should the applicant have a history of delinquency of payment for services provided by the city, as determined by the city, the minimum deposit shall be $50. At the time the deposit is given to the city, the

applicant will be provided with a written receipt. The deposit is not to be considered as a payment on account. In the event that the service is discontinued, the deposit will be applied to the closing bill and any amount in excess of the closing bill will be refunded to the property owner. Also, following 12 consecutive nondelinquent payments for city public sewer system services, a property owner may request and receive a refund of the deposit.

(C) Users desiring to make a material change in the type and/or quantity of sewage to be discharged into the city's sewerage system shall give the city written notice of the change prior to the change and the original application for service shall be amended.

(Ord. 980, passed 1-28-92)

51.102 CHARGES.

(A) *Sewer user charges.* Sewer user charges shall be established on a monthly basis for the use of the city's sewage facilities. All user charges and service connection, disconnection and reconnection charges will result from a specific resolution of the City Council and the documentation of the charges for specific types of users are attached as exhibits to Ordinance 980, passed 1-28-92.

(B) *Applicability of user charges.* All user charges and other fees and charges provided for in § 51.101 shall apply to and be the responsibility of each user of the city's sewerage system.

(C) *Process of fixing responsibility.*

(1) The process of fixing responsibility for user charges shall be applied such that the property owner of record shall be responsible for the payment of all charges or surcharges for the city's provision of sewer services. The property owner, if the owner desires, will be notified of any delinquency in user charge or other associated billings rendered by the city.

(2) User~~s~~ charges shall be levied on all users of the city's public treatment works. The charges shall cover the costs of operation and maintenance, replacement and other administrative costs of the treatment works. The user charge system relied upon by the city shall distribute these costs in proportion to user responsibility for the wastewater loading of the treatment works.

(D) *Assignment of user charges.* Assignment of user charges to a specific user of the city's treatment works shall be the responsibility of the city. If at any point it is determined by the city that a user's assigned user charge has been incorrectly assigned, the city shall reassign a more appropriate user charge and notify the user of the reassignment.

(E) *Records.* Records which justify the basis used to assign wastewater contributions which formed the foundation for existing user charges shall be kept on file with the City Manager and shall be available for public inspection.

(F) *Beginning of sewer user charges.* The beginning of sewer user charges for all occupied property shall be the day following when the sewer service became available or the day that the connection is made to the public treatment works, whichever occurs first. The sewer user charges for all unoccupied property shall commence on the day after the property is ready for occupancy or on the first day of occupancy, whichever occurs first. All unoccupied property which is ready for occupancy at the time the sewer service becomes available shall be treated as occupied property.

(G) *Credit for vacancy.* Once the sewer user charge has been commenced, a user shall not be allowed a credit for vacancy unless the user can demonstrate that water service to the property from any and all sources has been discontinued. When a demonstration of the conditions can be made, the user's charge shall be appropriately pro-rated based on the days of usage divided by 30 days, which in no case shall exceed the total amount of the monthly user charge. Payment will be made by the city to the property owner for the calculated amount less any

then-outstanding user account balances owed to the city. The regular user charge shall be reinstated as soon as water service, from any source, has been reconnected to the user's property.

(H) *Review and revision of sewer user charges.* Review and revision of sewer user charges established in this section shall, as a minimum, be reviewed annually and if necessary be revised periodically to reflect the recovery of actual costs of operation, maintenance and replacement of the treatment works.

Adjustments may also be made between specified types of applicable user charges to maintain the equitability of the user charges with respect to cost causation criteria. Cost causation charges will be determined on the basis of the proportional distribution of the costs of sewer service in proportion to each user group's contribution to the total wastewater loading of the treatment works.

(I) *User notification of the need for revised user charges.* User notification of the need for revised user charges will be made, in conjunction with a regular bill or through other standard means of public announcement, at least one month prior to the effective date of the revised user charges.

(J) *Waiver of notification requirements.* Waiver of notification requirements will be allowed in case of emergency. In such instances, an emergency will be declared to exist when it is necessary for the health and safety of the people of the city for additional funds to be collected for the proper operation and maintenance of the public treatment works. In such cases an emergency may be declared to exist by the City Council and upon approval by the City Mayor, the revised user charges shall be placed into effect immediately. When such an emergency is declared, the user notification requirements relative to a change in user charges shall be waived.

(K) *Cost of service notification.* Cost of service notification shall be conducted by the city, with notification being made to each user no less frequently than on an annual basis. As such, each user shall be notified, in conjunction with a regular bill, of that portion of the user charges which are attributable to the operation, maintenance and replacement of the wastewater collection, treatment and disposal system.

(L) *Responsibility for payment of sewer user charges.* Responsibility for payment of sewer user charges shall be that of the person who owns the property. The responsibility for payment to the city does not pass to the tenant or other occupants, notwithstanding the fact that tenants or other occupants may be required by the property owner to pay the charges.

(M) *Appeals.* Appeals of the sewer user charges established by the city shall be made in writing to the City Manager within ten days of the billing of the sewer user charges. The City Manager shall respond in writing within ten days of receipt of any appeal. If the user wishes to appeal further, he/she shall request in writing that the City Manager place his/her specific appeal on the agenda of the next scheduled regular City Council session. The decision of the City Council at the session shall be final.

(Ord. 980, passed 1-28-92) Penalty, see § 51.999

51.103 BILLING, PAYMENT AND COLLECTION.

The billing process will be conducted in the following manner.

(A) The users of the public treatment works system shall be billed no more frequently than on a monthly basis for services provided by the city in accordance with the sewer user charge schedule as set forth in the exhibits attached to Ordinance 980, passed 1-28-92, incorporated herein by reference.

(B) The sewer user charges shall be due and payable to the city no later than 30 days after the date of billing. If not paid on or before 30 days after the billing date, the sewer user charges shall be deemed ~~to be~~ delinquent.

(C) Payments for combined water/sewer bills shall be credited to the oldest bill. The payment shall be applied first to amounts owing on the sewer account and then to amounts owing on the water account.

(D) The billings address for city sewer user charges shall be the address specified in the application for the permit to make the connection. This will continue until a different owner or user of the property, and a corresponding change in billing address, is reported in written form to the City's Department of Public Works.

(E) All collections of sewer user charges and other specified fees and charges shall be made by the City's Manager. Sewer user charges and other fees and charges shall be computed as provided in the sewer user charge and service charge exhibits attached to Ordinance 980, passed 1-28-92, and shall be payable as provided in this subchapter.

(Ord. 980, passed 1-28-92; Am. Ord. 1028, passed 11- -95)

51.104 DELINQUENT ACCOUNTS.

(A) Delinquent accounts shall be charged interest at a rate of 1% per month from the date of delinquency. In addition, a service charge shall be assessed at a rate of $5 per month from the date of delinquency in order to allow for the recovery of the city's administrative costs relative to the delinquent account. The service charge payment shall be added to the account balance and shall accrue interest in the same manner as all other delinquent charges beginning with the month following the month of delinquency.

(B) Disconnection/reconnection in the event of extended delinquencies shall be conducted in the following manner.

(1) After an account becomes delinquent, a turn-off notice will be sent to the billing address. The notice shall state a date not less than ten days from the date of the notice on which water service to the premises will be turned off if the delinquency amount is not paid in full prior thereto. On or after the turn-off date, if the delinquent amount has not been paid in full, the Superintendent may disconnect the service of the water system to the premises. Water services will be withheld until all delinquent amounts owing for sewer services supplied to the premises have been paid in full, together with the reconnection fee for the water services. The amount of the reconnection fee for the water service is specified in the city's water system ordinances incorporated herein by reference.

(2) In some instances, in the event of failure to pay sewer charges after they have become delinquent, the city shall have the right to remove or close the sewer connection. The same delinquency and notification period as detailed in division (B)(1) of this section would also apply. In these cases, the city shall be allowed the right of entry upon the property owner's property for accomplishing such purposes.

The total expense of the discontinuance, removal or closing, as well as the expense of restoring service, shall be a debt due to the city and be represented by a lien upon the property. In such cases the amount owed the city, as represented by the lien on the property, may be recovered by civil action in the name of the city against the property owner, the person, or both. Also, the city may enforce the collection of the charges by any means that may be provided by the laws of the state or permitted by the charter and ordinances of the city. This would include certification to the Tax Assessor of Crook County for collection in the manner provided for under O.R.S. 454.225.

(C) Change in ownership or occupancy of premises for which the sewer user charge account is found to be delinquent shall not be cause for reducing or eliminating any of the aforementioned penalties.

(Ord. 980, passed 1-28-92; Am. Ord. 1103, passed 5-13-03; Am. Ord. 1103, passed 5-13-03)

51.105 SEWER FUND.

The City Manager is hereby directed to deposit in the City Sewer Fund all of the gross revenues received from charges, rates and penalties collected for the use of the sewerage system as herein provided. As such, the funds deposited in the City's Sewer Fund shall be used for the operation and maintenance and replacement of the public treatment works system; administration costs; expenses of collection of charges resulting from this subchapter; and, the payment of the principle and interest on any debts which are directly or indirectly related to the public treatment works system of the city.

(Ord. 980, passed 1-28-92)

PROHIBITIONS AND RESTRICTIONS

51.115 PROPERTY DAMAGE AND INTERFERENCE.

(A) *Tampering with the sewage works system is prohibited.* No unauthorized person shall maliciously, willfully or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the sewage works system. Any person violating this provision shall be prosecuted in accordance with the Oregon Criminal Code.

(B) *Liability for damages.* The property owner shall be liable for damage to a tank or pump or other equipment or property owned by the city which is caused by an act of the customer, his/her tenants, or agents. The city shall be reimbursed by the customer for the damages upon presentation of a bill.

(Ord. 981, passed 1-28-92)

51.116 DANGEROUS OR UNSAFE APPARATUS.

The city may refuse to furnish sewer service to a premises where an apparatus, appliance or other type of equipment using the sewer system is dangerous or unsafe or the devices are being used in violation of laws, ordinances or legal regulations. The city does not assume liability for inspecting apparatus on the customer's property. The city does reserve the right of inspection, however, if there is reason to believe that an unsafe or illegal apparatus is in use. The right to access for the inspections, when requested by the city, shall not be withheld by the property owner.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

ADMINISTRATION AND ENFORCEMENT

51.130 DISCONNECTION DUE TO NONCOMPLIANCE.

The city may discontinue water service to a customer for noncompliance with the terms of this chapter if the customer fails to comply with the terms within ten days after receiving written notice of the city's intention to discontinue service. Provided, however, if the noncompliance materially affects the health, safety or other conditions that warrant the action, the city may discontinue water service immediately and without notice.

(Ord. 981, passed 1-28-92)

51.131 INSPECTIONS; RIGHT OF ENTRY.

(A) *Entry on owner's property to be permitted.* The Superintendent and other duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all private and public properties for the purposes of, but not limited to, installations as required, connections, maintenance, inspection, observation, measurement, sampling and testing in accordance with the provisions of this chapter. The Superintendent or his/her

representatives shall have no authority to inquire into any processes including metallurgical, chemical, oil, refining, ceramic, paper or other industries beyond those which have a direct bearing on the kind and source of discharge to the sewers or waterways or facilities for waste treatment.

(B) *Conformance with safety rules.* While performing the necessary work on private properties referred to in division (A) of this section, the Superintendent or duly authorized employees of the city shall observe all safety rules applicable to the premises.

(C) *Easements allowing entry on property.* The Superintendent and other duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all private properties through which the city holds an easement for the purposes of, but not limited to, installations of facilities, connections, inspections, observation, measurement, sampling, repairs and maintenance of any portion of the sewage works lying within the easement.

(Ord. 981, passed 1-28-92)

51.998 VIOLATIONS.

(A) *Notice of violation.* Any person found to be violating any provision of this chapter, except §§ 51.115 and 51.116, shall be served with written notice stating the nature of the violation with notification that the violator is given ten days to satisfactorily correct the violation. The offender shall, within the ~~period of~~ time stated in the notice, permanently cease all violations. With respect to damages to the sewer system and associated cost and fines to the city resulting from the violation(s), the property owner shall be responsible for the costs and be billed accordingly.

(B) *Liability.* Any person violating any of the provisions of this chapter shall become liable to the city for any expense, including reasonable attorney fees, loss or damage occasioned the city by reason for the violation, and in action or suit in the name of the city may be instituted against the person for the recovery of the expense, loss or damage; and the same may be undertaken in addition to other penalties imposed under the provisions of the chapter.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

51.999 PENALTY.

Any person who shall continue any violation beyond the time limits provided for in § 51.998(A), shall be deemed guilty of a violation, and, upon conviction, shall be penalized as provided in § 10.99.

(Ord. 981, passed 1-28-92)

CHAPTER 53: WASTEWATER

Section

Pretreatment

Discharge Permits

Reporting Requirements

Sampling and Analytical Requirements

Compliance Monitoring

Enforcement

FEES

PRETREATMENT

53.105 PURPOSE AND POLICY.

(A) Chapter 53 regulates discharges into the city's sewage system to protect the functioning of the system, including the treatment plant, and to comply with applicable regulations. The objectives of ~~these~~ this chapter~~s~~ are:

(1) To prevent the introduction of pollutants into the system that will interfere with the operation of the treatment plant;

(2) To prevent the introduction of pollutants that cannot be adequately treated before discharge from the treatment plant or that are otherwise incompatible with the treatment plant;

(3) To ensure that the quality of the treatment plant sludge is maintained at a level that allows its use and disposal in compliance with applicable statutes and regulations;

(4) To protect city personnel who may be affected by wastewater and sludge in the course of their employment and to protect the general public; and

(5) To improve the opportunity to recycle and reclaim wastewater and biosolids from the treatment plant.

(B) This title shall apply to all who discharge into the city sewage system. This chapter authorizes the issuance of wastewater discharge permits; authorizes monitoring, compliance, and enforcement activities; establishes administrative review procedures; requires user reporting; and provides for the setting of fees to recover the city's costs.

(Ord. 1240 § 53.10.005, passed 6-12-18)

53.110 ADMINISTRATION.

Except as otherwise provided, the Public Works Director shall administer, implement and enforce this title. The Public Works Director may delegate authority and responsibilities granted by this title.

(Ord. 1240 § 53.10.010, passed 6-12-18)

53.115 DEFINITIONS.

The following definitions apply to Chapter 53:

ACT means the Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 USC 1251 et seq.

APPLICABLE PRETREATMENT STANDARDS means, for any specified pollutant, city prohibitive standards, city specific pretreatment standards (local limits), State of Oregon pretreatment standards, or EPA's categorical pretreatment standards (when effective), whichever standard is appropriate or most stringent.

AUTHORIZED REPRESENTATIVE OF THE USER means:

(1) By a responsible corporate officer, if the industrial user submitting the reports required by this chapter is a corporation for the purpose of this subsection, a responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any person who performs similar policy or decision-making functions for the corporation; or

(b) The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiate and direct other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; can ensure that the necessary systems are established or actions taken to gather complete and accurate information for control mechanism requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) If the user is a partnership or sole proprietorship: a general partner or proprietor, respectfully.

(3) If the user is a federal, state, or local government facility: a director or highest official appointed or designated to oversee the operation and performance of the activities of the government facility, or his/her designee.

(4) The individuals described in subsections (1) through (3) of this definition may designate another authorized representative if the authorization is in writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates or having overall responsibility for environmental matters for the company, and the written authorization is submitted to the city.

BEST MANAGEMENT PRACTICE(S) (BMPS) means a schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to comply with this chapter. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

BIOCHEMICAL OXYGEN DEMAND (BOD) means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedures for five days at 20 degrees Celsius, usually expressed as a concentration (milligrams per liter (mg/l)).

BIO-SOLIDS means solid or semisolid material obtained from treated wastewater, often used as fertilizer.

CATEGORICAL PRETREATMENT STANDARD or *CATEGORICAL STANDARD* means any regulation containing pollutant discharge limits promulgated by the U.S. EPA that apply to a specific category of users. The standards are listed in 40 CFR Chapter I, Subchapter N, Parts 405 through 471.

CATEGORICAL USER means a user regulated by one of EPA's categorical pretreatment standards.

CHEMICAL OXYGEN DEMAND means a test to measure the amount of oxygen consumed where the oxygen is derived from chemicals.

COMPOSITE SAMPLE means the sample resulting from the combination of individual wastewater samples taken at selected intervals based on an increment of either flow or time.

COOLING WATER/NONCONTACT COOLING WATER means water used for cooling which does not come into direct contact with any raw material, intermediate product, waste product, or finished product. Cooling water may be generated from any use, such as air conditioning, heat exchanges, cooling or refrigeration to which the only pollutant added is heat.

DEQ means the Oregon Department of Environmental Quality.

DISCHARGE, including *INDIRECT DISCHARGE,* means any liquid and water-carried industrial wastes and sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions, whether treated or untreated, that are discharged into the city sewage system and ultimately to the treatment plant.

DOMESTIC USER (RESIDENTIAL USER) means any person discharging wastewater into the city sewage system similar in volume and/or chemical make-up to the discharge of a residential dwelling unit. Discharges from a residential dwelling unit typically include up to 80 gallons per capita per day, 0.2 pounds of BOD per capita per day, and 0.17 pounds of TSS per capita per day.

EPA means the U.S. Environmental Protection Agency, including its authorized officials.

EXISTING SOURCE means a wastewater discharge source that was in operation or began construction before the EPA's publication of proposed categorical pretreatment standards applicable to the source if and when the standard is promulgated.

EXISTING USER means any noncategorical user that was discharging wastewater prior to the effective date of the city's pretreatment regulations.

GRAB SAMPLE means a sample taken from a wastestream on a one-time basis without regard to the flow in the wastestream and without consideration of time.

INTERFERENCE means:

(1) Inhibition or disruption of the city sewage system, including treatment processes or operations;

(2) Inhibition or disruption of sludge processes, use or disposal; or

(3) Causation of a violation of the city's WPCF permit or of the prevention of biosolids use or disposal in compliance with any of the following statutory/regulatory provisions or permits issued under those provisions (or more stringent state or local regulations): Section 405 of the Clean Water Act; the Solid Waste Disposal Act (SWDA), including Title II, commonly referred to as the Resource Conservation and Recovery Act (RCRA); any state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA; the Clean Air Act; the Toxic Substances Control Act; and the Marine Protection, Research, and Sanctuaries Act. Interference is normally caused by discharge.

MAXIMUM ALLOWABLE DISCHARGE LIMIT means the maximum concentration or mass loading of a pollutant allowed to be discharged at any time, determined from the analysis of any discrete or composited sample collected, independent of the industrial flow rate and the duration of the sampling event.

MEDICAL WASTES means isolation wastes, infectious agents, human blood and blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes, potentially contaminated laboratory wastes, and dialysis wastes.

NAICS CODES means North American Industry Classification System codes.

NEW SOURCE means:

(1) Any building, structure, facility, or installation from which there is (or may be) a discharge of pollutants, the construction of which commenced after the publication of proposed categorical pretreatment standards under Section 307(c) of the Act which will be applicable to such source if the standards are then promulgated; provided, that:

(a) The building, structure, facility, or installation is constructed at a site at which no other source is located; or

(b) The building, structure, facility or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or

(c) The production or wastewater generating processes of the building, structure, facility, or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source, should be considered.

(2) Construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility, or installation but otherwise alters, replaces, or adds to existing process or production equipment.

(3) Construction of a new source as defined under this subsection has commenced if the owner or operator has:

(a) Begun, or caused to begin, as part of a continuous on-site construction program:

1. Any placement, assembly, or installation of facilities, or equipment; or

2. Significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or

(b) Entered into a building contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial

loss, and contracts for feasibility, engineering, and design studies, do not constitute a contractual obligation under this subsection.

NEW USER means a user that is not regulated under federal categorical pretreatment standards but that applies to the city for a new building permit or occupies an existing building and plans to commence discharge of wastewater to the city's collection system after the effective date of the ordinance codified in this title. Any person that buys an existing facility that is discharging nondomestic wastewater will be considered an existing user if no significant changes are made in the manufacturing operation.

PASS THROUGH means a discharge that exits the treatment plant into waters of the United States in quantities or concentrations that, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of the city's WPCF permit. This includes an increase in the magnitude or duration of a violation.

PERMITTEE means a person or user issued a wastewater discharge permit by the city.

PERSON means any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity; or their legal representatives, agents, or assigns. This definition includes all federal, state, or local governmental entities.

pH means a measure of the acidity or alkalinity of a substance, expressed in standard units.

POLLUTANT means any dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, medical wastes, chemical wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt, agricultural and industrial wastes, and the characteristics of the wastewater (i.e., pH, temperature, TSS, turbidity, color, BOD, chemical oxygen demand ~~(~~[COD]~~)~~, toxicity, or odor).

PRETREATMENT means the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to (or in lieu of) introducing such pollutants into the city sewage system. This reduction or alteration can be obtained by physical, chemical, or biological processes; by process changes; or by other means (except by diluting the concentration of the pollutants unless allowed by an applicable pretreatment standard).

PRETREATMENT REQUIREMENT means any substantive or procedural requirement related to pretreatment imposed on a user, other than a pretreatment standard.

PRETREATMENT STANDARDS or *STANDARDS* means prohibited discharge standards, categorical pretreatment standards, and local limits established by the city.

PROHIBITED DISCHARGE STANDARDS or *PROHIBITED DISCHARGES* means absolute prohibitions against the discharge of certain substances imposed by this chapter.

PUBLICLY OWNED TREATMENT WORKS or *POTW* means a treatment works, as defined by section 212 of the Act (33 USC § 1292), which is owned by the city. This definition includes any devices or systems used in the collection, storage, treatment, recycling and reclamation of sewage or industrial wastes of a liquid nature and any conveyances, which convey wastewater to a treatment plant.

SEPTIC TANK WASTE means any sewage from holding tanks such as vessels, chemical toilets, campers, trailers, and septic tanks, trucked waste and waste tanks.

SEWAGE means human excrement and gray water (household showers, dishwashing operations, etc.).

SEWAGE SYSTEM means the entire system used by the city to collect, transport, treat, and discharge treated effluent, including all sewers and treatment plants.

SEWER means any pipe, conduit ditch, or other device used to collect and transport sewage from the generating source.

SIGNIFICANT INDUSTRIAL USER means:

(1) A user subject to the categorical pretreatment standards; or a user that:

(a) Discharges an average of 25,000 GPD or more of process wastewater to the city sewage system (excluding sanitary, noncontact cooling, and boiler blowdown wastewater); or

(b) Contributes to a process wastestream which makes up 5% or more of the average dry weather hydraulic or organic capacity of the treatment plant; or

(c) Is designated as such by the city on the basis that it has a reasonable potential for adversely affecting the treatment plant's operation or for violating any pretreatment standard or requirement.

(2) A significant industrial user is an industrial user subject to categorical pretreatment standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N.

(3) Upon a finding that a user meeting the criteria in subsection (1)(a) of this definition has no reasonable potential for adversely affecting the POTW's operation or for violating any applicable pretreatment standard or requirement, the city may at any time, on its own initiative or in response to a petition received from a user and in accordance with procedures established ~~pursaunt~~pursuant to 40 CFR 403.8(f)(6), determine that such user should not be considered a significant industrial user.

SLUDGE means semisolid material such as the type precipitated by sewage treatment.

SLUG CONTROL PLAN (40 CFR 403.8(B)(6)(iv)) means requirements to control slug discharges, which include development of a compliance schedule for installation of technology required to meet pretreatment standards and submission of all notices and reports.

SLUG LOAD means any discharge at a flow rate or concentration which could cause a violation of the discharge standards in this code or any discharge of a nonroutine, episodic nature, including, but not limited to, an accidental spill or a noncustomary batch discharge.

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE means a classification pursuant to the Standard Industrial Classification Manual issued by the United States Office of Management and Budget.

STORMWATER means any flow occurring during or following any form of natural precipitation, and resulting from such precipitation, including snowfall.

TOTAL SUSPENDED SOLIDS or *TSS* means the total suspended matter that floats on the surface of, or is suspended in, water, wastewater, or other liquid, and which is removable by laboratory filtering.

TREATMENT PLANT means a “treatment works,” as defined by the Act, that is owned by the city.

TREATMENT PLANT EFFLUENT means liquid discharge from the treatment plant.

USER or *INDUSTRIAL USER* means a source of a direct or indirect discharge to the sewage system other than a domestic user.

WASTEWATER means liquid and water-carried industrial wastes and sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions, whether treated or untreated, which are discharged to the sewage system and treated by the treatment plant.

WASTEWATER DISCHARGE PERMIT means an authorization or equivalent control mechanism issued by the city to users discharging wastewater to the sewage system. The permit or control mechanism may contain appropriate pretreatment standards and requirements.

WASTEWATER TREATMENT PLANT or *TREATMENT PLANT* means the facility that treats municipal sewage and industrial waste.

(Ord. 1240 § 53.10.015, passed 6-12-18)

53.120 ABBREVIATIONS.

The following lists the meanings of abbreviations used in Chapter 53:

BOD means biochemical oxygen demand.

CFR means Code of Federal Regulations.

COD means chemical oxygen demand.

DEQ means Department of Environmental Quality.

EPA means U.S. Environmental Protection Agency.

GPD means gallons per day.

l means liter.

LEL means lower explosive limit.

mg means milligrams.

mg/l means milligrams per liter.

NPDES means National Pollutant Discharge Elimination System.

O&M means operation and maintenance.

PCC means Prineville City Code.

POTW means publicly owned treatment works.

RCRA means Resource Conservation and Recovery Act.

SIC means standard industrial classifications.

Slug control plan means requirement to control slug discharges.

SWDA means Solid Waste Disposal Act (42 USC 6901 et seq.).

TSS means total suspended solids.

USC means United States Code.

WPCF means water pollution control facility.

(Ord. 1240 § 53.10.010, passed 6-12-18)

53.125 PROHIBITED DISCHARGES.

(A) *General prohibitions.* No user shall introduce or cause to be introduced into the sewage system any pollutant or wastewater that causes pass through or interference. These general prohibitions apply to all users whether or not they are subject to categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements.

(B) *Specific prohibitions.* No user shall introduce or cause to be introduced into the sewage system the following pollutants, substances, or wastewater:

(1) Pollutants that create a fire or explosive hazard, including, but not limited to, wastestreams with a closed-cup flash point of less than 140 degrees Fahrenheit (60 degrees Celsius) using the test methods specified in 40 CFR 261.21.

(2) Wastewater having a pH less than 6.0 or more than 10.0, or that otherwise will cause corrosive structural damage to the sewage system or equipment.

(3) Solid or viscous substances in amounts which will cause obstruction of the flow in or to the sewage system resulting in interference (but in no case solids greater than one-half inch or one and one-quarter centimeters in any dimension).

(4) Pollutants, including oxygen-demanding pollutants (BOD, COD, etc.), released in a discharge at a flow rate and/or pollutant concentration that, either singly or by interaction with other pollutants, will cause interference with the sewage system.

(5) Wastewater having a temperature which will inhibit biological activity in the treatment plant resulting in interference, but in no case wastewater which causes the temperature at the introduction into the treatment plant to exceed 77 degrees Fahrenheit (25 degrees Celsius) unless DEQ, upon the request of the city, approves alternate temperature limits not to exceed 104 degrees Fahrenheit (40 degrees Celsius).

(6) Petroleum oil, nonbiodegradable cutting oil, products of mineral oil origin, or synthetic oils in the amounts that will cause interference or pass through.

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the sewage system in a quantity that may cause acute worker health and safety problems.

(8) Trucked or hauled pollutants, except at discharge points designated by the city.

(9) Noxious or malodorous liquids, gases, solids, or other wastewater which, either singly or by interaction with other wastes, is sufficient to create a public nuisance or a hazard to life or health, or to prevent entry into the sewers for maintenance or repair.

(10) Wastewater that imparts color that cannot be removed by the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions that impart color to the treatment plant's effluent. Color (in combination with turbidity) shall not cause the treatment plant effluent to reduce the depth of the compensation point for photosynthetic activity by more than 10% from the seasonably established norm for aquatic life.

(11) Wastewater containing any radioactive wastes or isotopes.

(12) Stormwater, surface water, groundwater, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, deionized water, noncontact cooling water, and unpolluted wastewater, unless specifically authorized in writing by the city.

(13) Any sludges, screenings, or other residues from the pretreatment of industrial wastes or from industrial processes.

(14) Medical wastes, except as specifically authorized by the city.

(15) Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail a toxicity test.

(16) Detergents, surface-active agents, or other substances that may cause excessive foaming in the sewage system.

(17) Any liquids, solids, or gases which by reason of their nature or quantity are or may be sufficient, either alone or by interaction with other substances, to cause fire or explosion or be injurious in any other way to the sewage system or to the operation of the sewage system. At no time shall two successive readings of an explosion meter, at the point of discharge into the

system (or at any point in the system), be more than 5% nor any single reading over 10% of the lower explosive limit (LEL) of the meter.

(18) Grease, animal renderings or tissues, paunch manure, bones, hair, hides or fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dusts, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, gasoline, tar asphalt residues, petroleum products, residues from refining or processing of fuel or lubricating oil, mud, glass grinding or polishing wastes.

(19) Any substance which will cause the city to violate its WPCF and/or other disposal or discharge permits or system permits.

(20) Any wastewater, which in the opinion of the city can cause harm either to the sewers, sewage treatment process, or equipment; have an adverse effect on the groundwater or receiving waters; or can otherwise endanger life, limb, public property, or constitute a nuisance.

(21) The contents of any tank or other vessel owned or used in the business of collecting or pumping sewage, effluent, septic tank waste, or other wastewater unless the operator has obtained testing and approval by the city and paid all fees assessed for the privilege of the discharge.

(22) Any hazardous wastes as defined in state regulations or in 40 CFR Part 261.

(23) Persistent pesticides and/or pesticides regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

(24) Sewage sludge, except in accordance with the city's WPCF permit.

Pollutants, substances, or wastewater prohibited by this chapter shall not be processed or stored in such a manner that it could be discharged to the sewage system.

(C) Waste Rejection, Discharge Control, or Pretreatment

(1) If any waters or wastes are discharged, or are proposed to be discharged to the public sewers, which contain the substances or possess the characteristics enumerated in division (A) of this section, and which in the judgement of the Public Works Director, may have a deleterious effect upon the sewage works, processes, equipment or irrigation lands and/or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the Public Works Director may do the following:

(a) Reject the wastes.

(b) Require pretreatment to an acceptable condition as a requirement for discharge to the public sewers.

(c) Require control over the quantities and rates of discharge.

(d) Require additional payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges under § 51.078.

(2) If the Public Works Director permits the pretreatment or equalization of waste flows, the design and installation of the facilities and equipment shall be subject to the review and approval of the Public Works Director, and subject to the requirements of all applicable codes, ordinances and laws.

(Ord. 981, passed 1-28-92) Penalty, see § 51.999

(Ord. 1240 § 53.10.025, passed 6-12-18)

53.130 FEDERAL CATEGORICAL PRETREATMENT STANDARDS.

The national categorical pretreatment standards promulgated by EPA and found at 40 CFR Chapter I, Subchapter N, Parts 405 through 471 are incorporated into and are enforceable under this title. When a categorical pretreatment standard is expressed only in terms of pollutant concentrations, an industrial user may request that the city convert the limits to equivalent mass limits. The determination to convert concentration limits to mass limits is within the discretion of the city.

(A) The city may establish equivalent mass limits only if the industrial user meets all the following criteria:

(1) The industrial user employs or demonstrates that it will employ water conservation methods and technologies that substantially reduce water use during the term of its individual wastewater discharge permit.

(2) The industrial user uses control and treatment technologies adequate to achieve compliance with the applicable categorical pretreatment standard, without using dilution as a substitute for treatment.

(3) Sufficient information is provided to establish the facility's actual average daily flow rate for all wastestreams based on data from a continuous effluent flow monitoring device, as well as the facility's long-term average production rate. Both the actual average daily flow rate and the long-term average production rate must be representative of current operating conditions.

(4) Not have daily flow rates, production levels, or pollutant levels that vary so significantly that equivalent mass limits are not appropriate to control the discharge.

(5) Consistent compliance with all applicable categorical pretreatment standards during the period prior to the industrial user's request for equivalent mass limits.

(B) An industrial user subject to equivalent mass limits must:

(1) Maintain and effectively operate control and treatment technologies adequate to achieve compliance with the equivalent mass limits;

(2) Continue to record the facility's flow rates through the use of a continuous effluent flow monitoring device;

(3) Continue to record the facility's production rates and notify the city whenever production rates are expected to vary by more than 20% from its baseline production rates. Upon

notification of a revised production rate, the city will reassess the equivalent mass limit as necessary to reflect changed conditions at the facility; and

(4) Continue to employ the same or comparable water conservation methods and technologies as those implemented under this section so long as they discharge under an equivalent mass limit.

(C) Where the city chooses to establish equivalent mass limits, it will:

(1) Calculate the equivalent mass limit by multiplying the actual average daily flow rate of the regulated process(es) of the industrial user by the concentration-based daily maximum and monthly average standard for the applicable categorical pretreatment standard and the appropriate unit conversion factor;

(2) When notified of a revised production rate, reassess the equivalent mass limit and recalculate the limit as necessary to reflect changed conditions at the facility; and

(3) Retain the same equivalent mass limit in subsequent control mechanism terms if the industrial user's actual average daily flow rate was reduced solely as a result of the implementation of water concentration methods and technologies, and the actual average daily flow rates used in the original calculation of the equivalent mass limit were not based on the use of dilution as a substitute for treatment pursuant to 40 CFR 403.6(d) and this title. The industrial user must also be in compliance with 40 CFR 403.17 (regarding the prohibition of bypass).

(Ord. 1240 § 53.10.030, passed 6-12-18)

53.135 STATE REQUIREMENTS.

State requirements and limitations on discharges to the sewage system shall be met by all users which are subject to the standards if they are more stringent than federal requirements and limitations or this title.

(Ord. 1240 § 53.10.035, passed 6-12-18)

53.140 LOCAL LIMITS.

In addition to categorical pretreatment standards, no significant industrial user (SIU) shall discharge wastewater containing pollutants into the system in excess of limitations specified in its wastewater discharge permit or any other limits established by the city. The city may establish and revise from time to time standards for specified restricted substances. These standards shall be developed in accordance with 40 CFR 403.5 and shall implement the objectives of this title. These standards, including best management practices (BMPs), are ~~only~~ applicable to ~~significant~~ all industrial users. Standards established in accordance with this title will be deemed pretreatment standards for the purposes of Section 307(d) of the Clean Water Act. Wherever a discharger is subject to both categorical pretreatment standards and a local limit for a given pollutant, the more stringent limit or applicable pretreatment standard shall apply. The city may also develop best management practices (BMPs) to implement permit specific and local limits for industrial users. BMPs shall be considered local limits and pretreatment standards. The city may impose mass limitations in addition to (or in place of) concentration-based limitations.

(A) Concentration-based numeric local limits for the City of Prineville have been established as follows:

Pollutant	Limit (mg/L)
Arsenic	0.54
Cadmium	0.72
Chromium	2.16
Copper	1.01
Cyanide	1.15
Lead	0.54
Mercury	0.16
Nickel	1.86
Selenium	0.05
Silver	1.09
Zinc	0.82

(B) In addition to the City's numeric local limits and to promote rate equity, wastewater with BOD or TSS concentrations higher than 400 mg/L will be considered extra strength wastewater and may be subject to an extra strength charge. Refer to Chapter 54 of the City of Prineville Municipal Code for more information regarding extra strength wastewater.

(C) Commercial and industrial users shall not discharge wastewater with a pH lower than 5.5 standard units or greater than 9.5 standard units.

(D) Commercial and industrial users with potential to discharge fats, oils, or grease (FOG), such as restaurants, hotels, etc., are required to provide regularly maintained grease traps and/or grease separators. Commercial and industrial users shall not discharge wastewater with FOG concentrations greater than 400 mg/L.

(F) Commercial and industrial users shall not discharge wastewater with a Total Dissolved Solids (TDS) concentration greater than 500 mg/L.

(Ord. 1240 § 53.10.040, passed 6-12-18)

53.145 RIGHT OF REVISION.

The city reserves the right to establish, by ordinance, resolution or in wastewater discharge permits, more stringent standards or requirements on discharges to the sewage system.

(Ord. 1240 § 53.10.045, passed 6-12-18)

53.150 SPECIAL AGREEMENT.

The city may enter into special agreements with users setting out special terms under which they may discharge to the sewage system. Users may request a net/gross adjustment to a categorical

standard in accordance with 40 CFR 403.30. They may also request a variance from the categorical pretreatment standard from DEQ in accordance with 40 CFR 403.13. In no case will a special agreement waive compliance with a categorical pretreatment standard, federal pretreatment requirement, or this title.

(Ord. 1240 § 53.10.050, passed 6-12-18)

53.155 DILUTION.

No user may increase the use of process water, or in any way attempt to dilute a discharge, as a partial or complete substitute for adequate treatment to achieve compliance with an applicable pretreatment standard or requirement unless expressly authorized by an applicable pretreatment standard or requirement. The city may impose mass limitations on users that may be using dilution to meet applicable pretreatment standards or requirements or in other cases when the imposition of mass limitations is appropriate.

(Ord. 1240 § 53.10.055, passed 6-12-18)

53.160 PRETREATMENT FACILITIES.

Users shall provide wastewater treatment to comply with Chapter 53 and shall achieve compliance within the time limitations specified by the EPA, the state, or the city, whichever is most stringent. Any facilities required to pretreat wastewater to a level acceptable to the city shall be provided, operated, and maintained at the user's expense. Detailed plans showing the pretreatment facilities and operating procedures shall be submitted to the city for review and construction shall not proceed until the plans are approved in writing by the city. The review of the plans and operating procedures does not relieve the users from the responsibility of modifying the facility as necessary to produce a discharge that complies with Chapter 53.

(Ord. 1240 § 53.10.060, passed 6-12-18)

53.165 COMPLIANCE DEADLINE.

Compliance by existing sources covered by categorical pretreatment standards shall be within three years of the date the standard is effective unless a shorter compliance time is specified in the appropriate standard. The city shall establish a final compliance deadline date for any existing user not covered by categorical pretreatment standards or for any categorical user when the local limits for said user are more restrictive than the federal categorical pretreatment standards.

~~New sources and new users are required to comply with applicable pretreatment standards within the shortest feasible time, not to exceed 90 days from the beginning of discharge.~~ New sources and new users shall install, have in operating condition, and shall start up all pollution control equipment required to meet applicable pretreatment standards before beginning to discharge.

Any wastewater discharge permit issued to a categorical user shall not contain a compliance date beyond any deadline date established in EPA's categorical pretreatment standards. Any other existing user or a categorical user that must comply with a more stringent local limit who is in noncompliance with any local limits shall be provided with a compliance schedule placed in an industrial wastewater permit to ensure compliance within the shortest time feasible.

(Ord. 1240 § 53.10.065, passed 6-12-18)

53.170 ADDITIONAL PRETREATMENT MEASURES.

(A) The Director of Public Works may require users to restrict their discharge during peak flow periods, designate that certain wastewater be discharged only into specific sewers, relocate and/or consolidate points of discharge, separate sewage wastestreams from industrial wastestreams, and such other conditions as may be necessary to protect the sewage system and determine the user's compliance with the requirements of this title.

(B) Each user discharging into the sewage system more than 25,000 gallons per day or more than 5% of the average daily flow into the sewage system, whichever is less, shall install and maintain, on its property and at its expense, a suitable storage and flow-control facility to ensure equalization of flow over a 24-hour period. The facility shall have a capacity for at least 50% of daily discharge volume and shall be equipped with alarms and a rate of discharge controller and shall be regulated as directed by the city. A wastewater discharge permit may be issued solely for flow equalization.

(C) Grease, oil, and sand interceptors shall be provided when, in the opinion of the city, they are necessary for the proper handling of wastewater containing excessive amounts of grease and oil, or sand, except that such interceptors shall not be required for residential users. All grease, oil, and sand interceptors shall be installed in conformance with the most recent revision of the Oregon Plumbing Specialty Code, the rules adopted thereunder, and any statute or rule of general applicability administered by the State of Oregon Building Codes Division. All interception units shall be of type and capacity approved by the city and shall be located to be easily accessible for cleaning and inspection. Interceptors shall be inspected, cleaned, and repaired regularly, as needed, by the user at its expense. All records for inspection, cleaning and repair must be maintained and readily available for review by city staff. Records should include third party cleaning manifests.

(D) Users with the potential to discharge flammable substances may be required to install and maintain an approved combustible gas detection meter.

(Ord. 1240 § 53.10.070, passed 6-12-18)

53.175 SLUG CONTROL PLAN.

(A) *General provisions.* All users shall provide protection from accidental or intentional discharges of materials that may interfere with or cause pass through to the sewage system by developing and implementing a slug control plan. Facilities necessary to prevent the discharge of prohibited or restricted substances shall be provided and maintained at the user's cost and expense. A plan showing facilities and operating procedures to provide this protection shall be submitted to the city for review and approval before implementation of the plan. Review and approval of the plans and operating procedures by the city does not relieve the user from the responsibility to modify its facility as necessary to meet the requirements of Chapter 53. The plan shall be posted and available for inspection at the facility during normal business hours. SIUs must notify the city immediately of any changes at their facilities, not already addressed in their slug control plan or other slug control requirements, that may affect the potential for slug discharge.

(B) *Specific provisions.* The city may require any user to develop, submit for approval, and implement a slug control plan. The need and requirement for a plan shall be included in the user's wastewater discharge permit.

(C) A slug control plan shall address, at a minimum, the following:

(1) Description of discharge practices, including nonroutine batch discharges;

(2) Description of stored chemicals;

(3) Procedures for immediately notifying the city of any accidental or slug discharge; and

(4) Procedures to prevent adverse impact from any accidental or slug discharge. Procedures include, but are not limited to, inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants, including solvents, and/or measures and equipment for emergency response.

(D) Users shall notify the city immediately after the occurrence of a slug or accidental discharge of substance regulated by Chapter 53. The notification shall include location, date and time of discharge, type of waste, concentration and volume, and corrective actions. Any affected user shall be liable for any expense, loss, or damage incurred by the city, in addition to the amount of any penalties imposed on the city as a result of the discharge.

(E) Within five days following an accidental discharge, the user shall submit to the city a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences. The notification does not relieve the user of any expense, loss, damage, or other liability that may be incurred as a result of damage to the sewage system, fish kills, or any other damage to person or property. The notification does not relieve the user of any fines, civil penalties, or other liabilities that may be imposed by Chapter 53 or other applicable law.

(F) Signs shall be permanently posted in conspicuous places on the user's premises advising employees whom to call in the event of a slug or accidental discharge. Employers shall instruct all employees who may cause or discover such a discharge with respect to emergency notification procedures.

(Ord. 1240 § 53.10.075, passed 6-12-18)

53.180 SEPTIC TANK WASTES.

(A) Septic tank waste may be introduced into the sewage system only at a designated receiving structure within the treatment plant area, and only at times designated by the city. Those wastes must comply with Chapter 53 and other requirements imposed by the city. Wastewater discharge licenses for individual vehicles to use the facilities shall be issued by DEQ. Licenses must be current, up to date, in good standing, and have obtained testing and approval by the city before discharge will be allowed.

(B) Septic tank waste haulers may only discharge loads at locations specifically designated by the city. The city may require the hauler to provide a waste analysis of any load prior to discharge.

(C) Septic tank waste haulers must provide a city waste-tracking form for every load. This form shall include, at a minimum, the name and address of the waste hauler, license number, truck identification, sources of waste, and volume and characters of waste.

(Ord. 1240 § 53.10.080, passed 6-12-18)

53.185 PERMITS.

(A) No significant industrial user (SIU) may discharge wastewater into the sewage system without first applying for and obtaining a wastewater discharge permit from the city. Any violation of the terms and conditions of a wastewater discharge permit is a violation of this chapter. Obtaining a wastewater discharge permit does not relieve a permittee of the obligation to comply with all federal and state pretreatment standards and requirements or with any requirements of federal, state, and local law.

(B) The city may require other users, including those delivering trucked waste, to obtain wastewater discharge permits to carry out the purposes of this title.

(Ord. 1240 § 53.10.085, passed 6-12-18)

DISCHARGE PERMITS

53.205 EXISTING SIU.

Any SIU that does not currently have a wastewater discharge permit must cease discharges until a wastewater discharge permit is obtained.

(Ord. 1240 § 53.20.010, passed 6-12-18)

53.210 NEW SOURCES AND NEW USERS.

Any new source and any new user that is an SIU must apply for a wastewater discharge permit at least 90 days before startup and may not discharge until its wastewater discharge permit is issued. New sources and new users must include in their application information on the method of pretreatment they intend to use to meet applicable pretreatment standards.

(Ord. 1240 § 53.20.020, passed 6-12-18)

53.215 APPLICATION CONTENTS.

All users required to obtain a wastewater discharge permit must submit, at a minimum, the following information. Submitting the following information complies with 40 CFR 403.12(b).

(A) *Identifying information.* The user shall submit the name and address of the facility, including the names of the operator and owners.

(B) *Permits.* The user shall submit a list of all environmental control permits held by or for the facility.

(C) *Description of operations.* The user shall submit a brief description of the nature, average rate of production, and standard industrial classification of the operation(s) carried out by the industrial user, including a list of all raw materials and chemicals used or stored at the facility which are or could accidentally or intentionally be discharged to the sewage system; number and type of employees; hours of operation; each product produced by type, amount, process or processes, and rate of

production; type and amount of raw materials processed (average and maximum per day) and the time and duration of discharges. This description should also include a schematic process diagram which indicates points of discharge to the sewage system from the regulated or manufacturing processes; site plans; floor plans; mechanical and plumbing plans; and details to show all sewers, sewer connections, inspection manholes, sampling chambers and appurtenances by size, location and elevation.

(D) *Flow measurement.*

(1) Categorical User. The user shall submit information showing the measured average daily and maximum daily flow, in gallons per day, to the sewage system from each of the following:

(a) Regulated or manufacturing process streams; and

(b) Other streams as necessary to allow use of the combined wastestreams formula (40 CFR 403.6(e)).

(2) *Noncategorical user.* The user shall submit information showing the measured average daily and maximum daily flow, in gallons per day, to the sewage system from each of the following:

(a) Total process flow, wastewater treatment plant flow, total plant flow or individual manufacturing process flow as required by the Director of Public Works. The city may allow for verifiable estimates of these flows where justified by costs or feasibility considerations.

(E) *Measurements of pollutants.*

(1) Categorical user.

(a) The user shall identify the applicable pretreatment standards for each regulated or manufacturing process.

(b) In addition, the user shall submit the results of sampling and analysis identifying the nature and concentration (or mass where required by the categorical pretreatment standard or as required by the city) of regulated pollutants in the discharge from each regulated or manufacturing process. Both daily maximum and average concentration (or mass, where required) shall be reported. The sample shall be representative of daily operations. In cases where the standard required compliance with a best management practice or pollution prevention alternative, the user shall submit documentation as required by the city or the applicable standards to determine compliance with the standard. Sampling performed shall conform to sampling and analytical procedures required by Chapter 53.

(c) The user shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this subsection.

(d) Where an alternate concentration or mass limit has been calculated in accordance with 40 CFR 403.6(e) for a categorical user, this adjusted limit along with supporting data shall be submitted as part of the application.

(2) *Noncategorical significant industrial user (SIU).*

(a) The user shall identify the applicable pretreatment standards for its wastewater discharge.

(b) In addition, the user shall submit the results of sampling and analysis identifying the nature and concentration in the discharge (or mass where required by the city) of regulated pollutants, as appropriate. Both daily maximum and average concentration (or mass, where required) shall be reported. The sample shall be representative of daily operations and shall conform to sampling and analytical procedures required by Chapter 53.

(c) The user shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this subsection.

(F) *Certification.* The user shall submit a statement that has been reviewed by an authorized representative of the user, and certified by a qualified professional, indicating whether the applicable pretreatment standards are being met on a consistent basis, and, if not, whether additional operation and maintenance (O&M) and/or additional pretreatment is required for the user to meet the applicable pretreatment standards and requirements.

(G) *Compliance schedule.* If additional pretreatment and/or O&M will be required to meet the applicable pretreatment standards, the user shall submit the shortest schedule by which the user will provide such additional pretreatment and/or O&M. The user's schedule shall conform to the requirements of Chapter 53. The completion date in this schedule shall not be later than the compliance date established by Chapter 53.

(1) Where the user's categorical pretreatment standard has been modified by a removal allowance (CFR 403.7), the combined wastestream formula (40 CFR 403.6(e)), and/or a fundamentally different factors variance (40 CFR 403.13) at the time the user submits the report required by this subsection, the information required by this section shall pertain to the modified limits.

(2) If the categorical pretreatment standard is modified by a removal allowance (40 CFR 403.7), the combined wastestream formula (40 CFR 403.6(e)), and/or a fundamentally different factors variance (40 CFR 403.13) after the user submits the report required by this section, then a report containing the modified information shall be submitted by the user within 60 days after the new limit is approved.

(H) *Submittal of information.* The user shall submit any other information as may be deemed necessary by the city to evaluate the wastewater discharge permit application. Incomplete or inaccurate applications will not be processed and will be returned to the user for revision.

(Ord. 1240 § 53.20.030, passed 6-12-18)

53.220 SIGNATORY AND CERTIFICATION REQUIREMENT.

All wastewater discharge permit applications and user reports must be signed by an authorized representative of the user and contain the following certification statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(Ord. 1240 § 53.20.040, passed 6-12-18)

53.225 WASTEWATER DISCHARGE AUTHORIZATION.

The city may use alternate control mechanisms to control wastewater being discharged into the city's sewage system. These control mechanisms may include best management practice (BMP).

(Ord. 1240 § 53.20.050, passed 6-12-18)

53.230 WASTEWATER DISCHARGE PERMIT DECISIONS.

The city will evaluate the data furnished by the user and may require additional information. Within 60 days of receipt of a complete wastewater discharge permit application, the city will determine whether or not to issue a wastewater discharge permit. The permit shall be issued within 60 days of full evaluation and acceptance of the data furnished if all requirements are complied with. The city may deny any application for a wastewater discharge permit that does not meet the applicable standards or that lacks sufficient information.

(Ord. 1240 § 53.20.060, passed 6-12-18)

53.235 WASTEWATER DISCHARGE PERMIT CONTENTS.

Wastewater discharge permits shall include conditions as to prevent pass through or interference, protect the quality of the water body receiving the treatment plant's effluent, protect worker health and safety, facilitate sludge management and disposal, and protect against damage to the sewage system.

(A) Wastewater discharge permits must contain the following conditions:

(1) A statement that indicates wastewater discharge permit duration shall not exceed five years;

(2) A statement that the wastewater discharge permit is nontransferable without prior notification to and approval from the city, and provisions for furnishing the new owner or operator with a copy of the existing wastewater discharge permit;

(3) Effluent limits, including best management practices, based on applicable pretreatment standards and requirements, including any special state requirements;

(4) Self-monitoring, sampling, reporting, notification, submittal of technical reports, compliance schedules, and recordkeeping requirements. These requirements shall include an identification of pollutants, or best management practices, to be monitored (including the process for seeking a waiver for a pollutant neither present nor expected to be present in the discharge or

a specific waived pollutant in the case of an individual control mechanism), sampling location, sampling frequency, and sample type based on federal, state, and local law;

(5) The process for seeking a waiver from monitoring for a pollutant neither present nor expected to be present in the discharge in accordance with § 53.315;

(6) Requirement for immediate notification to the city where self-monitoring results indicate noncompliance;

(7) Requirement to report a bypass or upset of a pretreatment facility;

(8) Requirement to control slug discharges, if determined by the city to be necessary;

(9) Requirement to report immediately to the city all discharges, and facility changes, including slug loadings, that could cause problems to the sewage system;

(10) Requirement for the SIU who reports noncompliance to repeat the sampling and analysis and submit results to the city within 30 days after becoming aware of the violation;

(11) A statement of applicable civil, criminal, and administrative penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule.

(B) Wastewater discharge permits may contain, but need not be limited to, the following conditions:

(1) Limits on the average and/or maximum rate of discharge, time of discharge, and/or requirements for flow regulation and equalization;

(2) Requirements for the installation of pretreatment technology, pollution control, or construction of appropriate containment devices, designed to reduce, eliminate, or prevent the introduction of pollutants into the treatment works;

(3) Requirements for the development and implementation of spill/slug control plans or other special conditions including management practices necessary to adequately prevent accidental, unanticipated, or routine discharges;

(4) Development and implementation of waste minimization plans to reduce the amount of pollutants discharged to the sewage system;

(5) The unit charge or schedule of user charges and fees for the management of the wastewater discharged to the sewage system;

(6) Requirements for installation and maintenance of inspection and sampling facilities and equipment;

(7) A statement that compliance with the wastewater discharge permit does not relieve the permittee of responsibility for compliance with all applicable federal and state pretreatment standards, including those which become effective during the term of the wastewater discharge permit;

(8) Other conditions as deemed appropriate by the city to ensure compliance with this title, and state and federal laws, rules and regulations.

(Ord. 1240 § 53.20.070, passed 6-12-18)

53.240 APPEALS.

Any person, including the user, may petition the city to reconsider the terms of a wastewater discharge permit or the denial of a wastewater discharge permit within 30 days of its issuance or denial. A wastewater discharge permit or notice of denial of such permit shall contain notice of the petition for review procedures that a person may follow to obtain administrative review of the permit decision.

(A) Failure to submit a timely petition for review waives any right to an administrative appeal.

(B) A petition for review shall be in writing and served either in person or by certified mail to the city. In its petition, the appealing party must specify the name and address of the person filing the petition for review, the wastewater discharge permit provisions objected to, the reasons for this objection, and the alternative condition, if any, it seeks to place in the wastewater discharge permit.

(C) The effectiveness of the wastewater discharge permit shall not be stayed pending the appeal.

(D) The city shall conduct a hearing to determine the merits of the petition. Prior to the hearing, the person conducting the hearing shall notify the petitioner of the time and place of the hearing, and that the petitioner will have the opportunity to present evidence and make statements in support of the appeal. The person conducting the hearing shall have the sole discretion to determine the amount of time allowed for the appeal hearing. The person conducting the hearing may rely on any relevant evidence provided by city staff or obtained by any other reasonable means. The decision on the hearing shall be in writing. If the city fails to make a determination on the petition within 30 days, the petition shall be deemed to be denied, and the permit denial or permit conditions appealed from shall be the final decision of the city.

(E) The decision on the petition for review is the final decision of the city. The final decision may only be challenged under the writ of review provisions of Oregon law.

(Ord. 1240 § 53.20.080, passed 6-12-18)

53.245 DURATION.

Wastewater discharge permits shall be issued for a specified time period, not to exceed five years. A wastewater discharge permit may be issued for a period less than five years, at the discretion of the city. Each wastewater discharge permit will indicate its expiration date.

(Ord. 1240 § 53.20.090, passed 6-12-18)

53.250 MODIFICATION.

The city may modify a wastewater discharge permit for good cause including, but not limited to, the following:

(A) To incorporate any new or revised federal, state, or local pretreatment standards or requirements;

(B) To address significant alterations or additions to the user's operation, processes, or wastewater volume or character since the time of wastewater discharge permit issuance;

(C) A change in the sewage system that requires either a temporary or permanent reduction or elimination of the authorized discharge;

(D) Information indicating that the permitted discharge poses a threat to the sewage system, city personnel, or receiving waters;

(E) Violation of any terms or conditions of the wastewater discharge permit;

(F) Misrepresentation or failure to fully disclose all relevant facts in the wastewater discharge permit application or any required report;

(G) Revision of categorical pretreatment standards pursuant to 40 CFR 403.13;

(H) To correct typographical or other errors in the wastewater discharge permit; or

(I) To reflect a transfer of the facility ownership and/or operation to a new owner/operator.

(Ord. 1240 § 53.20.100, passed 6-12-18)

53.255 TRANSFER.

Wastewater discharge permits may be reassigned or transferred to a new owner and/or operator only if the permittee gives at least 90 days' advance notice to the city and the city approves the transfer. The notice must include a written certification by the new owner and/or operator that:

(A) States that the new owner and/or operator has no immediate intent to change the facility's operations and processes;

(B) States the date on which the transfer is to occur; and

(C) Assumes full responsibility for complying with the existing wastewater discharge permit beginning on the date of the transfer.

Failure to provide advance notice of a transfer renders the wastewater discharge permit void as of the date of facility transfer.

Provided that the notice required above occurred and that there were no significant changes to the manufacturing operation or wastewater discharge, the new owner will be considered an existing user and will be covered by the existing limits and requirements in the previous owner's permit.

(Ord. 1240 § 53.20.110, passed 6-12-18)

53.260 REVOCATION.

Wastewater discharge permits may be revoked for, but not limited to, the following reasons:

(A) Failure to notify the city of significant changes to the wastewater prior to the changed discharge;

(B) Failure to provide prior notification to the city of changed conditions;

(C) Misrepresentation or failure to fully disclose all relevant facts in the wastewater discharge permit application;

(D) Falsifying self-monitoring reports;

(E) Tampering with monitoring equipment;

(F) Refusing to allow the city timely access to the facility premises and records;

(G) Failure to meet discharge limitations;

(H) Failure to pay fines;

(I) Failure to pay sewer charges;

(J) Failure to meet compliance schedules;

(K) Failure to complete a wastewater survey or the wastewater discharge permit application;

(L) Failure to provide advance notice of the transfer of a permitted facility;

(M) If the city has to invoke its emergency provision; or

(N) Violation of any pretreatment standard or requirement, or any terms of the wastewater discharge permit or this title.

Wastewater discharge permits shall be voidable upon cessation of operations or transfer of business ownership. All wastewater discharge permits issued to a particular user are void upon the issuance of a new wastewater discharge permit to that user.

(Ord. 1240 § 53.20.120, passed 6-12-18)

53.265 REISSUANCE.

A user who is required to have a wastewater discharge permit shall apply for wastewater discharge permit reissuance by submitting a complete wastewater discharge permit application at least 90 days prior to the expiration of the user’s existing wastewater discharge permit. A user whose existing wastewater discharge permit has expired and who has submitted its reapplication in the time period specified herein shall be deemed to have an effective wastewater discharge permit until the city issues or denies the new wastewater discharge permit. A user whose existing wastewater discharge

permit has expired and who failed to timely submit its reapplication will be deemed to be discharging without a wastewater discharge permit.

(Ord. 1240 § 53.20.120, passed 6-12-18)

REPORTING REQUIREMENTS

53.305 BASELINE MONITORING REPORTS.

(A) Within either 180 days after the effective date of a categorical pretreatment standard or the final administrative decision on a category determination under 40 CFR 403.6(a)(4), whichever is later, existing categorical users currently discharging to or scheduled to discharge to the sewage system shall submit to the city a report which contains the information listed in subsection (B) of this section. At least 90 days prior to the commencement of their discharge, new sources, and sources that become categorical users subsequent to the promulgation of an applicable categorical standard, shall submit to the city a report that contains the information listed in subsection (B) of this section. A new source shall also be required to report the method of pretreatment it intends to use to meet applicable categorical standards. A new source shall also give estimates of its anticipated flow and quantity of pollutants discharged.

(B) Users described above shall submit the information set forth below.

(1) *Identifying information.* The name and address of the facility, including the name of the operator and owner.

(2) *Environmental permits.* A list of any environmental control permits held by or for the facility.

(3) *Description of operations.* A brief description of the nature, average rate of production, and standard industrial classifications of the operation(s) carried out by such user. This description should include a schematic process diagram which indicates points of discharge to the POTW from the regulated processes.

(4) *Flow measurement.* Information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from regulated process streams and other streams, as necessary to allow use of the combined wastestream formula set out in 40 CFR 403.6(e).

(5) *Measurement of pollutants.*

(a) The categorical pretreatment standards applicable to each regulated process.

(b) The results of sampling and analysis identifying the nature and concentration (and/or mass, where required by the standard or by the city) of regulated pollutants in the discharge from each regulated process. Instantaneous, daily maximum, and long-term average concentrations (or mass, where required) shall be reported. The sample shall be representative of daily operations. In cases where the standard required compliance with a best management practices or pollution prevention alternative, the user shall submit documentation as required by the control authority or the applicable pretreatment standard necessary to determine the compliance status of the user.

(c) Sampling must be performed in accordance with the procedures required by Chapter 53. Samples should be taken immediately downstream from the regulated process if no pretreatment exists. If other wastewaters are mixed with the regulated wastewater prior to the pretreatment, the user should measure the flows and concentrations necessary to allow use of the combined wastewater formula in 40 CFR 403.6(e) to evaluate compliance with the pretreatment standards. Where an alternate concentration or mass limit has been calculated in accordance with 40 CFR 403.6(e), this adjusted limit along with supporting data shall be submitted to the city.

(6) *Certification.* A statement, reviewed by the user's authorized representative and certified by a qualified professional, indicating whether pretreatment standards are being met on a consistent basis, and, if not, whether additional operation and maintenance (O&M) and/or additional pretreatment is required to meet the pretreatment standards and requirements.

(7) *Compliance schedule.* If additional pretreatment and/or O&M will be required to meet the pretreatment standards, the shortest schedule by which the user will provide such additional pretreatment and/or O&M will be used. The completion date in this schedule shall not be later than the compliance date established for the applicable pretreatment standard. A compliance schedule pursuant to this section must meet the requirements of Chapter 53.

(8) *Signature and certification.* All baseline monitoring reports must be signed and certified as required by this chapter.

(Ord. 1240 § 53.30.010, passed 6-12-18)

53.310 FINAL COMPLIANCE REPORT.

(A) Within 90 days following the date for final compliance of an existing significant industrial user with applicable pretreatment standards and requirements set forth in this title, in federal categorical standards, or in a wastewater discharge permit, or, in the case of a new source or a new user considered by the city to fit the definition of SIU, within 90 days following commencement of the introduction of wastewater into the sewage system, the affected user shall submit to the city a report containing the information outlined in § 53.305.

(B) For users subject to equivalent mass or concentration limits established by the city in accordance with procedures established in 40 CFR 403.6(c), this report shall contain a reasonable measure of the user's long-term production rate. For all other users subject to categorical pretreatment standards expressed in terms of allowable pollutant discharge per unit of production (or other measure of operation), this report shall include the user's actual production during the appropriate sampling period.

(Ord. 1240 § 53.30.020, passed 6-12-18)

53.315 PERIODIC COMPLIANCE REPORT.

(A) Any user that is required to have an industrial waste discharge permit and performs self-monitoring shall submit to the city during the months of June and December, unless the city has determined that the self-monitoring may be reduced to report no less frequently than once a year, or unless required more frequently in the pretreatment standard or by the DEQ, a report indicating the nature of the effluent over the previous reporting period. The frequency of monitoring shall be as

prescribed within the industrial waste discharge permit. A reporting form will be provided by the city. At a minimum, users shall sample their discharge at least twice per year, unless required less frequently as described above. In cases where a local limit requires compliance with a best management practice or pollution prevention alternative, the user must submit documentation required by the city to determine the compliance status of the user.

(B) Periodic compliance reports are to be postmarked or received by the city by, on, or before the fifteenth of the month following the conclusion of the reporting period.

(C) The report shall include a record of the concentrations (and mass if specified in the wastewater discharge permit) of the pollutants listed in the wastewater discharge permit that were measured and a record of all flow measurements (average and maximum) taken at the designated sampling locations and shall also include any additional information required by this title or the wastewater discharge permit. Production data shall be reported if required by the wastewater discharge permit. Both daily maximum and average concentration (or mass, where required) shall be reported. If a user sampled and analyzed more frequently than what was required by the city or by this title, using methodologies in 40 CFR Part 136, it must submit all results of sampling and analysis of the discharge during the reporting period. All laboratory reports providing data for organic and metal parameters shall include the following information: sampling date, sample location, date of analysis, parameter name, CAS number analytical method/number, method detection limit (MDL), laboratory practical quantitation limit (PQL), reporting units, and concentration detected. Analytical results from samples sent to a contracted laboratory must have information on the chain of custody, the analytical method, QA/QC results, and documentation of accreditation for the parameter.

(D) The city may authorize the industrial user subject to a categorical pretreatment standard to forgo sampling of a pollutant regulated by a categorical pretreatment standard if the industrial user has demonstrated through sampling and other technical factors that the pollutant is neither present nor expected to be present in the discharge or is present only at background levels from intake waste and without any increase in the pollutant due to activities of the industrial user.

(E) Any user subject to equivalent mass or concentration limits established by the city or by unit production limits specified in the applicable categorical standards shall report production data.

(F) If the city calculated limits to factor out dilution flows or nonregulated flows, the user will be responsible for providing flows from the regulated process flows, dilution flows and nonregulated flows.

(G) Flows shall be reported on the basis of actual measurement; provided, however, that the city may accept reports of average and maximum flows estimated by verifiable techniques if the city determines that an actual measurement is not feasible.

(H) Discharges sampled shall be representative of the user’s daily operations and samples shall be taken in accordance with this title. In cases where the pretreatment standard requires compliance with a best management practice (or pollution prevention alternative), the user shall submit documentation required by the city or the pretreatment standard necessary to determine the compliance status of the user.

(I) The city may require reporting by users that are not required to have an industrial wastewater discharge permit if information or data is needed to establish a sewer charge, determine the treatability of the effluent, or determine any other factor which is related to the operation and maintenance of the sewage system.

(J) The city may require self-monitoring by the user or, if requested by the user, may agree to perform the periodic compliance monitoring needed to prepare the periodic compliance report required under this section. If the city agrees to perform such periodic compliance monitoring, it may charge the user for such monitoring, based upon the costs incurred by the city for sampling and analyses. The user may be charged for the cost of resampling by the city in the event of a violation or violations. Any such charges shall be added to the normal sewer charge and shall be payable as part of the sewer bills. The city is under no obligation to perform periodic compliance monitoring for a user.

(K) Users that have approved monitoring waivers as to specific pollutants must certify on each report that there has been no increase in the specific pollutant in the wastestream due to activities of the user. The certification shall be in the following form:

> Based on my inquiry of the person or persons directly responsible for managing compliance with the Pretreatment Standard for 40 CFR ____ [specify applicable National Pretreatment Parts], I certify that, to the best of my knowledge and belief, there has been no increase in the level of ____ [list pollutant(s)] in the wastewaters due to the activities at the facility since the filing of the most recent report.

(Ord. 1240 § 53.30.030, passed 6-12-18)

53.320 PRETREATMENT STANDARDS COMPLIANCE SCHEDULES.

(A) The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the user to meet the applicable pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.).

(B) No increment referred to in subsection (A) of this section shall exceed nine months.

(C) Not later than 14 days following each date in the schedule and the final date for compliance, the user shall submit a progress report to the city including, at a minimum, whether or not it complied with the increment of progress to be met on such date and, if not, the date on which it expects to comply with this increment of progress, the reason for delay, and the steps being taken by the user to return the construction to the schedule established. In no event shall more than nine months elapse between such progress reports.

(Ord. 1240 § 53.30.040, passed 6-12-18)

53.325 NOTIFICATION OF SIGNIFICANT PRODUCTION CHANGES.

Any user operating under a wastewater discharge permit incorporating equivalent mass or concentration limits shall notify the city within two business days after the user has a reasonable basis to know that the production level will significantly change within the next calendar month.

(Ord. 1240 § 53.30.050, passed 6-12-18)

53.330 HAZARDOUS WASTE NOTIFICATION.

Any user discharging more than 33 pounds (15 kilograms) of hazardous waste as defined in 40 CFR 261 (listed or characteristic wastes) in a calendar month, or any facility discharging any amount of acutely hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e) is required to provide a one-time notification in writing to the city, to the EPA Region 10 Office of Waste and Chemicals Management Director, and to DEQ. Any existing user exempt from this notification shall comply with the requirements contained herein within 30 days of becoming aware of a discharge of 33 pounds (15 kilograms) of hazardous wastes in a calendar month or any discharge of acutely hazardous wastes to the city sewage system. The notification shall include:

(A) The name of the hazardous waste as set forth in 40 CFR Part 261;

(B) The EPA hazardous waste number; and

(C) The type of discharge (continuous, batch, or other).

(D) If an industrial user discharges more than 220 pounds (100 kilograms) of such waste per calendar month to the sewage system, the notification shall also contain the following information to the extent it is known or readily available to the industrial user:

(1) An identification of the hazardous constituents contained in the wastes;

(2) An estimation of the mass and concentration of such constituents in the wastestreams discharged during that calendar month; and

(3) An estimation of the mass of constituents in the wastestreams expected to be discharged during the following 12 months.

These notification requirements do not apply to pollutants already reported under the self-monitoring requirements.

Whenever the EPA publishes final rules identifying additional hazardous wastes or new characteristics of hazardous waste, a user shall notify the city of the discharge of such a substance within 90 days of the effective date of the regulations.

In the case of any notification made under this subsection, an industrial user shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

(Ord. 1240 § 53.30.060, passed 6-12-18)

53.335 NOTICE OF POTENTIAL PROBLEMS.

A user shall notify the city immediately of all discharges and changes at the facility that could cause adverse impacts to the sewage system, including any slug loads. The notification shall include the concentration and volume and corrective action. Steps being taken to reduce any adverse impact should also be noted during the notification. Any user who discharges a slug load of pollutants shall be liable for any expense, loss, or damage to the sewage system, in addition to the amount of any fines imposed on the city under state or federal law.

(Ord. 1240 § 53.30.070, passed 6-12-18)

53.340 NONCOMPLIANCE REPORTING.

If sampling performed by a user indicates a violation, the user shall notify the city within 24 hours of becoming aware of the violation. The user shall also repeat the sampling within five days and submit the results of the repeat analysis to the city within 30 days after becoming aware of the violation, except the user is not required to resample if:

(A) The city performs sampling at the user at the frequency of at least once per month; or

(B) The city performs sampling at the user between the time when the user performs its initial sampling and the time when the user receives the results of this sampling.

(Ord. 1240 § 53.30.080, passed 6-12-18)

53.345 NOTIFICATION OF CHANGED DISCHARGE.

All users shall promptly notify the city in advance of any substantial change in the volume or any change in character of pollutants in their discharge, including significant manufacturing process changes, pretreatment modifications, and the listed or characteristic hazardous wastes for which the user has submitted initial notification under 40 CFR 403.12(p). Substantial change is defined to mean a change of 10% or more in discharge volume.

(Ord. 1240 § 53.30.090, passed 6-12-18)

53.350 REPORTS FROM UNPERMITTED USERS.

All users not required to obtain a wastewater discharge permit shall provide reports when and if required in writing by the city.

(Ord. 1240 § 53.30.100, passed 6-12-18)

53.355 RECORDKEEPING.

Users subject to the reporting requirements of this title, including documentation associated with best management practices, shall retain and make available for inspection and copying all records of information obtained pursuant to any monitoring activities undertaken by the user independent of such requirements. Records shall include the date, exact place, method, and time of sampling and the name of the person(s) taking the samples; the dates analyses were performed; who performed the analyses; the analytical techniques or methods used; and the results of such analyses. These records shall remain available for a period of at least five years. This period shall be automatically extended for the duration of any litigation concerning the user or the sewage system or where the user has been notified in writing of a longer retention period by the city.

(Ord. 1240 § 53.30.110, passed 6-12-18)

53.360 ANNUAL CERTIFICATION.

(A) A facility determined to be a nonsignificant categorial industrial user must annually submit the following certification statement. This certification must accompany an alternative report required by the city:

> Based on my inquiry of the person or persons directly responsible for managing compliance with the categorical Pretreatment Standards under 40 CFR ____, I certify that, to the best of my knowledge and belief that (a) during the period from _____, _____ to _____, _____ [months, days, year], the facility described as _____ [facility name] met the definition of a non-significant categorical Industrial User; (b) the facility complied with all applicable Pretreatment Standards and requirements during this reporting period; and (c) the facility never discharged more than 100 gallons of total categorical wastewater on any given day during this reporting period. This compliance certification is based upon information elsewhere in this document.

(B) A nondischarging categorical industrial user must annually submit the following certification statement.

> Based on my inquiry of the person or persons directly responsible for managing compliance with the categorical Pretreatment Standards under 40 CFR _____, I certify that, to the best of my knowledge and belief that during the period from _____, _____ to _____, _____ [months, days, year], (a) the facility described as _____ [facility name] met the definition of a non-discharging categorical Industrial User as described in PCC 53.115; (b) the facility complied with all applicable Pretreatment Standards and requirements during this reporting period; and (c) the facility never discharged categorical wastewater on any given day during this reporting period. This compliance certification is based upon information provided elsewhere in this document.

(Ord. 1240 § 53.30.120, passed 6-12-18)

SAMPLING AND ANALYTICAL REQUIREMENTS

53.405 GENERAL REQUIREMENTS.

All sample preservation procedures, container materials, maximum allowable holding times and analytical techniques to be submitted as part of any application or report required by this chapter shall be performed in accordance with the procedures and techniques specified in 40 CFR Part 136. Alternatively, a contractor with the required protocols listed in an approved comprehensive quality assurance plan may sample and analyze according to the protocols specified in that document.

(Ord. 1240 § 53.40.010, passed 6-12-18)

53.410 SAMPLING.

(A) Sampling for baseline monitoring reports (BMR) and 90-day compliance reports must include a minimum of four grab samples for total phenols and the parameters listed in § 53.140 ~~pH, cyanide, total phenols, oil and grease, sulfide and volatile organic compounds for facilities for which historical sampling data do not exist~~. The city may authorize a lower minimum for facilities with historical sampling data. The number of grab samples for periodic compliance reports shall be the number the city determines to be necessary to assess and assure compliance by industrial users with applicable pretreatment standards and requirements.

The city will determine on a case-by-case basis whether the user will be able to composite the individual grab samples. Grab samples must be used for pH, total phenols, and FOG. ~~pH, cyanide, total phenols, oil and grease, sulfide, and volatile organic compounds~~. For all other pollutants, 24-hour composite samples must be obtained through flow- or time-proportional composite sampling techniques, depending on circumstances. The city may waive flow-proportional composite sampling for any user that demonstrates that flow-proportional composite sampling is infeasible. Where time-proportional composite sampling or grab sampling is authorized by the city, the samples must be representative of the discharge and the decision to allow the alternative sampling must be documented in the industrial user file for that facility or facilities. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grab samples collected during a 24-hour period may be composited prior to the analysis as follows: For cyanide, total phenols, and sulfides, the samples may be composited in the laboratory or in the field; for volatile organics and oil and grease, the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by the city, as appropriate.

In those cases, samples may be obtained through time-proportional composite sampling techniques or through a minimum of four grab samples where the user demonstrates that this will provide a representative sample of the effluent being discharged.

(B) Samples shall be taken immediately downstream from any pretreatment facilities, immediately downstream from the regulated or manufactured process if no pretreatment exists, or at a location determined by the city and specified in the user's wastewater discharge permit. For categorical users, if other wastewaters are mixed with the regulated wastewater prior to pretreatment, the user shall measure the flows and concentrations necessary to allow use of the combined wastestream formula of 40 CFR 403.6(e) in order to evaluate compliance with the applicable categorical pretreatment standards. For other SIUs, for which the city has adjudged its local limits to factor out dilution flows, the user shall measure the flows and concentrations necessary to evaluate compliance with the adjudged pretreatment standard(s). In cases where a local limit requires compliance with a best management practice or pollution prevention alternative, the user must submit documentation required by the city to determine the compliance status of the user.

(C) All sample results shall indicate the time, date and place of sampling and methods of analysis and shall certify that the wastestream sampled is representative of normal work cycles and expected pollutant discharges from the user. If a user sampled and analyzed more frequently than required in its wastewater discharge permit using methodologies in 40 CFR Part 136, it must submit all results of sampling and analysis of the discharge as part of its self-monitoring report.

(Ord. 1240 § 53.40.020, passed 6-12-18)

53.415 ANALYTICAL REQUIREMENTS.

All pollutant analyses, including sampling techniques, shall be performed in accordance with the techniques prescribed in 40 CFR Part 136, unless otherwise specified in an applicable categorical pretreatment standard. If 40 CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, sampling and analyses must be performed in accordance with procedures approved by the EPA.

(Ord. 1240 § 53.40.030, passed 6-12-18)

53.420 CITY MONITORING.

The city will follow the procedures outlined in §§ 53.405 and 53.415 with sampling to monitor compliance.

(Ord. 1240 § 53.40.040, passed 6-12-18)

COMPLIANCE MONITORING

53.505 INSPECTION AND SAMPLING.

The city shall have the right to enter the facilities of any user to ascertain compliance with this title and any wastewater discharge permit or order. Users shall allow the city ready access to all parts of the premises for the purposes of inspection, sampling, records examination and copying, and the performance of any additional duties.

(A) Where a user has security measures in force that require proper identification and clearance before entry into its premises, the user shall make necessary arrangements with its security guards so that, on presentation of suitable identification, city representatives will be permitted to enter without delay for the purpose of performing their responsibility under this title.

(B) The city shall have the right to set up or require to be set up monitoring and sampling devices on the user's property to monitor compliance with this title.

(C) Any obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the user at the written or verbal request of the city and shall not be replaced unless and until authorized in writing by the city. The user is responsible for the cost of clearing obstructions.

(D) Unreasonable delays in allowing the city access to the user's premises shall be a violation of this title.

(Ord. 1240 § 53.50.010, passed 6-12-18)

53.510 MONITORING FACILITIES.

Each user shall provide and operate at its own expense a monitoring facility (including installation of a wastewater sample port) to allow inspection, sampling, continuous monitoring and flow measurements of each sewer discharge to the city in all commercial/industrial areas. Each monitoring facility shall be situated on the user's premises, except, where such a location would be impractical or cause undue hardship on the user, the city may concur with the facility being constructed in the public street or sidewalk area, providing that the facility is located so that it will not be obstructed by landscaping or parked vehicles. The city may require the construction and maintenance of sampling facilities at other locations (for example, at the end of a manufacturing line or a wastewater treatment system).

There shall be ample room in or near sampling facilities to allow accurate sampling and preparation of samples for analysis. The facility, including the sampling and measuring equipment, shall be maintained at all times in a safe and proper operating condition at the user's expense.

The city may require the user to install monitoring equipment as necessary. All monitoring facilities shall be constructed and maintained in accordance with all applicable local construction standards and specifications.

All devices used to measure wastewater flow and quality shall be calibrated to ensure their accuracy.

(Ord. 1240 § 53.50.020, passed 6-12-18)

53.515 SEARCH WARRANTS.

If the city has been refused access to a building, structure or property, or any part thereof, and is able to demonstrate probable cause to believe that there may be a violation of this title, or that there is a need to inspect as part of a routine inspection program of the city designed to verify compliance with this title or any wastewater discharge permit or order, or to protect the overall public health, safety and welfare of the community, then the city may seek issuance of a search and/or seizure warrant from the Crook County Circuit Court. The warrant shall be served at reasonable hours by the city in the company of a uniformed city police officer.

(Ord. 1240 § 53.50.030, passed 6-12-18)

53.520 VANDALISM.

No person shall willfully or negligently break, damage, destroy, uncover, deface, tamper with, or prevent access to any structure, appurtenance or equipment, or other part of the sewage system.

(Ord. 1240 § 53.50.040, passed 6-12-18)

53.525 CONFIDENTIAL INFORMATION.

Information and data on a user obtained from reports, surveys, wastewater discharge permit applications, wastewater discharge permits, and monitoring programs, and from city inspection and sampling activities, shall be available to the public without restriction, unless the user specifically requests and is able to demonstrate to the satisfaction of the city that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets under applicable state law. When requested and demonstrated by the user furnishing a product that such information should be held confidential, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public, except when disclosure is required by the Oregon Public Records Law. Information shall be made available immediately upon request to governmental agencies for uses related to the NPDES permit or pretreatment program and in enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics and other “effluent data” will not be recognized as confidential information.

(Ord. 1240 § 53.50.050, passed 6-12-18)

53.530 USERS IN SIGNIFICANT NONCOMPLIANCE.

The city shall publish annually, pursuant to 40 CFR 403.8(D)(viii), in a newspaper of general circulation in the city, a list of the industrial users that, during the previous 12 months, were in

significant noncompliance with applicable pretreatment standards and requirements. For the purposes of this provision, a significant industrial user or any industrial user which violates subsection (C), (D), or (G) of this section is in significant noncompliance if its violation meets one or more of the following criteria:

(A) Chronic violations of wastewater discharge limits, defined here as those in which 66% or more of wastewater measurements taken during a six-month period exceed (by any magnitude) a numerical pretreatment standard or requirement, including instantaneous limits, as defined by 40 CFR 403.3(l);

(B) Technical review criteria (TRC) violations, defined here as those in which 33% or more of wastewater measurements taken for each pollutant parameter during a six-month period equals or exceeds the product of the numeric pretreatment standard or requirement including instantaneous limits, as defined by 40 CFR 403.3(l), multiplied by the applicable criteria (1.4 for BOD, TSS, fats, oils, grease, and 1.2 for all other pollutants except pH);

(C) Any other violation of a pretreatment standard or requirement as defined by 40 CFR 403.3(l) (daily maximum, long-term average, instantaneous limit, or narrative standard) that the city believes has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of city personnel or the general public);

(D) Any discharge of pollutants that has caused imminent endangerment to the public or to the environment, or has resulted in the city's exercise of its emergency authority to halt or prevent such a discharge;

(E) Failure to meet, within 90 days of the scheduled date, a compliance schedule milestone contained in a wastewater discharge permit or enforcement order for starting construction, completing construction, or attaining final compliance;

(F) Failure to accurately report noncompliance; or

(G) Any other violation(s), which may include a violation of best management practices, which the city determines will adversely affect the operation or implementation of the local pretreatment program.

(Ord. 1240 § 53.50.060, passed 6-12-18)

ENFORCEMENT

53.605 NOTICE OF VIOLATION.

When the city finds that a user has violated or continues to violate any provision of Chapter 53, a wastewater discharge permit or order, or any other pretreatment standard or requirement, in addition to other remedies provided by this title, the city may serve that user with a written notice of violation via certified mail. Within five days of the receipt of the notice, an explanation of the violation and a plan for the satisfactory correction and prevention, to include specific required actions, shall be submitted by the user to the city. Submission of the correction plan in no way relieves the user of liability of any violations occurring before or after receipt of that notice of violation. Nothing in this chapter shall limit the authority of the city to take any action, including emergency actions or any other enforcement action, without first issuing a notice of violation.

(Ord. 1240 § 53.60.010, passed 6-12-18)

53.610 CONSENT ORDERS.

The city may enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with any user responsible for noncompliance. Those documents will include specific action to be taken by the user to correct the noncompliance within a time period specified by the document.

The documents shall have the same force and effect as administrative orders issued under this chapter and shall be judicially enforceable. Use of a consent order shall not be a bar against, or prerequisite for, taking any other action against the user.

(Ord. 1240 § 53.60.020, passed 6-12-18)

53.615 SHOW CAUSE HEARING.

The city may, in addition to other remedies, order a user that has violated or continues to violate any provision of this title, a wastewater discharge permit or order, or any other pretreatment standard or requirement, to appear before the city and show cause why the proposed enforcement action should not be taken. The notice shall include the time and place for the meeting, the proposed enforcement action, the reasons for such action, and a request that the user show cause why the proposed enforcement action should not be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least ten days before the hearing. The notice may be served on any authorized representative of the user. A show cause hearing shall not be a bar against, or prerequisite for, taking any other action against the user.

(Ord. 1240 § 53.60.030, passed 6-12-18)

53.620 COMPLIANCE ORDERS.

When the city finds that a user has violated or continued to violate any provision of Chapter 53, a wastewater discharge permit or order, or any other pretreatment standard or requirement, the city may, in addition to other remedies provided by this title, issue an order to the user responsible for the discharge directing that the user come into compliance within a specified time. If the user does not come into compliance within the time specified in the order, sewer service may be discontinued unless adequate treatment facilities, devices, or other related appurtenances are installed and properly operated. Compliance orders may also contain other requirements to address the noncompliance, including additional self-monitoring and management practices to minimize the amount of pollutants discharged to the sewer. Issuance of a compliance order shall not be a bar against, or a prerequisite for, taking any other action against the user.

(Ord. 1240 § 53.60.040, passed 6-12-18)

53.625 CEASE AND DESIST ORDERS.

When the city finds that a user has violated (or continues to violate) any provision of Chapter 53, a wastewater discharge permit or order, or any other pretreatment standard or requirement, or that the user’s past violations are likely to recur, the city may, in addition to other remedies provided by this title, issue an order to the user directing it to cease and desist all such violations and directing the user to:

(A) Immediately comply with all requirements; and

(B) Take appropriate remedial or preventive action needed to properly address a continuing or threatened violation, including halting operations and/or terminating the discharge.

Issuance of a cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the user.

(Ord. 1240 § 53.60.050, passed 6-12-18)

53.630 EMERGENCY SUSPENSIONS.

The city may immediately suspend a user's discharge permit when suspension is necessary to stop an actual or threatened discharge that reasonably appears to present or cause an imminent or substantial endangerment to the human health or welfare. The city may immediately suspend a user's discharge permit after notice and opportunity to respond if the discharge threatens to interfere with the operation of the sewage system or may endanger the environment.

(A) Any user notified of a suspension of its discharge permit shall immediately stop or eliminate its contribution. In the event of a user's failure to immediately comply voluntarily with the suspension order, the city may take steps, including immediate severance of the sewer connection, to prevent or minimize damage to the sewage system or endangerment to any individuals. The city shall allow the user to recommence its discharge when the user has demonstrated to the satisfaction of the city that the period of endangerment has passed unless the termination proceedings of this title are initiated against the user.

(B) A user that is responsible, in whole or in part, for any discharge presenting imminent endangerment, shall submit a detailed written statement describing the causes of the harmful contribution and the measures taken to prevent any future occurrence to the city prior to the date of any show cause or termination hearing.

Nothing in this chapter shall be interpreted as requiring a hearing prior to any emergency suspension under this section.

(Ord. 1240 § 53.60.060, passed 6-12-18)

53.635 TERMINATION OF DISCHARGE PERMIT (NONEMERGENCY).

Any user that violates the following conditions is subject to discharge permit termination:

(A) Violation of wastewater discharge permit conditions;

(B) Failure to accurately report the wastewater constituents and characteristics of its discharge;

(C) Failure to report significant changes in operations or wastewater volume, constituents and characteristics prior to discharge;

(D) Refusal of reasonable access to the user's premises for the purpose of inspection, monitoring or sampling; or

(E) Violation of the pretreatment standards in this title.

The user will be notified of the proposed termination of its discharge permit and be offered an opportunity to show cause why the proposed action should not be taken. Exercise of this option by the city shall not be a bar to, or a prerequisite for, taking any other action against the user.

(Ord. 1240 § 53.60.070, passed 6-12-18)

53.640 ADMINISTRATIVE PENALTIES.

(A) When the city finds that a user has violated or continues to violate any provision of Chapter 53, a wastewater discharge permit or order, or any other pretreatment standard or requirement, the city may assess a penalty against the user in an amount not to exceed $25,000 per violation per day.

The penalty may be assessed on a per violation, per day basis. In the case of monthly or other long-term average discharge limits, penalties shall be assessed for each day during the period of violation.

(B) Users desiring to dispute the penalty must file a written request for the city to reconsider the penalty along with full payment of the penalty amount within 30 days of being notified of the penalty. Where a request has merit, the Public Works Director shall convene a hearing on the matter within 60 days of receiving the request from the user. In the event the user's appeal is successful, the payment, together with interest, shall be returned to the user. The city may add the costs of preparing administrative enforcement actions, such as notices and orders, to the penalty.

(C) Issuance of an administrative penalty shall not be a bar against, or a prerequisite for, taking any other action against the user.

(Ord. 1240 § 53.60.080, passed 6-12-18)

53.645 INJUNCTIVE RELIEF.

When the city finds that a user has violated (or continues to violate) any provision of Chapter 53, a wastewater discharge permit, or order, or any other pretreatment standard or requirement, the city may petition the Circuit Court for Crook County through the City Attorney for the issuance of a temporary or permanent injunction, as appropriate, to restrain or compel the specific performance of the wastewater discharge permit, order, or other requirement imposed by this title on activities of the user. The city may also seek such other action as is appropriate for legal and/or equitable relief, including a requirement for the user to conduct environmental remediation. A petition for injunctive relief shall not be a bar against, or a prerequisite for, taking any other action against a user.

(Ord. 1240 § 53.60.090, passed 6-12-18)

53.650 JUDICIALLY IMPOSED CIVIL PENALTIES.

(A) Violation of any provision of Chapter 53, a wastewater discharge permit or order, or any other pretreatment standard or requirement is a civil infraction with a maximum civil penalty of $25,000 but

no less than $1,000 per violation, for each day the violation persists. The violation shall be enforced through the civil infraction procedures of this code. In a proceeding under this section, the city shall not be required to prove that the user has acted intentionally, knowingly or willfully. The city shall be required to prove that the violation occurred, but the user's mental state shall not be an element of proving the violation.

(B) The city may recover reasonable attorneys' fees, court costs, and other expenses associated with enforcement activities, including sampling and monitoring expenses, and the costs of any actual damage incurred by the city, in addition to the civil penalty.

(C) In determining the amount of the civil penalty, the court shall take into account all relevant circumstances, including, but not limited to, the extent of harm caused by the violation, the magnitude and duration, any economic benefit gained through the user's violation, corrective actions by the user, the compliance history of the user, and any other factor as justice requires.

(D) Initiation of a civil infraction proceeding shall not be a bar against, or a prerequisite for, taking any other action against a user.

(Ord. 1240 § 53.60.100, passed 6-12-18)

53.655 CRIMINAL PROSECUTION.

(A) Intentional, willful or knowing violation of any provision of Chapter 53, a wastewater discharge permit or order, or any other pretreatment standard or requirement is a Class A misdemeanor, punishable by a fine of not more than $25,000 per violation, per day, or imprisonment for not more than one year, or both.

(B) Intentional, willful or knowing introduction of any substance into the sewage system that causes personal injury or property damage is a Class A misdemeanor punishable by a maximum penalty of not more than $25,000 and/or one year in prison. This penalty shall be in addition to any other cause of action for personal injury or property damage available under state law. Nothing in this title precludes prosecution under other criminal statutes, including statutes pertaining to damage to public utilities or injury to property or persons.

(C) The knowing making of any false statements, representations, or certifications in any application, record, report, plan, or other documentation filed, or required to be maintained, pursuant to Chapter 53, wastewater discharge permit or order, or falsification, tampering with, or knowingly rendering inaccurate any monitoring device or method required under this title is a Class A misdemeanor punishable by a fine of not more than $25,000 per violation per day, or imprisonment for not more than one year, or both.

(D) If the user is a corporation, the penalty provisions of ORS 161.655 shall be applicable. An employee, officer or agent of a corporation that commits a misdemeanor under this chapter may be prosecuted in that person's individual capacity, and, upon conviction, be personally subject to the penalties provided under this section if the person committed the offense intentionally, knowingly or willfully, notwithstanding that the permit was issued in the name of a corporation.

(Ord. 1240 § 53.60.110, passed 6-12-18)

53.660 REMEDIES NONEXCLUSIVE.

The remedies provided by this chapter are not exclusive remedies. The city reserves the right to take any, all, or any combination of these actions against a noncompliant user. Enforcement in response to pretreatment violations will generally be in accordance with the city's enforcement response plan. However, the city reserves the right to take other action against any user when the circumstances warrant. Further, the city is empowered to take more than one enforcement action against any noncompliant user. These actions may be taken concurrently.

(Ord. 1240 § 53.60.120, passed 6-12-18)

53.665 PERFORMANCE BONDS.

The city may decline to issue or reissue a wastewater discharge permit to any user that has failed to comply with any provision of this title, a wastewater discharge permit or order, or any other pretreatment standard or requirement unless the user first files a satisfactory bond, payable to the city, in a sum not to exceed a value determined by the city to be necessary to achieve consistent compliance.

(Ord. 1240 § 53.60.130, passed 6-12-18)

53.670 LIABILITY INSURANCE.

The city may decline to issue or reissue a wastewater discharge permit to any user that has failed to comply with any provision of this title, a wastewater discharge permit or order, or any other pretreatment standard or requirement, unless the user first submits proof that it has obtained insurance or other financial assurances satisfactory to the city, sufficient to restore or repair damage to the sewage system that may be caused by its discharge.

(Ord. 1240 § 53.60.140, passed 6-12-18)

53.675 WATER SUPPLY DISCONTINUANCE.

The city may discontinue water service to a user for violation of any provision of this title, a wastewater discharge permit or order, or any other pretreatment standard or requirement. Service will only recommence at the user's expense, after it has satisfactorily demonstrated its ability to comply. The user shall be required to reimburse the city for expense incurred for disconnecting service. Any person, including the user, may petition the city to reconsider the terms of water supply severance within 30 days of termination or notice of termination.

(Ord. 1240 § 53.60.150, passed 6-12-18)

53.680 ADMINISTRATIVE REVIEW OF PERMIT.

A wastewater discharge permit or notice of denial of the permit shall contain notice of the petition for review procedures that a person may follow to obtain administrative review of the permit decision.

(A) Failure to submit a timely petition for review shall be deemed to be a waiver of the administrative appeal.

(B) A petition for review shall be in writing and filed with the City Manager's office. In the petition, the appealing party must specify the name and address of the person filing the petition for review, and the reasons for this objection.

(C) The City Manager shall conduct a hearing to determine the merits of the petition. Prior to the hearing, the person conducting the hearing shall notify the petitioner of the time and place of the hearing, and that the petitioner will have the opportunity to present evidence and make statements in support of the appeal. The person conducting the hearing shall have the sole discretion to determine the amount of time allowed for the appeal hearing. The person conducting the hearing may rely on any relevant evidence provided by the city staff or obtained by any other reasonable means. The decision on the hearing shall be in writing. If the city fails to make a determination on the petition within 30 days, the petition shall be deemed to be denied, and the permit denial or permit conditions appealed from shall be the final decision of the city.

(D) The decision on the petition for review is the final decision of the city. The final decision may only be challenged under the writ of review provisions of Oregon law.

(Ord. 1240 § 53.60.160, passed 6-12-18)

53.685 PUBLIC NUISANCES.

A violation of any provision of this title, a wastewater discharge permit, or order, or any other pretreatment standard or requirement, is a public nuisance and may be corrected or abated as provided by this code.

(Ord. 1240 § 53.60.170, passed 6-12-18)

53.690 INFORMANTS.

The city may pay up to 100% of any collected fine or penalty imposed by any court, to a maximum amount of $1,000, to an informant, subject to reduction by the amount of any assessments required by state law.

(Ord. 1240 § 53.60.180, passed 6-12-18)

53.695 CONTRACTOR LISTING.

Users that have not achieved compliance with applicable pretreatment standards and requirements are not eligible to enter into contracts for the sale of goods or services to the city. Existing contracts for the sale of goods or services to the city held by a user found to be in significant noncompliance with pretreatment standards or requirements may be terminated at the discretion of the city.

(Ord. 1240 § 53.60.190, passed 6-12-18)

53.700 AFFIRMATIVE DEFENSE OF UPSET.

(A) For the purposes of this section, *UPSET* means an exceptional incident in which there is unintentional and temporary noncompliance with the applicable pretreatment standards because of factors beyond the reasonable control of the user. An upset does not include noncompliance to the

extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(B) An upset shall constitute an affirmative defense to an action brought under this chapter for noncompliance with applicable pretreatment standards if the requirements of subsection (C) of this section are met. The affirmative defense of upset shall not be applicable to enforcement actions under any provision of this title other than those provided in this chapter, although facts indicating that an upset occurred may be considered in determining the appropriate remedy under enforcement proceedings other than those provided in this chapter.

(C) A user who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence, that:

(1) An upset occurred and the user can identify the cause(s) of the upset;

(2) The facility was at the time operating in a prudent and workman-like manner and in compliance with applicable operation and maintenance procedures; and

(3) The user has submitted the following information to the city within 24 hours of becoming aware of the upset. If this information is provided orally, a written submission must be provided within five days.

(a) A description of the indirect discharge and cause of noncompliance;

(b) The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and

(c) Steps being taken and/or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(D) In any enforcement proceeding under this title, the user seeking to establish the occurrence of an upset shall have the burden of proof.

(E) Users will have the opportunity for a judicial determination on any claim of upset only in an enforcement action brought for noncompliance with applicable pretreatment standards under this title.

(F) Users shall control production of all discharges to the extent necessary to maintain compliance with applicable pretreatment standards upon reduction, loss, or failure of their treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

(Ord. 1240 § 53.60.200, passed 6-12-18)

53.705 AFFIRMATIVE DEFENSE - LACK OF KNOWLEDGE.

A user shall have an affirmative defense to an enforcement action brought against it for noncompliance with the prohibited discharge standards if it can provide that it did not know, or have reason to know, that its discharge, alone or in conjunction with discharges from other sources, would

cause pass through or interference and that either: (A) a local limit exists for each pollutant discharged and the user was in compliance with each limit directly prior to, and during, the pass through or interference; or (B) no local limit exists, but the discharge did not change substantially in nature or constituent from the user's prior discharge when the city was regularly in compliance with its WPCF permit, and in the case of interference, was in compliance with applicable sludge use or disposal requirements.

(Ord. 1240 § 53.60.210, passed 6-12-18)

53.710 AFFIRMATIVE DEFENSE - BYPASS.

(A) For the purposes of this section:

(1) *BYPASS* means the intentional diversion of wastestreams from any portion of a user's treatment facility.

(2) *SEVERE PROPERTY DAMAGE* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. "Severe property damage" does not mean economic loss caused by delays in production.

(B) A user may allow any bypass to occur which does not cause applicable pretreatment standards or requirements to be violated, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of subsections (C) and (D) of this section.

(C) Notice of Bypass.

(1) If a user knows in advance of the need for a bypass, it shall submit prior notice to the city at least ten days before the date of the bypass, if possible.

(2) A user shall submit oral notice to the city of an unanticipated bypass that exceeds applicable pretreatment standards within 24 hours from the time it becomes aware of the bypass. A written submission shall also be provided within five days of the time the user becomes aware of the bypass. The written submission shall contain a description of the bypass and its cause; the duration of the bypass, including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the bypass. The city may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

(D) *Bypass conditions.*

(1) Bypass is prohibited and the city may take an enforcement action against a user for a bypass unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(c) The user submitted notices as required under subsection (C) of this section.

(2) The city may approve an anticipated bypass, after considering its adverse effects, if the city determines that it will meet the three conditions listed in subsection (D)(1) of this section.

(Ord. 1240 § 53.60.220, passed 6-12-18)

FEES

53.805 FEES.

All persons receiving sewer services shall pay the fees established by council resolution. Fees shall be set at an amount to cover the city's costs relating to the service for which the fee is paid. Fees may include:

(A) Fees for wastewater services. The fees for wastewater services may include a component or additional charge based on the strength of the discharge;

(B) Fees for wastewater discharge permit applications, including the cost of processing such applications;

(C) Fees for monitoring, inspection, and surveillance procedures including the cost of collecting and analyzing a user's discharge, and reviewing monitoring reports submitted by users;

(D) Fees for reviewing and responding to accidental discharge procedures and construction;

(E) Fees for filing appeals; and

(F) Other fees as the city may deem necessary to carry out the requirements of this title. These fees relate solely to the matters covered by this title and are separate from all other fees, fines, and penalties chargeable by the city.

(Ord. 1240 § 53.70.010, passed 6-12-18)

Chapter 54
SEWER EXTRA STRENGTH CHARGE

Sections:

54.010 Imposition of Sewer Extra Strength Charge.

All nonresidential sewer customers are subject to evaluation to determine if they are required to pay a sewer extra strength charge (ESC). Nonresidential sewer customers whose wastewater discharges exceed or have the potential to exceed residential levels of biochemical oxygen demand (BOD) or total suspended solids (TSS) shall pay an ESC in an amount established by Council resolution, consistent with the provisions of this chapter. Refer to Ordinance 980 for standard Sewer System Users Charges.

54.020 Purpose.

The purpose of the ESC is to recover the cost of treating extra strength wastewater discharged into the City of Prineville sewer system. Extra strength discharges have a concentration of BOD or TSS higher than the concentration assumed as part of the city's base sewer user charge. Additional charges to ratepayers for extra strength wastewater are necessary for rate equity and to prevent the high cost of treatment of extra strength wastewater from being passed on to all other ratepayers.

54.030 Rate Types.

Ratepayers who discharge extra strength wastewater shall pay an ESC using either the industry average rate or the monitored rate.

A. Industry Average Rate.

1. All nonresidential customers who are not in the monitored program whose wastewater discharges exceed 400 mg/L for BOD or TSS shall pay the industry average rate.

2. The ESC industry average rate shall be established by Council resolution setting rates based on the following Extra Strength Charge Equation:

$$ESC = \frac{Base + \frac{R * (Q - 500)}{100}}{3} * \left[\frac{BOD}{LL_{BOD}} + \frac{TSS}{LL_{TSS}} + 1\right]$$

Where:

R = Excess flow charge rate as established by Council resolution. If *Q* is found to be less than 500, then zero (0) shall be used in place of *R*.
Base = Monthly flat rate established by Council resolution
BOD = User's monthly average biochemical oxygen demand (BOD) in mg/L. If User's average BOD is less than the local limit, the local limit shall be used in place of *BOD*.
LL_{BOD} = The BOD local limit as established in § 53.140
TSS = User's monthly average total suspended solids (TSS) in mg/L. If User's average TSS is less than the local limit, the local limit for TSS shall be used in place of *TSS*.
LL_{TSS} = The TSS local limit as established in § 53.140
Q = Total monthly wastewater discharge from User in ft^3. If User's discharge is not metered, total water usage (in ft^3) shall be used in place of *Q*.

Note: Regardless of the Extra Strength Charge Equation results, the minimum sewer charge shall be no less than the monthly flat rate established by Council resolution unless otherwise approved by the Public Works Director.

The Public Works Director shall maintain and may amend the Extra Strength Charge Equation constants.

3. The ESC sewer volume charge shall be based on the winter quarter average water consumption of the customer, and the amount shall be adjusted annually in the spring based on the most recent winter quarter average data. For new customers, the volume charge shall be based on a default average consumption value established in the city's fee resolution. The rates in the ESC industry average rate may include a phased rate increase, with initial rates that do not cover all extra strength costs, over a period to be established by City Council resolution.

4. Any changes in use of a nonresidential property or in processes that may affect the strength of wastewater discharges shall be reported to the city's Utility Billing Department by the customer.

5. When a single sewer account includes discharges from multiple sources, the account holder shall assign a proportionate share to each use, subject to city review and approval. The sewer volume charge will be applied by the city taking into account the proportionate use provided by the account holder. In the event that the account holder does not provide the city with an assignment of proportionate use, the total volume for the account will be assigned the highest strength among the sources of discharge on the account.

6. Any customer may request reclassification under § 54.50 at the time the classification is initially assigned, after any change in classification, or after any change in use or practice at the property.

B. Monitored Rate.

1. Nonresidential sewer customers may pay the ESC based on their sewer discharge if they are eligible for and participate in the monitored rate program as established in this subsection (B).

2. Customers are eligible to participate in the monitored rate program if there is a secure and accessible sampling location for the customer's discharge that allows representative samples to be taken; and

3. Customers with an average peak BOD or TSS greater than 1,000 mg/L must participate in the monitored rate program.

4. Any nonresidential customer may apply to be in the monitored rate program. The application shall be accompanied by an application fee in an amount established in the city's fee resolution.

5. An individual monitored program for each customer shall be established and agreed to in writing by the applicant for inclusion in the monitoring program. Each monitoring program shall be consistent with the city's sampling standards and include:

a. A description of the sampling location.

b. A sampling schedule for the samples to be taken by the customer.

c. The ability for the city to access the sampling site and take samples.

d. A requirement that the customer samples be analyzed for BOD and TSS by an independent laboratory approved by the city.

e. An agreement on when the data will be presented to the city for monthly billing purposes.

6. On determination of the actual strength of the discharge as monitored, the customer shall pay the rate based on monitored concentration and/or flow as established by the Extra Strength Charge Equation, based on a 12-month rolling average basis.

7. The application for participation in the monitoring program shall include a consent to the city's inspection of the property where the sewage discharge occurs to take samples and to inspect for compliance with the monitoring program.

54.040 New Development and Redevelopment.

Any new development that will likely host a business that has the potential to discharge wastewater at strengths above residential levels shall install a sampling manhole at time of development or redevelopment. Sampling manholes shall comply with the city's standards and specifications in effect at the time of installation.

54.050 Reclassification Requests.

A. Application. Any customer in an industry that is required to pay a sewer ESC may request reclassification at any time by submitting a written application on a city-approved form and payment of a fee in an amount to be established in the city's fee resolution.

B. Standard. The city shall reclassify the applicant's discharge if the applicant establishes by a preponderance of the evidence that:

1. The applicant has in place a process, program and/or facilities that reduce the discharge strength to a lower category than would otherwise be applicable.

2. Reliable published data indicates that the expected discharge strength of the industrial use type would place the use in a lower category.

C. Effect of Reclassification. A reclassification shall be effective for a maximum of 12 months. Reclassifications may be extended for an additional 12 months using the same process and standards applicable to an original reclassification.

D. Conditions. This city may impose conditions on a reclassification and may terminate a reclassification if the discharge no longer meets the standards established in subsection (B) of this section.

54.060 Appeals.

A. An applicant for reclassification may appeal a whole or partial denial of the application for reclassification.

B. Any applicant for participation in the monitoring program may appeal denial of participation in the monitoring program or any component of the monitoring program when finally approved.

C. All appeals shall be filed within 10 business days of the date of the decision being challenged. The appeal shall be submitted to the city recorder and shall be accompanied by payment of the appeal fee established in the city's fee resolution.

D. Within 45 days of filing the appeal, the appellant shall provide written justification, supported by evidence, in support of the appeal. The city shall provide a written response within 60 days of receiving the written materials from the appellant. The city and the appellant may agree in writing that the appeal will be determined on the written submissions.

E. The appeal shall be submitted to the city manager, who will hold an in-person hearing unless the parties have agreed that the appeal will be determined on written submissions. The City Manager may delegate responsibilities under this section to the Assistant City Manager or the Prineville Business Advocate.

F. The decision on appeal shall be reduced to writing and issued within 15 days of (1) the date of hearing, or (2) the date agreed upon in the written appeal submissions and determinations as referenced in Subsection D of this section.

G. The written decision of the city manager or designee shall be the city's final decision and reviewable only by write of review.

H. If a final decision is issued denying the reclassification, the appellant may not seek reclassification or a change to the monitored rate program unless the use is discontinued or new facilities are put in place that would change the strength category.

54.070 Enforcement.

A. A customer's failure to comply with any applicable provision of this chapter is a civil infraction with a maximum civil penalty of $25,000.

B. Knowingly submitting false information on any application provided for in this chapter or knowingly submitting false or erroneous information in connection with any monitoring program, or taking action that would lead to inaccurate or unrepresentative sampling, is a civil infraction with a maximum civil penalty of $25,000.

STAFF REPORT

MEETING DATE:	9/27/2022	**PREPARED BY:**	Eric Klann
SECTION:	Council Business	**DEPARTMENT:**	Public Works
CITY GOAL(S):	Fiscal Responsibility, Position the City for the future		
SUBJECT:	**Intent to award Brown and Caldwell design, permitting, and services during construction for the Prineville Water Reuse Project**		

REASON FOR CONSIDERATION: Intent to award to Brown and Caldwell for Water Reuse Project design, permitting, and services during construction.

BACKGROUND: The City requested proposals for design, permitting, and construction services for the Water Reuse Project. Proposals were due August 31, 2022. There were numerous inquiries for the RFP but only one proposal was submitted by Brown and Caldwell. A team of four, comprised of Eric Klann, Casey Kaiser, Jason Wood, and Caroline Ervin reviewed and scored the proposal based on the following criteria:

Project approach- 30%
Project personnel's directly relevant experience on projects with similar issues – 30%
Available staff to meet the design schedule- 20%
Record of performance- 20%

The proposal received high scores from the scoring team. Brown and Caldwell has demonstrated, through the proposal, the necessary experience, competency, and availability to meet project demands.

FISCAL IMPACT:

There will not be a financial impact to the City. Project costs will be paid for by the companies intending to utilize the reclaimed water. This intent to award is for all work associated with design, permitting, and construction services, however, the first deliverable is a Basis of Design (BOD) report which will not exceed $75,000. The cost for this will be split 50% / 50% between Apple and Meta.

RECOMMENDATION: Staff recommend council award Brown and Caldwell the permitting, design, and construction services described.

RELATED DOCUMENT(S): Attached are the request for proposal and the Brown and Caldwell submitted proposal.

Request for Proposals – Design, Permitting, and Services During Construction – Prineville Water Reuse

July 2022

1.0 Confidentiality; Industry Confidential Information

The selected bidder will be subject to the terms of a Non-Disclosure Agreements (NDA), including any employees, team member firms, and subcontractors.

2.0 Introduction

The City of Prineville, Oregon (City) seeks to implement a municipal reclaimed water project to add advanced treatment to the existing City wastewater treatment plant (WWTP) and facilitate reuse of the reclaimed water for industrial cooling.

The City is looking to partner with a qualified Engineering service firm (the Consultant) to provide design, permitting, and engineering services during construction for the Water Reclamation Facility (WRF).

3.0 Project Objectives

- Design an efficient and reliable wastewater treatment system that generates treated water suitable for reuse in evaporative industrial cooling.
- Design the system with adequate turndown ability to meet the variability in flow demand by the Industries over the cooling season (roughly April through September), considering water storage infrastructure located at the industry sites that can be used for equalization of flows.

4.0 Background

The City is home to several Industries that currently utilize potable water for evaporative cooling. Due to ongoing water scarcity in the region, the industries and the City previously collaborated on an innovative aquifer storage and recovery program to meet peak summer cooling needs. Following on this project there is a desire, both on the part of the industries and that of the City, to limit the use of potable water in meeting future demand for industrial cooling and to instead utilize reclaimed municipal effluent.

The City's WWTP currently consists of primary screening, a series of facultative treatment lagoons, and disinfection in chlorine contact basins. Effluent from the chlorine contact basins is conveyed to two effluent storage ponds, and from there is reused for agricultural irrigation of nearby pastures, irrigation of the City's golf course, and further treatment in the City's award-winning 120-acre Crooked River Wetlands Complex (Crooked River Wetlands Complex | City of Prineville Oregon). The City also utilizes a direct river discharge during winter months.

This project seeks to treat a portion of the City's WWTP effluent from one of the effluent storage ponds, on a seasonal basis, for use as industrial cooling makeup water. The WRF will be located on City property at the WWTP and will be owned and operated by the City.

The City intends to execute this project following a design-bid-build approach.

4.0 Scope of Work

This project includes the design, permitting, and services during construction of the WRF and associated infrastructure, including a pump station and extension of the reclaimed water distribution system to deliver reclaimed water to the Industries. Most of the distribution system piping has already been installed as part of a previous project.

The project will comprise the following tasks:

1. Preliminary Design
2. Schematic Design (30%)
3. Detailed Design (60% and 90%)
4. Permitting
5. Construction Phase Design (Issue for Bid and Issue for Construction Documentation)
6. Procurement Support
7. Engineering Services During Construction
8. Startup and Commissioning
9. Project Closeout
10. Project Management

Scope for each task is described in the following sections.

4.1 Task 1 – Preliminary Design

In this phase, the Consultant will evaluate treatment alternatives, and working with the owner and the Industries, select a preferred treatment train, and document the Basis of Design (BOD) in a BOD Report. Key elements to be documented in the BOD report are influent water quality to the WRF, target water quality for the finished water, design and average flow rates for the treatment system, and primary system elements including treatment units, and required pump station(s) and distribution system connections/extensions to deliver the reclaimed water. The following information is available at this time to inform the BOD:

- WWTP effluent pond water quality data (Attachment A)
- Preliminary design flow rate for the system of 2 million gallons per day (MGD). The Consultant will collaborate with the City's Engineer (Anderson Perry & Associates) who will have responsibility for the overall water balance for the City's wastewater system and will confirm the flow rate of wastewater available for treatment in the WRF during the cooling season.

Additional information needed to complete the BOD will be shared with the Consultant following award. The treatment alternatives and projected water qualities will first be documented in a technical

memorandum (TM) for review by the City and the Industries. Upon review of this TM, the City, in collaboration with the Industries, will select one treatment train to move forward into design. The Alternatives TM will then be incorporated into the BOD report.

The BOD Report shall include:

1. Layout drawing depicting all new facilities
2. Preliminary equipment sizing
3. Process flow diagram (PFD) with mass and flow balances for key constituents
4. Narrative process description
5. Class 5 construction cost estimate as defined by the Association for the Advancement of Cost Engineering (AACE) with an accuracy range of +100%/-50%
6. Identification of project risks for tracking and mitigation throughout the project

4.2 Task 2 – Schematic Design (30%)

Completion of this phase of work shall represent approximately 30% design completion. Geotechnical and survey work needed to support design will be completed during this phase.

Deliverables will include:

- Schematic Design report with subsections for each design discipline
- Updated equipment sizing
- Updated PFD with mass and flow balances
- Process control narratives
- Preliminary process and instrumentation diagrams (P&IDs)
- Preliminary one line diagram
- Preliminary yard piping
- Class 3 construction cost estimate with an accuracy range of -20% to +35%
- List of specifications anticipated to be used on the project
- Updated drawing list for forthcoming design packages

The Schematic Design package will be submitted to the City for review and comment and changes will be incorporated into the next design stage.

4.3 Task 3 – Design Development (60%)

P&IDs, structural design, equipment sizing and layout, building layout and architectural requirements, major plant piping, electrical requirements, and site plans will be finalized during this phase to allow final detailing in the following phase.

The first draft of specifications and the front-end bidding documents and a Class 2 construction cost estimate with an accuracy range of -10% to +20% will also be prepared in this phase.

4.4 Task 4 – Permitting

This task involves the following activities:

- Perform an initial review with the local authorities having jurisdiction (AHJs) over the project, which may include the City, Crook County (the County), the State of Oregon Department of Environmental Quality (ODEQ), and perhaps other AHJs as applicable. Based on this initial review, develop a permitting plan and initiate contact with all AHJs to review requirements and permitting timelines.
- As the design progresses, meet with the AHJs at each stage gate (i.e., 30%, 60%, 90%, 100%) to confirm alignment with project requirements and necessary documentation for permit applications and review.
- Prepare and submit permit applications on behalf of the City at the earliest possible design stage gate accepted by the AHJ. Any permit fees required will be the responsibility of the City to pay directly.

4.5 Task 5 – Construction Documents

For the Final Design, all the design drawings and specifications will be completed. Review and approval of all submittals from the building and equipment package suppliers is anticipated to occur early during the Final Design phase. This schedule will allow the Final Design to be fully coordinated with the building and equipment package requirements. The draft final (95%) documents will be submitted to the City for review and comment.

A Class 1 construction cost estimate with an accuracy range of -5% to +10% will be prepared using the 95% documents.

After discussing and resolving comments received from the City on the 95% design, the final, 100% bid-ready ("Issue for Bid") documents will be prepared.

After the bidding process is complete, any necessary changes will be made to the design package and an "Issue for Construction" set of documents will be prepared and submitted.

4.6 Task 6 – Procurement Support

The scope for this task is to provide technical support to the City during procurement of equipment and of the General Contractor (Contractor). The Consultant will prepare bid documents, respond to requests for information from the bidders, evaluate bids and provide recommendations to the City on procurement decisions.

All costs for procurement of equipment and services will be paid directly by the City. Procurement support will be needed for a pre-engineered metal building to house the WRF, up to two major pieces of treatment equipment, and for procurement of the general contractor.

4.7 Task 7 – Engineering Services During Construction

Services during construction (SDC) scope will include the following:

1. Assist the City with development of the document control system that will be used for submittal and requests-for-information (RFI). All submittals and RFIs will be stored on the system and will allow the Contractor, City, and Consultant to electronically access the documents.
2. Review and provide responses to Contractor's submittals.

3. Review and provide responses to RFIs.
4. Provide a resident engineer that will be present at the construction site for weekly meetings and to provide assistance to the City's construction manager regarding Contractor's conformance to the construction documents and other technical questions. The resident engineer will be available on an on-call basis, up to two days per week during construction. The resident engineer will also manage the Consultant's submittal and RFI review process and provide coordination between the construction manager and the Consultant's engineering team.
5. Assist the City's CM with review of change order requests. These reviews will be limited to technical review to assess potential impact to the system design and/or performance.
6. Develop control system software for the PLC and the human-machine-interface (HMI). This software will be coordinated with PLCs and software developed by the packaged treatment system suppliers. Graphical screens and control system functioning will be reviewed with the City at two stages of development (approximately 60% and 90% complete).

4.8 Task 8 – Startup and Commissioning

The Contractor will be responsible for mechanical completion of the system. The Consultant will provide a team of up to three people onsite for a period of two weeks during startup and commissioning of the system. During this time, the consultant will collect up to 3 rounds of water quality samples to confirm that the system is producing water that meets the target water quality.

4.9 Task 9 – Project Closeout

Project closeout activities will include:

- Transfer of all project files to the City.
- Prepare record drawings from the as-built mark-ups prepared by the construction contractor.
- Develop an operations and maintenance (O&M) manual for the new system (Draft and Final).

4.10 Task 10 – Project Management

Activities conducted under this task will include:

- Participation in a project kickoff meeting and in weekly meetings with the City and other project stakeholders (i.e., Anderson Parry, the general contractor) throughout the duration of the project.
- Preparation and maintenance of a Project Management Plan
- Development and maintenance of a project risk register.
- Maintain a master schedule for design and construction.
- Preparation of monthly status reports and invoices

6.0 RFP Deliverables

The following are requested to be included in proposals in response to this RFP:

- Project approach
- Proposed team and staffing plan
- Project schedule
- Relevant project experience and resumes of key team members (limited to 2 pages each)

The proposals shall be limited to twelve 8 ½ x 11 single-sided pages, including cover letter but excluding resumes, and a maximum of three 11 x 17 pages to show relevant project descriptions. For information or questions about the project, contact the City Engineer listed below. Submit your proposal via electronic format before **4:30 pm pacific time, August 31, 2022** to:

Eric Klann, City Engineer
Email: eklann@cityofprineville.com
Phone: 541.447.2357, ext. 1127

6.0 Consultant Selection and Evaluation Process

City staff will evaluate the consultants' proposals based on the following criteria:

1. Project approach (30%)
2. Project personnel's directly-relevant experience on projects with similar issues (municipal reuse, industrial cooling, etc.) (30%)
3. Available staff to meet the design schedule (20%)
4. Record of performance (based on information from references regarding meeting budgets and schedules, completeness of design documents, records of change orders, etc.) (20%)

City staff will work with the most qualified consultant to prepare an Agreement for Consulting Services, including a Scope of Work and estimated budget for the Project.

7.0 RFP Schedule

The following is an estimated timeline for procurement:

RFP Issued to bidders	July 27, 2022
Deadline for Requests for Information	August 24, 2022
Proposals Due	August 31, 2022
Interviews (in-person)	September 7, 2022
Award	September 20, 2022

The City may expedite the internal review, contract negotiations, and contract approval at its discretion based upon staff capacity, number of proposals received, and efficiency of contract negotiations.

Brown AND Caldwell

Prineville Water Reuse

Design, Permitting, and Services During Construction

CITY OF PRINEVILLE OREGON

August 31, 2022

LEVERAGE BC's expertise

MAINTAIN Communication

DEVELOP a project that meets your needs

6500 S Macadam Avenue, Suite 200
Portland, OR 97239-3552
T: 503.244.7005
www.brownandcaldwell.com

August 31, 2022

Eric Klann, City Engineer
City of Prineville

Subject: Proposal for Design, Permitting, and Services During Construction—Prineville Water Reuse

Dear Eric:

We have assembled a strong team to support the City of Prineville's (City) Water Reuse project with extensive experience working on Pacific Northwest water reuse projects where municipal wastewater reuse was for industrial users. The Brown and Caldwell (BC) team's combined experience with advanced water treatment design, water reuse, and industrial evaporative cooling systems will provide the City with the resources needed to drive the project forward and develop a treatment concept that meets the needs of all stakeholders.

We have a proven record of performance developing similar water reuse projects and implementing them in line with budget, schedule, and multi-stakeholder quality expectations, including my work for the City and other Prineville project stakeholders. Our approach is based on the following:

- Leverage BC's expertise at the intersection of industrial and municipal water systems
- Maintain consistent and effective communication with stakeholders
- Develop a project that meets the needs of the City, the Industries, and the community

We appreciate the opportunity to partner with the City on this important project that will support the City's economic development and further conserve the precious water resources of the Crooked River watershed. We have the capacity and readiness to begin the project on your schedule, following award in September. Should you have any questions or need any further information, please contact me directly at 425.698.9394 or rmaco@brwncald.com.

Very truly yours,

Brown and Caldwell

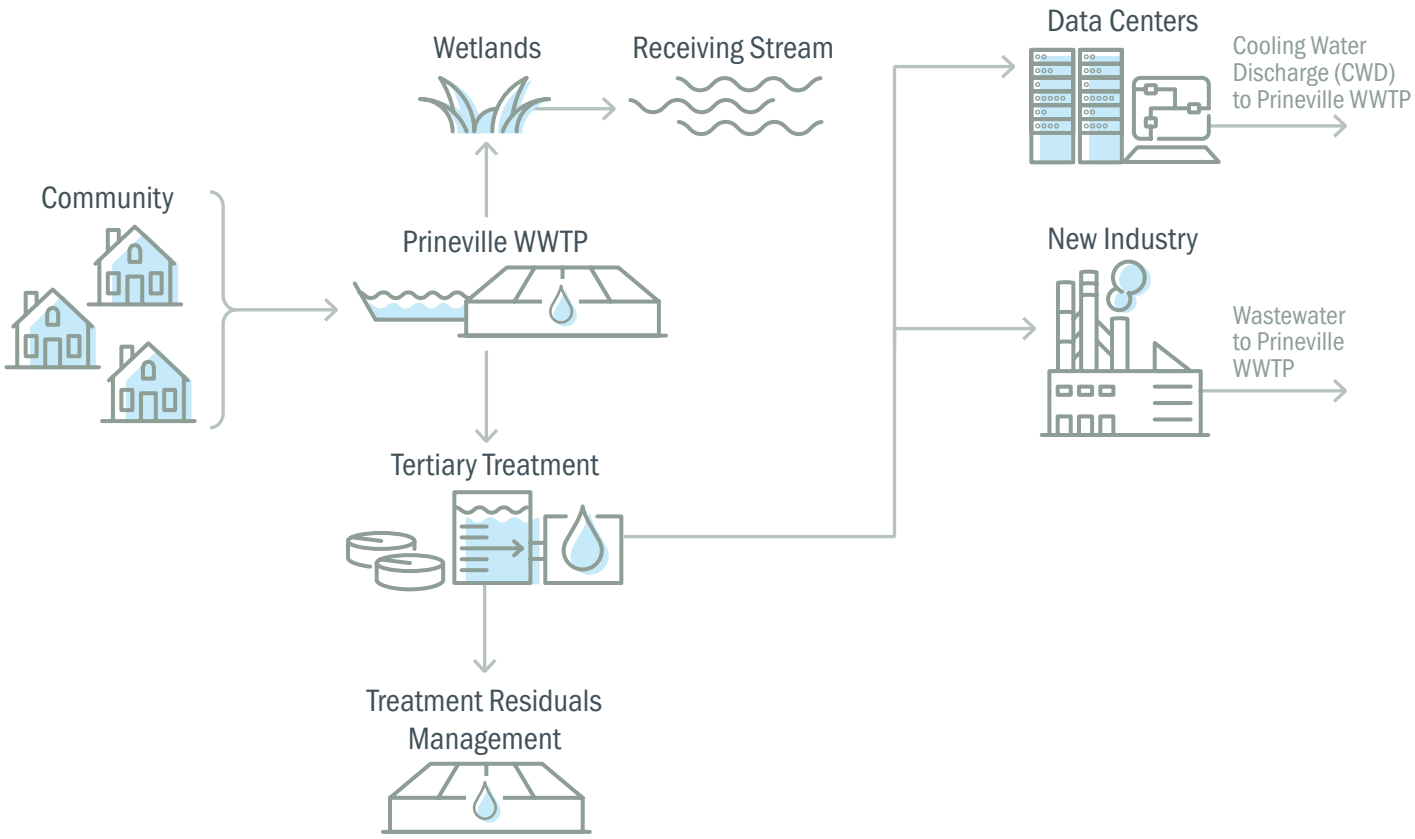
Rebecca Maco

Rebecca Maco, PE, PMP
Project Manager

BC understands large-scale data center cooling water quality requirements and the unique challenges of the City's Water Reuse Project.

Project Understanding

Based on Project Manager Rebecca Maco's long-standing relationships with the City and nearby data center companies, past experience supporting the City's water reuse initiatives, and domain expertise on cooling system water quality, BC is best positioned to deliver this critical project for the benefit of stakeholders and the community. Our project understanding is illustrated in the figure below. This project would add tertiary treatment to the City's existing wastewater treatment plant (WWTP), allowing for reuse of a portion of the City's wastewater as makeup water for industrial cooling and reducing demand on the City's potable water supplies. The primary project objectives are to design a system that efficiently and reliably generates water of suitable quality for industrial cooling and has adequate turndown ability to accommodate the variability in cooling water demand during the cooling season. The BC team will leverage our experience and expertise on similar projects to design a system that achieves these objectives.



BC's strong understanding of data center cooling water quality requirements and the City's existing WWTP will allow us to develop a tertiary treatment process that will meet both the City's needs and those of the data centers.

LEVERAGE BC's expertise at the intersection of industrial and municipal water systems in the Pacific Northwest

Our design team has been carefully selected to leverage BC's experience in designing tertiary treatment systems for industrial and municipal reuse. We understand the complex permitting challenges involved with a project of this scale in Oregon and our local permitting experts are prepared to help navigate those challenges on your behalf. We will act as your partner to guide the project, refine its definition, manage risks, support procurement and drive implementation.

MAINTAIN consistent and effective communication with stakeholders

Clear and proactive communication with the City and project stakeholders will be critical to maintain alignment of all parties and drive the project forward. BC's Project Manager, Rebecca Maco, brings experience directly in Prineville and with other clients throughout the Northwest. She is a project manager that you can trust to guide a successful project through to completion.

DEVELOP a project that meets the needs of both the City, the industries, and the community

BC understands the City's desire for a simple and elegant design for the water reuse system that will cost-effectively produce the required water quality and be easy to operate and maintain. We will leverage our knowledge of data center cooling water quality requirements to develop a range of options with varying complexity, cost, and treatment capability to allow for informed decision making by the City and project stakeholders.

Project Technical Approach

Preliminary and Schematic Design

BC's approach to the project will be to confirm project definition and quickly develop and evaluate alternatives. This step includes confirmation that the reuse water will be used for direct or indirect cooling. Our design and permitting teams will work in lockstep throughout the project, developing the needed documentation for permit applications, tracking risks, reviews, and approvals. Our project management strategy will integrate these efforts through consistent and effective communication. BC will evaluate water quality and quantity of the City's WWTP effluent and will work with the City's Engineer (Anderson Perry & Associates) to determine the flow of wastewater available for advanced treatment and reuse while maintaining sufficient flow to the City's Crooked River Wetlands Complex (Complex) to sustain all the benefits that the Complex brings to the community and to the ecosystem.

Water quality directly impacts operational parameters of the cooling system such as number of cycles of concentration (CoCs), which in turn impacts the water quantity required (poorer water quality = lower CoCs = higher water demand). For example, the addition of softening or hardness removal may allow the industries to operate at higher CoCs. The additional capital and operating cost will need to be balanced with the reduced water demands. Further, water quality requirements for direct evaporative systems are more stringent than those for indirect evaporative systems and thus will require more complex and more costly treatment. However, indirect evaporative systems also use substantially more water so that must be weighed as well. All of these factors must be considered in determining the selected process that best balances the needs of both the City and the industries. BC will facilitate discussion with the City and industries to explain the tradeoffs and guide informed decision making.

The treatment alternatives will include:

- Membrane filtration
- Membrane filtration with biological pre-treatment
- Membrane filtration with softening pre-treatment

Additional technologies may also be considered following project kickoff and consultation with the City and project stakeholders.

Disposal of treatment residuals, such as reverse osmosis (RO) reject and clean-in-place (CIP) wastewater, is a common challenge and will be an important component of the City's Water Reuse Project. We will identify and evaluate site-specific options for residuals management and provide a recommendation for implementation.

Detailed Design

BC will execute the design of the water reuse infrastructure under direct contract with the City following a traditional design-bid-build approach. The City will retain a general contractor (GC) for construction management and procurement of equipment and trade subcontracts based on BC-issued drawings and specifications. BC will provide services during construction (SDC) to support execution of design intent. We also propose that BC participate in reviewing the GC qualifications prior to selection by the City.

The key elements of our proposed project approach include preliminary design, schematic design (30%), detailed design (60% and 90%), permitting, construction documentation (95% and 100%), procurement support, engineering services during construction, startup and commissioning, and project closeout, including as-built drawings and operations and maintenance (O&M) manuals for the new system. In addition, our approach includes additional services in support of system construction, including water quality sampling, geotechnical investigation, topographical surveying, and utility locating.

We will use our experience with complex, multi-stakeholder engagement to initiate early and sustained communication with project stakeholders and regulatory agencies. In our experience, it is this early initiation of open communication channels and continued active engagement with regulators that is most impactful in expediting permitting timelines. Following project kick-off, immediate tasks will include establishing contact with regulatory individuals responsible for issuing each permit to fully understand the requirements. We will perform site visits will as needed to facilitate regulatory approvals.

Procurement, Engineering Services During Construction, Startup, and Closeout

During procurement, construction, and startup and commissioning, BC will be your partner in making sure that the constructed system meets the needs of the City and project stakeholders. Key elements of our approach during this phase of the project include:

- **Requests for Information (RFI) and Change Orders:** Our use of detailed design procedures will increase the completeness of contract documents and minimize the need for excessive requests for additional information and change orders.
- **Communication:** BC routinely uses various software frameworks for documentation of project correspondence. We actively participate in construction progress meetings and facilitate coordination with all parties.
- **Record Drawings:** Our team will assist with monthly reviews of the contractor's efforts to maintain information required for prompt preparation of record drawings.
- **Protection of Existing Facilities:** We will clearly identify construction requirements for protecting existing facilities in bid documents.
- **Facility Tie-in Plans:** We will discuss construction sequence and tie-in plans early in the design process. Contract documents will outline specific details of facilities to be maintained in operation and that are planned for tie-in.
- **Control Strategies:** Narrative descriptions of the control logic are prepared during design. Early development of these work products provides adequate time for discussion with and review by the City.
- **Commissioning Plan:** Often times the startup, testing, and commissioning of new facilities does not get sufficient and timely attention by the general contractor. BC assists by preparing guidance documents for these activities prior to the mid-point of construction.
- **O&M Manual:** Early development of O&M manuals is not only an Oregon Department of Environmental Quality requirement but it is a best practice in preparation for a successful commissioning period followed by day-to-day operation of facilities.
- **Water Quality Confirmation Testing:** The BC team will conduct testing to confirm that the system is producing water of the required quality.

While we understand that it is the City's preference to utilize a traditional project delivery approach, early on in the design process, we will evaluate lead times for major equipment and advise the City if any pre-purchasing is recommended to maintain desired project schedule. If so, we could prioritize development of pre-procurement bid packages to initiate the process and support the City with bid reviews and selection.

Project Management and Quality Control Approach

Project Manager **REBECCA MACO** has the qualifications and experience to achieve timely consensus and lead the talents and resources of the team to meet the project objectives. She will have a team with a range of specialized technical expertise and support staff at her disposal. She will confirm that each project team member understands the critical nature of the project and adheres to the standards consistent with completing a constructible, reliable design on schedule and within budget.

Engage in Effective Planning

Good project management demands careful planning to make sure the team is engaged and effective. Rebecca will draft a Project Management Plan (PMP) that will include scope and schedule, communications plan, quality control plan, schedule and cost control plan, and levels of responsibility for each team member.

Additionally, Rebecca will facilitate discussion with the City and project stakeholders to gain consensus on critical success factors for the project. These will be documented in the final PMP, which will be distributed to the entire team to form the basis for achieving the overall objectives.

Facilitate Decisions

The BC team will apply a three-step process to arrive at timely decisions:

- **Proactive Identification of Issues:** The earlier issues are identified, the more likely they will be resolved without adverse impact on the project.
- **Effective Facilitation:** After issues are identified and framed, they will be debated and discussed. Rebecca will facilitate solutions in team meetings and workshop sessions to foster resolution.
- **Formal Documentation:** We will record decisions in meeting notes and identify the agreed upon course of action. This documentation will be reviewed by the participants in meetings and workshops to provide an opportunity for feedback in order to confirm decisions are accurately recorded.

Manage Change

We recognize that on any project, the potential exists for unforeseen changes. Our philosophy with regard to managing change is to provide a flexible, responsive, and positive approach with full buy-in of all affected parties. We will immediately flag any scope changes that could bring value to the project and will bring them to the City for discussion. However, we will not proceed unless there is mutual agreement and formal authorization by the City.

Provide Quality Work Products

Producing technically sound work products is a fundamental expectation of any project and is a function of good project management and an effective, collaborative process with the City. The quality assurance/quality control plan outlined in the PMP will guide project performance. Highlights of this plan include:

- **Continuous Quality Assurance:** We will check all work. This includes senior-level review and calculation checks, technical editing, constructability assessments, and cost estimate reviews.
- **Client and Stakeholder Workshops and Reviews:** Key City and stakeholder staff will participate in reviews of work products as the project proceeds. Capturing input from a range of perspectives will strengthen the work products.

Meet Project Budget and Schedule

There are two important elements of budget and schedule management that help achieve a successful outcome on even the most challenging project. Our approach to each of these is highlighted below:

- **Early Identification of Challenges:** Rebecca will monitor project status on a weekly basis. A more formal project status report will be prepared monthly that shows the budget expended and forecasts for cost at completion. Any task falling behind in progress will be flagged for a corrective action plan to bring it back in line.
- **Managing Scope Changes Proactively and Collaboratively:** We will fully discuss the budget and schedule implications of each change and look for opportunities to reduce the impact.

Demonstrate our Commitment to Health and Safety

A programmatic approach to health and safety. Our #1 core value at BC, we foster a culture-based health and safety (H&S) program dedicated to achieving an environment where all employees understand they are empowered to actively participate—and not just comply—with the H&S program.

BC's ultimate goal is zero H&S incidents. Preventing mishaps such as injuries and property damage benefits both our clients and BC—our solid safety performance results in reduced costs and increased productivity. H&S incidents are costly and can have a significant negative impact by affecting our employees, contractors, and public image, as well as a project's overall cost and schedule. As a result of our efforts, not only do we have safe and healthy employees, but our incident costs and loss history are substantially better than our industry at large.

The BC H&S program has received multiple industry- and client-nominated H&S awards, including the National Safety Council's Occupational Excellence Achievement for nine consecutive years, Industry Leader Award, and Safety Leadership Award.

BC is a proven, highly collaborative, award-winning firm with a 75-plus year history of successfully delivering water reuse projects nationwide. We look forward to bringing our proven water reuse and data center capabilities to this critical project for the City.

As a full-service, 100 percent environmental consulting firm with more than 2,000 employees and 54 offices across North America and the Pacific, BC has helped public and private sector clients overcome their most challenging water and environmental obstacles. Our engineers, scientists, consultants, and constructors work to safeguard our water and environment, optimize infrastructure, and restore habitats to keep our communities thriving. BC will leverage experience working closely with City staff to provide the same quality service and deliverables needed to meet the desired project timeline.

BC provides a team that is familiar with data center water operations, having provided services like those required in this scope of work for some of the largest data center operators in the world. Described in further detail on the following pages, the BC project team is actively working to help these companies identify efficiencies and strive to improve water resiliency, reliability, and sustainability. We are ready to support the City.

BC is a well-established environmental consultant in the Pacific Northwest, with team members versed in the unique environmental conditions in the area. **Project Manager Rebecca Maco and many key team members are based in the Pacific Northwest** and have spent their careers working on water-related projects in Oregon and Washington. Our team has specifically worked on projects with industrial water treatment, conveyance, and reuse in Eastern Oregon in concert with the state and local regulatory agencies. These project examples can be found in Section 4.

Together with our subconsultant partners, our team has the right qualifications and capabilities necessary to deliver a successful project for the City. BC has a history of working with key partners and subconsultants Povey and Associates (survey) and Shannon & Wilson (geotechnical), who both have relevant experience applicable to this project.

Povey and Associates (P&A) has been in business for nearly 100 years in Redmond, Oregon. P&A brings extensive survey experience and working relationships with contractors, irrigation companies, municipalities, and other agencies throughout the Central Oregon community.

Shannon & Wilson, Inc. (S&W) has extensive knowledge of the region's geologic and geotechnical conditions. Having provided services for over a dozen projects in Prineville and the Crook County area, S&W has access to original data on subsurface conditions and potential geotechnical issues that could arise from working with the subsurface conditions of the area.

Team Organization

Our well-qualified team is available for the project duration and will complete the work in a timely manner. As shown in our organizational chart, BC's team is well organized and covers the necessary disciplines to meet the requirements outlined in the RFP. This project will be managed by Rebecca Maco, who brings direct experience working both with the City and with the local data centers on water and wastewater issues. She will oversee the work, provide technical guidance based on her extensive water reuse experience, and be our team's primary point of contact for the City. Each member of the team was selected based on their exceptional qualifications and unique specialties to provide the City with the best expertise. More information about our team can be found in the bios below and the resumes in Attachment 1.

PRINEVILLE
PROJECT MANAGER

Dean Wood
PRINCIPAL-IN-CHARGE

Rebecca Maco, PE*
PROJECT MANAGER

Lynn Stephens, PE
SENIOR ADVISOR/QAQC

Key Team Members

Samantha Salvia, PE
INTEGRATED RESOURCE PLANNING LEAD

Austa Parker, PhD
REGULATORY/PERMITTING LEAD

Carla De Las Casas, PhD, PE*
PROCESS LEAD

Josh Johnson, PE
DESIGN MANAGER

Quinn Behnke, PE
RESIDENT ENGINEER

Elliott Mecham, PE ●
GEOTECHNICAL ENGINEERING

Matt Banton, PLS ●
SURVEY

KEY ● Shannon & Wilson ● Povey and Associates * Registered PE outside of Oregon

Rebecca Maco

Project Manager

25% total availability

Rebecca will leverage her experience in working with the City to provide continuity with your staff and our project team to maintain consistency around work processes. She will validate that solutions are aligned with the City's short and long-term goals. Rebecca has more than 22 years of experience collaborating with clients and leading diverse project teams that deliver innovative solutions to a wide range of water, wastewater, and environmental challenges. She brings specific expertise in the development of water and wastewater infrastructure for the data center industry and a proven track record of disciplined project management of large-scale infrastructure projects.

PROJECT EXPERIENCE

- Peer Review, Reclaimed Water System Design, City of Prineville, Oregon // **Project Manager**
- Water Reuse Design and Permitting, Confidential Data Center Client, Western United States // **Project Manager**
- Reclaimed Water System Design, Confidential Data Center Client, Western United States // **Project Manager**
- Water Reuse Permitting, Confidential Food Manufacturing Client, Western United States // **Task Lead**

Dean Wood

Principal-In-Charge

15% total availability

With over 25 years of experience, Dean brings practical experience necessary to deliver a successful project that requires alternatives analysis, cost estimating, risk analysis, and collaboration. Through his owner's advisory work, Dean also offers experience in both contractor and equipment procurement for clients such as the City of Portland and City of Tigard. Dean brings a proven track record on delivering complex projects that focuses on best value.

PROJECT EXPERIENCE

- WWTP Upgrade, Mortenson Construction, City of The Dalles, Oregon // **Principal-in-Charge**
- Owner's Representative Services, Reservoir 18 and Pump Station Project, City of Tigard, Oregon // **Project Manager**
- Resident Representative Services, Kellogg Creek Water Resource Recovery Facility Improvements, Clackamas County Water Environment Services, Oregon // **Project Manager**

Lynn Stephens

Senior Advisor QA/QC

10% total availability

Lynn brings expertise in drinking water and reuse pilot testing, planning, treatment design, and water quality analyses. As BC's Northwest Drinking Water Leader, she has extensive experience with water reuse pilot/demonstration studies and detailed design. Lynn has assisted the Cities of Lacey, Olympia, and Tumwater and Thurston County (LOTT) Clean Water Alliance, City of Los Angeles, City of San Diego, King County, Kitsap County, Metro Vancouver, and City of Nampa with water reuse.

PROJECT EXPERIENCE

- Advanced Water Treatment Planning, LOTT Clean Water Alliance, Washington // **Water Quality Expert**
- Central Treatment Plant Reclaimed Water Evaluation, City of Tacoma, Washington // **Reclaimed Water Technical Expert**
- Predesign for Reclaimed Water Demonstration, Metro Vancouver, British Columbia // **Process/Mechanical Lead**
- Reclaimed Water Rule and Purple Book Review, King County, Washington // **Project Manager and Technical Expert**

Carla De Las Casas

Process Lead

50% total availability

Carla will leverage her experience working with the City and her extensive resume of data center projects to successfully execute all process elements of this project. Carla assists municipal and industrial clients with treatment process development, troubleshooting, and permitting. Most recently, she has collaborated with data center clients to develop innovative solutions to address their water-related challenges. Her background includes a broad spectrum of wastewater and water treatment expertise, including water reuse, disinfection, water sustainability and resiliency.

PROJECT EXPERIENCE

- Peer Review, Reclaimed Water System Design, City of Prineville, Oregon // **Process Lead**
- Data Center Water Reuse Design and Permitting, Confidential Data Center Client, Western United States // **Deputy Project Manager and** Process Lead
- Refinery Recycle Water Use Expansion Evaluation, Confidential Refinery and East Bay Municipal Utility District, California // **Project Manager and Process Lead**
- Potable Reuse Conceptual Study, Irvine Ranch Water District, California // **Process Engineer**

Samantha Salvia

Integrated Resource Planning Lead

20% total availability

Samantha has extensive experience in water resources planning and environmental compliance and brings her broad range of water experience to your project. She combines a technical background in surface water and operations modeling with practical experience in water resource management issues. Samantha provides clients with strategic guidance and oversees water resources planning efforts for complex, multi-benefit, multi-agency projects. Her work involves all aspects of water resources including groundwater, drinking water, wastewater, surface storage, and desalination.

PROJECT EXPERIENCE

- Wastewater Enterprise Regulatory Support, San Francisco Public Utilities Commission, California // **Regulatory Advisor**
- Alternative Intake Project, Contra Costa Water District, California // **Project Manager**
- Brackish Water Desalination Project, City of Antioch, California // **Staff Engineer**
- Harvest Water Program, Regional San, California // **Task Lead**

Austa Parker

Regulatory/Permitting Lead

10% total availability

Austa's regulatory experience throughout the Northwest will help her successfully collaborate with the City and other stakeholders on regulatory and permitting needs for this project. Austa is the National Specialty Lead for Reuse Regulations and Policy at BC. She has more than 10 years of experience in the water reuse field working on reuse regulations and policy development, reuse process engineering, technology validations, master planning and source control programs.

PROJECT EXPERIENCE

- Reclaimed Water Rule and Guidance Manual Review, LOTT Clean Water Alliance, Washington // **Project Engineer**
- Recycled Water and Biosolids Technical Committee, Oregon Association of Clean Water Agencies (ORACWA) // **Member**
- Recycled Water Program, City of Boise, Idaho // **Permitting and Regulatory Strategy Lead**
- National Legislative and Regulatory Affairs Committee, WateReuse // **Member**
- Steering Committee—Direct Potable Reuse Regulatory Development, Colorado Department of Public Health and Environment // **Industry Representative**

Josh Johnson

Design Manager

50% total availability

Josh brings a strong design management resume paired with multiple water reuse projects throughout Oregon and Washington. He has been a project manager and team member on a wide variety of projects focusing on planning and design for water reuse, industrial water quality, and wastewater treatment. Josh has worked in all phases of the project lifecycle, including treatment plant modeling, development of facility plans and capital improvement programs, preliminary and detailed design, and construction management.

PROJECT EXPERIENCE

- Aeration Improvements, Metropolitan Wastewater Management Commission, Oregon // **Project Manager**
- Martin Way Reclaimed Water Plant Updates, LOTT Clean Water Alliance, Olympia, Washington // **Project Manager**
- Reclaimed Water and Industrial Reuse Water Engineering Report, City of Quincy, Washington // **Project Engineer**
- Chambers Creek Regional WWTP Facilities Plan, Pierce County Department of Public Works and Utilities, Washington // **Engineer**

Quinn Behnke

Resident Engineer

50% total availability

Quinn will serve as the resident engineer on this project, providing engineering support services during construction, including on site work as needed. He has more than nine years of experience performing feasibility studies, detailed design, engineering services during construction, and field evaluation of mechanical systems in various industries. Quinn has worked on projects in the mining, food processing, oil and gas, beverage, and municipal sectors, with responsibility for mechanical system design, equipment selection, fluid analysis, and construction documentation. His technical focus is piping and fluid systems, including flow analysis, thermal stress calculations, pipe support design, equipment selection, and overall layout design.

PROJECT EXPERIENCE

- Durham FOG Tank Retrofit, Clean Water Services, Tigard, Oregon // **Deputy Project Manager/Project Engineer**
- Gresham Upper Bar Screen Replacement, City of Gresham, Oregon // **Project Manager**
- HVAC Systems Replacement, Clark Regional Wastewater District, Vancouver, Washington // **Project Manager**

Elliott Mecham (S&W)

Geotechnical Engineering

50% total availability

Elliott has performed geotechnical engineering for multiple projects in Central Oregon throughout all phases of a project. He has more than 20 years of experience in geotechnical engineering. Elliott has participated in or managed geotechnical work in all phases of water projects, including facility siting studies and conceptual engineering, all phases of design, services during construction, and dispute resolution during construction closeout and post-construction activities. His experience includes geotechnical design for new recycled water treatment plants, shafts and intakes, and water reservoirs. He has experience working for cities, industrial clients, and agencies of all sizes, including the cities of Bend, Madras, and the Dalles.

PROJECT EXPERIENCE

- Watershed Source Water Improvements, City of Bend, Oregon // **Geotechnical Engineer**
- Wastewater Reclamation Plant Secondary Clarifiers, City of Corvallis, Oregon // **Geotechnical Engineer**
- WWTP Progressive Design-Build, City of the Dalles, Oregon // **Geotechnical Engineer**

Matt Banton (P&A)

Survey

80% total availability

With a strong understanding of both public and private sector surveying, Matt offers a comprehensive knowledge base to tackle any challenge. He brings more than 18 years of field and office surveying experience. Matt has delivered project work on large government sites such as the Redmond and Prineville Airports. Further survey and project management work includes large solar farms in Eastern and Central Oregon, dozens of road construction and reconstruction projects, and countless private sector jobs for clients all over the Pacific Northwest.

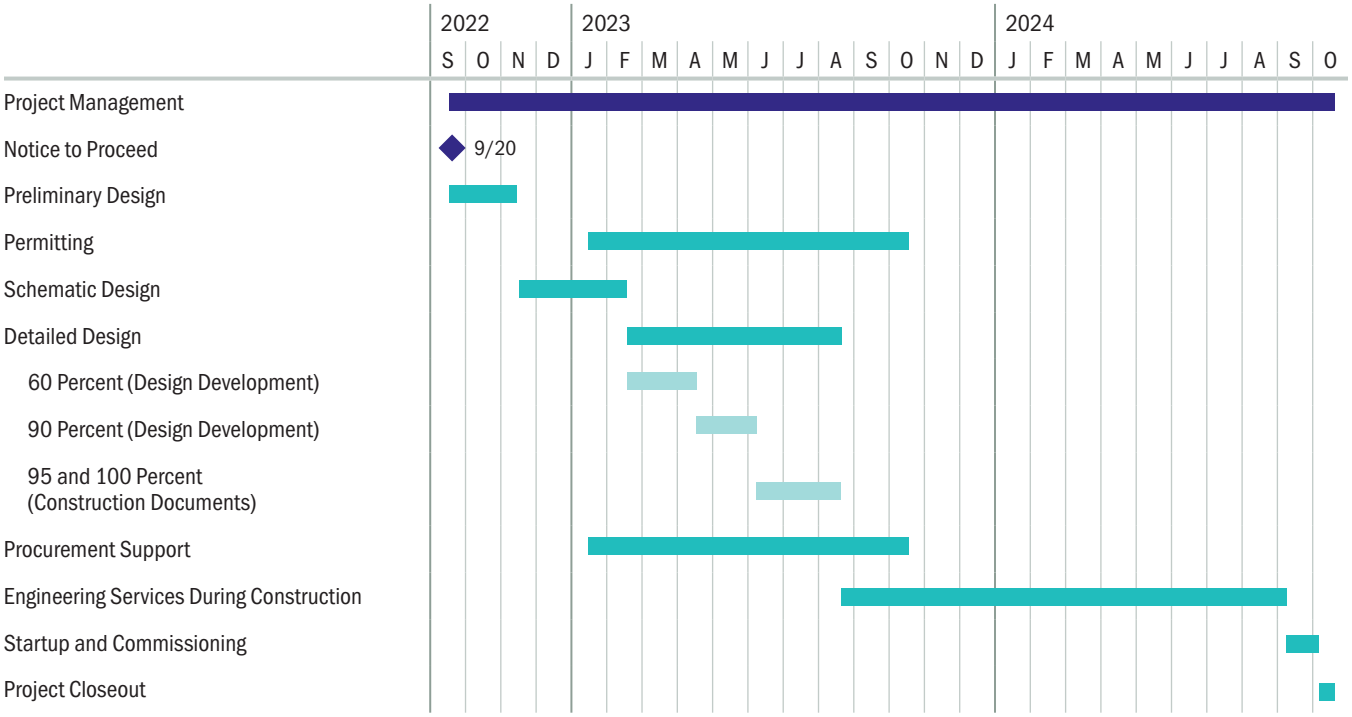
PROJECT EXPERIENCE

- Sedimentation Removal Project, Warm Springs National Fish Hatchery // **In-Water/Dam Mapping and Survey**
- North Sewer Interceptor Preliminary Layout/Design, City of Bend // **Survey/Mapping**
- Multiple Subdivision Plats, Central Oregon // **Platting, Mapping, Topographic Surveys, Construction**

The schedule shows how our team will execute each phase of the project to provide the proposed tasks and work products outlined in the request for proposals.

Project Schedule

The schedule identifies the project management procedures and tools to be used to execute tasks and confirm work quality, alignment with project goals, and cost control for work performed internally and by subconsultants. Our approach to delivery that supports City staff and systems is discussed further throughout Section 1: Project Approach.



Resources Available

The BC team is committed to cost-effectively delivering reliable solutions for the City. This team is supported by BC's national experts and support resources across the company. The biosketches in Section 2: Proposed Team and Staffing Plan identify our key personnel and the percentage of time they will dedicate to this project. We are committed to delivering this project and will adjust the percentages shown to correspond with the negotiated scope and effort.

Our project management and design services will be based out of BC's Portland and Seattle offices, with specialty technical support from national resources. Our team brings working knowledge of City facilities and a proven record of performance on similar projects.

Relevant Project Experience and Resumes of Key Team Members

SECTION 4 | Attachment 1

Section 4: **Relevant Project Experience and Resumes of Key Team Members**

Proven Past Performance on Similar Projects

For 75 years, BC has supported clients across the U.S. and in select countries worldwide by continually delivering effective industrial water and water reuse solutions. Leveraging this extensive experience, we enable clients to simplify the design and construction process, achieve higher quality, expedite schedules, and reduce costs. Our teams regularly assist these facilities with startup and operations.

The best testimony to our experience is our clients. This section shows similar relevant projects, with references, for BC. We encourage you to contact these clients to hear first-hand the type of service you can expect from our team.

Leveraging Previous Experience with the City

Project Manager Rebecca Maco brings history and experience working with the City and for Industry in Prineville. She will leverage lessons learned from these projects to lead the BC team through a streamlined, collaborative project with you.

Rebecca has managed multiple projects involving the City. Through this work, she has developed a strong, collaborative relationship with City staff as well as with the local industries.

Rebecca and the BC team recently delivered a peer review for the City of the reclaimed water system design that was completed in 2017. The proposed system was to meet reuse water quality criteria for cooling system makeup water to serve a confidential data center client. The team reviewed and validated the treatment train unit processes and water quality and quantity projections and developed an independent cost estimate for comparison with the previous estimate. Through delivery of this project, the BC team gained knowledge and understanding of the City's existing wastewater treatment plant (WWTP) and of the proposed reuse system. Our experience with this project and with the City team will give the BC team a running start on the current reuse project, allowing us to efficiently arrive at a suite of options for evaluation and selection by project stakeholders.

Reclaimed Water Program

LOTT (Cities of Lacey, Olympia, Tumwater and Thurson County) Clean Water Alliance, Washington

This planning effort enabled LOTT to develop a sustainable and adaptable management program, balancing reclaimed water supply with non-potable demand and the ability to recharge groundwater to augment potable supplies and indirectly amend instream flows.

Since 2006, BC has updated LOTT's CIP and planning projections BC makes updates to LOTT's reclaimed water production projections every year.

BC conducted a five-year multidisciplinary effort for LOTT to develop a sustainable and adaptable wastewater management program and to implement the first facilities. The program relies on a combination of water recycling and conservation to provide new capacity. The LOTT program demonstrates that water recycling programs can be cost effective sustainable solutions provided they are integrated into the overall capacity needs for the system; they provide capacity benefits year-round. Following a resource-based "just-in-time" program, LOTT saved over $40 million in total program costs and has enabled connection fees to allow growth to pay for growth while affording monthly rates to remain well below the state average.

The program was crafted to reduce dependency on effluent disposal and shift to water recycling by using satellite reclamation plants (SRP). Major components of the program included four separate projects: improvements to the Martin Way pump station, which conveys the wastewater for treatment; the Conveyance Piping Project, which transports treated and raw wastewater; the Martin Way SRP, which treats wastewater using membrane bioreactor (MBR) technology; and the Wetland Ponds and Groundwater Recharge Basins, which receive and infiltrate the treated wastewater. Project highlights included using state-of-the-art reliable membrane and biological process technology, providing grant funding eligibility, providing combined planning and permitting documents to streamline implementation and enhanced funding eligibility, achieving public acceptance through public involvement, and developing a sustainable treatment program.

The Martin Way SRP project is a greenfield design of a 2 million gallons per day (mgd), MBR, tertiary treatment facility, with 1 mgd modular expansion capacity to 5 mgd. Due to the different configurations and operating strategies used by different MBR manufacturers, LOTT chose to pre-purchase MBR equipment. BC provided the pre-purchase documents, facilitated equipment selection, and worked closely with the MBR manufacturer during the detailed design process.

More recently, BC has delivered two separate projects for LOTT to prepare a master plan for the Budd Inlet Plant to provide more capacity and higher levels of treatment. The BC team developed a long-range strategy for reclaimed water production, conveyance, and end uses.

BC'S ROLE IN PROJECT
Prime

PROJECT VALUE
Total: $50M (multiple projects)

PROJECT DATES
Start: 2006
Completion: Ongoing

CHANGE ORDERS
Yes - to increase scope of work through multiple projects

REFERENCE
Tyle Zuchowski, Project Manager, LOTT
360.528.5727
TyleZuchowski@lottcleanwater.org

BC KEY STAFF; ROLE
Josh Johnson; Project Manager/Engineer
Lynn Stephens; Water Quality Expert
Austa Parker; Project Engineer

Municipal Water Reuse for Refinery Cooling Tower Makeup and Boiler Feed

Confidential Refinery Client and Utility, California

Among the first-of-its-kind in the U.S., this project will help the refinery offset potable water demand, while providing a reliable, sustainable water supply at a lower cost.

BC has conducted feasibility studies to expand the two recycled water treatment plants—owned and operated by the utility—evaluating how different treatment processes or modifications to the existing facilities could improve reliability, ease of operation, regulatory compliance, and level of service to the refinery, as well as increase the capacity of the plants. The use of refinery treated effluent to supplement the limited municipal effluent feed to the existing microfiltration/RO system makes this project unique from other advanced treatment projects. As part of a public-private partnership, the utility treats municipal secondary effluent to supply two grades of recycled water to the refinery, including Title 22 tertiary recycled water for cooling tower makeup and high-purity water for boiler feed. BC evaluated improvement alternatives for both recycled water facilities. Bench-scale microfiltration/RO testing was also conducted to evaluate the impact of RO reject on final effluent permit compliance and to support negotiations with the local water regulatory board.

The refinery is pursuing pilot-scale testing to inform full-scale design. BC is currently preparing a grant application to support pilot efforts.

BC'S ROLE IN PROJECT
Prime

PROJECT VALUE
Total: $572K

PROJECT DATES
Start: 2014
Completion: 2022

CHANGE ORDERS
Yes - to increase project scope of work

REFERENCE
Confidential Client

BC KEY STAFF; ROLE
Carla De Las Casas; Project Manager/ Engineer

Quincy OneWater Utility

City of Quincy, Washington

BC helped Quincy replace wastewater discharges with nearly 100 percent beneficial reuse to support industrial and residential growth for decades with a resilient and sustainable water supply.

Creating lasting public-private partnerships and integrating existing infrastructure enabled Quincy to deliver a true OneWater solution using industrial, municipal, and reclaimed wastewater. Key factors for driving partnership solutions were successfully navigating water rights and restoring municipal capacity.

BC's regulatory strategy was instrumental in demonstrating to regulators that recycled water could safely be used for irrigation of food crops, enhancing local food production.

BC conducted on-site lime softening tests and ran RO simulations using various pH values and anti-scalant dosages to determine RO design criteria. The final system is designed for modular expansion to expedite just-in-time capacity expansion commensurate with industrial growth.

Using a systemwide approach, BC worked with Quincy to separate industrial dischargers, including food processors, from the sanitary sewer and connect them to Quincy's existing industrial WWTP. The team optimized industrial WWTP upgrades for Quincy and industrial partners around a desire to keep industry anchored locally.

BC integrated pilot testing results into the formation of a holistic system to enhance the value of Quincy's water. These efforts allowed use of recycled water by data centers and food processors. BC conducted onsite jar testing to evaluate the lime dosing requirements for silica removal from food processing wastewater. The team coordinated treatment uses with cooling tower water quality and quantity requirements, including municipal water distribution system considerations. The results of the testing established the design criteria for the upgrades at Quincy's industrial WWTP.

BC'S ROLE IN PROJECT
Prime

PROJECT VALUE
Total: $11.5M

PROJECT DATES
Start: 2008
Completion: Ongoing

CHANGE ORDERS
Project still ongoing

REFERENCE
Ariel Belino, City Engineer
City of Quincy
509.787.3523
abelino@quincywashington.us

BC KEY STAFF; ROLE
Josh Johnson; Project Engineer

Recycled Water Program

City of Boise, Idaho

Following extensive community engagement, Boise elected to pursue an ambitious plan to create a recycled water utility as an outcome for their Water Renewal Utility Plan, which was authored by BC. This approach will fundamentally change how Boiseans use and interact with their water moving forward.

The City selected BC to lead the implementation of the overall Recycled Water Program. The Recycled Water Program will establish a recycled water facility in the southeast part of Boise that would increase system capacity and utilize industrial wastewater for industrial reuse and groundwater recharge. As program manager, BC is delivering all aspects of the project. Early activities have included the design of a pilot treatment system that will be used to demonstrate and evaluate the effectiveness of various treatment trains, groundwater recharge site screening and investigations, policy development on the highest and best use of recycled water, and conducting a National Water Research Institute oversight panel to increase public confidence in the proposed Program, and developing a strategy to integrate equity considerations into all aspects of the Program. As the Program progresses, BC will develop an overall strategy for implementing the recycled water utility and recycled water facility. This will include a detailed groundwater fate and transport model to inform permitting and community engagement, development of a recycled water utility and supporting policies, application for a recycled water permit for groundwater recharge and industrial reuse, and analysis of the target water quality and associated treatment requirements. The program emphasizes early and ongoing engagement with regulatory agencies, interested parties and the community to develop a robust program with a goal of producing approximately 5 MGD of recycled water by 2029.

BC'S ROLE IN PROJECT
Prime

PROJECT VALUE
Total: $17.5M

PROJECT DATES
Start: 2021
Completion: Ongoing

CHANGE ORDERS
Project still ongoing

REFERENCE
Haley Falconer, Environmental Division Manager
City of Boise
208.608.7165
HFalconer@cityofboise.org

BC KEY STAFF; ROLE
Melanie Holmer; Program Technical Director
Austa Parker; Permitting and Regulatory Strategy Lead

Additional Project Experience

Data Center Wastewater Treatment Design

Confidential Client, Southern United States

BC identified a strategic partner to own and operate an industrial WWTP, supporting industrial growth and helping the data center achieve its expansion plans.

A large data center client was unable to expand its data center campus due to cooling tower blowdown discharge limitations in their existing industrial sewer discharge permit. The local utility did not have the capacity to accommodate the flows and salinity load at full buildout. A new industrial WWTP option was identified to treat peak day discharges from the data center campus at full buildout (522 gallons per minute or 752,000 gallons per day). The industrial WWTP would then be owned and operated by a third party. Once online, treated wastewater will be discharged under a new direct discharge permit. In the future, wastewater from other nearby industrial dischargers may also be treated for industrial reuse.

The third-party owner and operator identified by BC owns and operates several regional industrial and municipal wastewater treatment plants in the same state. A coalition was developed among the industrial WWTP owner/operator, the City, and multiple regional water agencies. This new strategic partnership allows the development of a new industrial WWTP to support industrial growth in the area.

At present, wastewater generated by the discharger is associated with conventional cooling tower blowdown. Therefore, the preferred wastewater management includes flow equalization, pH neutralization, dechlorination, and conveyance to the outfall located approximately three miles from the site. The third-party owner has retained BC to support strategic planning for the project and to develop the detailed design for the new WWTP. Strategic planning support efforts include facilitation and negotiation of permits and/or easement agreements, including community engagement, press release development, and engagement with the City or other key stakeholders related to acute public relations topics.

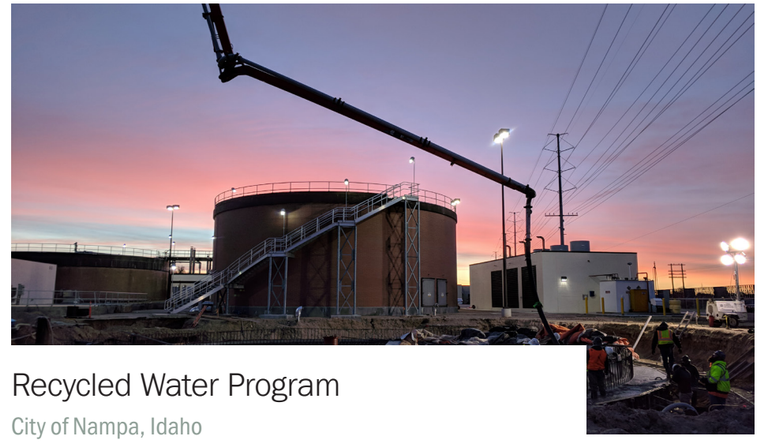
Industrial Wastewater Infrastructure Design

Confidential Data Center Client, Midwestern United States

Together with our client, BC has developed and maintained a schedule for delivery of the project that is realistic, has been endorsed by project stakeholders, and will meet schedule requirements for operational infrastructure.

A confidential data center client determined that the best long-term strategy for managing cooling tower blowdown was to send it to a local municipality for treatment and subsequent discharge to surface water via a National Pollutant Discharge Elimination System (NPDES) permit. The municipality was willing to provide the service but did not have the infrastructure in place to do so and the client's schedule required operational facilities within two years.

The municipality was not prepared to deliver the service at the speed required by the client; therefore, the client directed BC to deliver an accelerated design of a new industrial WWTP, associated blowdown pump stations and conveyance piping, and permitting of the new NPDES discharge. We worked closely with all project stakeholders to develop a basis of design for the new system that would provide not only treatment and discharge of our client's wastewater but additional wastewater from other industrial users in the area as well.



Recycled Water Program

City of Nampa, Idaho

BC pioneered the vision for and led the delivery of Nampa's Class A Recycled Water Program, the largest in Idaho that uses water for irrigation supply and industrial reuse. This precedent-setting program redefined how Idaho uses recycled water.

Regulatory Strategy: In close collaboration with the Idaho Department of Environmental Quality (IDEQ) and Pioneer Irrigation District, BC crafted a recycled water permit strategy and roadmap that allowed Nampa to address both phosphorus and temperature compliance. This strategy included describing how Nampa's program was protective of Waters of the U.S. and groundwater while providing flexibility for the future.

Technology Selection: BC saved Nampa $17M by selecting a cost-effective and flexible tertiary treatment approach. These savings were realized by demonstrating that the selected treatment approach was most appropriate for Nampa's water. This approach was validated by a community oversight group.

Industrial Wastewater: The Nampa Wastewater Treatment Plant (WWTP) is heavily influenced by industrial customers, which account for nearly half of the influent loadings. BC worked closely with these industrial partners to provide treatment and reuse solutions that provided direct value to their businesses.

Experience Summary

Rebecca has more than 22 years of experience collaborating with clients and leading diverse project teams that deliver innovative solutions to a wide range of water, wastewater, and environmental challenges. She brings specific expertise in the development of water and wastewater infrastructure for the datacenter industry and a proven track record of disciplined Project Management of large-scale infrastructure projects.

Assignment

Project Manager

Education

M.S., Environmental Engineering, University of Washington

B.S., Chemical Engineering, University of Washington

Registration

Registered Professional Chemical Engineer (California, Washington); Certificated Project Management Professional (PMP®)

Experience

22 years

Joined Firm

2019

Relevant Expertise

- *Wastewater Treatment Alternatives Analysis*
- *Water Reuse Design and Permitting*
- *Datacenter Evaporative Cooling Systems*
- *Integrated (Industrial/Municipal) Water Management Planning*

Peer Review – Reclaimed Water System Design, City of Prineville, Oregon

Project Manager. Rebecca reviewed and evaluated a proposed Reclaimed Water System design for the City of Prineville's municipal wastewater treatment plant. She reviewed and validated the treatment train unit processes and water quality and quantity projections and developed an independent cost estimate for comparison with previous.

Blowdown Treatment System Design and Permitting, Confidential Data Center Client, Central United States

Project Manager. Rebecca led the development of an accelerated preliminary design of a new industrial wastewater treatment plant, pump stations and conveyance piping, and a new national pollutant discharge elimination system (NPDES) discharge permit application. She worked with the project's stakeholders to develop a basis of design for the new system that would provide not only treatment and discharge of the client's wastewater, but additional wastewater from other industrial users in the area as well.

Water Reuse Design and Permitting, Confidential Data Center Client, Western United States

Project Manager. Rebecca led the development of the design basis, preliminary design, detailed design and permitting for a new water reuse system. The system will convey cooling system blowdown to an existing irrigation pond for beneficial reuse in agricultural irrigation. She worked with multiple private landowners and local utility operators along the pipeline route to arrive at an alignment that was acceptable to all parties.

Wastewater Alternatives Evaluation and Conceptual Design, Confidential Data Center Client, Southern United States

Project Manager. Rebecca developed the basis of design and evaluated alternatives for blowdown management that included onsite treatment and discharge to surface water via NPDES permit, land application (irrigation reuse), industry-to-industry reuse, and expansion of the publicly owned treatment works (POTW) to accommodate. She ranked the alternatives based on overall risk and life cycle cost and developed recommendations.

On-site Cooling Water Treatment Feasibility Study, Confidential Data Center Client, Western United States*

Project Manager. Rebecca led the evaluation of on-site treatment options for data center cooling water to minimize overall water use, as well as corrosion and scaling within the cooling system and associated operations and maintenance requirements. She developed a process to treat and recirculate blowdown, reducing water use by approximately 30 percent while maintaining concentrations of scale-forming ions below current levels, which is expected to significantly reduce maintenance requirements.

Reclaimed Water System Design, Confidential Data Center Client, Western United States*

Project Manager. Rebecca led a multidisciplinary team in the design of a reclaimed water treatment system to treat sanitary sewage to a quality acceptable for use in direct evaporative cooling at the data center. She developed a water balance model of the combined City and data center systems to size the equalization volume required to accommodate peak cooling demands. She developed a specification for cooling water chemistry and an associated treatment process to maximize cycles of concentration and minimize corrosion within the cooling system.

Evaporation Pond Conceptual Design, Confidential Data Center Client, Western United States*

Project Manager. Rebecca developed estimates of blowdown discharge rates from the data center's direct evaporative cooling systems and created a conceptual design of an evaporation pond to discharge and dispose of blowdown.

Cooling Water Treatment and Optimization Studies, Confidential Data Center Client, Multiple locations, United States*

Project Manager. Rebecca evaluated treatment alternatives to maximize cycles of concentration and reduce overall water use in data center direct evaporation cooling systems at multiple sites. She analyzed the potential for bacterial and algal growth within the system based on water quality data and developed alternatives for disinfection to prevent biological growth. She evaluated the client's pilot scale treatment equipment performance and the ability of the system to achieve the client's water management objectives.

Water Risk Assessment, Confidential Data Center Client, Western United States

Project Manager. Rebecca conducted a water risk assessment that evaluated water quantity and quality risks to data center operations. The evaluation included several spatial (regional, utility, and site-specific) and temporal (near term during initial buildout and through full buildout and throughout the anticipated lifespan of the facility) scales and resulted in recommendations for utility infrastructure upgrades and acquisition of water rights to reduce risks to the facility.

Water Usage Minimization Study, Confidential Petrochemical Client, Multiple International Locations*

Project Manager. Rebecca developed multiple options to reduce water usage within petrochemical facilities in three separate regions of the world and developed an evaluation process to compare them based on the lifecycle costs, reduction in water usage, and risk profile. The evaluation was conducted at the regional level to address regional differences in utility costs and discharge requirements. The evaluation process developed can be applied at the site-specific level to inform decision-making around water usage reduction strategies. Rebecca developed both a report and a working cost tool as part of this work. The report detailed the water usage reduction options and methodology for comparison of strategies at a regional level. The Excel-based costing tool provided the client with a means to quickly compare the lifecycle costs of different water usage reduction strategies and to modify input parameters to reflect economic conditions at specific plant locations.

Water Reuse Permitting, Confidential Food Manufacturing Client, Western United States

Task Lead. Rebecca is leading the water reuse permitting for a water reuse application in food manufacturing. The application is the first of its kind in the State and the permitting process has required a high level of communication with State and Federal regulators, local project stakeholders, and multiple groups within the client's organization both, through written technical documents and presentations summarizing the project. She is working with the client's hydrogeologist to also incorporate water reuse permitting of an aquifer storage and recovery (ASR) system to provide a means of storing the reuse water for subsequent recovery during times of peak facility demand.

Experience Summary

With over 25 years of experience, Dean brings practical experience necessary to deliver a successful project that requires planning, alternatives analysis, cost estimating, risk analysis, and collaboration. Through his focus on Integrated Project Delivery, Dean brings a proven track record on delivering complex projects that focuses on resilience and best value to achieve long-term goals. His experience includes working in close collaboration with Clients in owner's advisory roles as well as managing complex projects that require working with a broad range of stakeholders, engineers, and contractors. His strength includes the evaluation and application of alternatives for constructability, risk mitigation, schedule optimization, and best value.

Assignment

Principal-in-Charge

Education

B.S., Civil Engineering, Oregon State University, 1994

Experience

25 years

Joined Firm

2022

Relevant Expertise

- *Project Management*
- *Alternative Delivery*
- *Collection Systems & Water Transmission Infrastructure*
- *Pump Stations*
- *Wastewater Treatment*
- *Risk Management*
- *Procurement*
- *Planning & Alternatives Analysis*

WWTP Upgrade, City of The Dalles, Oregon

Principal-in-Charge. The progressive design-build delivery approach facilitated innovation resulting in a plan that maximized the City's existing assets utilizing the remaining service life of the Influent Pump Station building and wet-well, headworks areas, and the process basin. This Plan ensured the City would continue to meet their NPDES permit requirements and treatment reliability standards as the service area continues to grow, while addressing previously known and newly identified plant deficiencies. Improvements also address the shortcomings of the solids storage system by construction of a digester which allowed the City to accommodate outside waste streams for a planned cogeneration facility. WWTP upgrades were designed to increase capacity from 7.7 mgd to 13.2 mgd. Through a series of Collaborative Delivery workshops, innovative alternatives were implemented including the addition of primary filtration along with a new anaerobic digester and cogeneration facility. As an alternative to a new influent pump station, our team developed upgraded their existing pump station saving the city millions of dollars.

Phase 1 North Interceptor Sewer Project, City of Bend, Oregon

Principal-in-Charge. Project consisted of the design and construction of a 2-mile sewer transmission pipeline to accommodate growth and add redundancy to the City's collection system. Through an in-depth alternatives analysis, the project added a 37 MGD influent pump station at the WWTP saving the City millions on a future CIP project. Dean led the team in collaboration workshops that resulted in innovative design features such as a drop structure to save on excavation costs and a pump station cleaning system to accommodate a wide range of flows. Other challenges included geotechnical conditions requiring extensive blasting and permitting agreements with local irrigation districts.

Phase 2 North Interceptor Sewer Project, City of Bend, Oregon

Principal-in-Charge. Project consisted of the design and construction of a 3 mile sewer transmission line that included 4 trenchless crossings: highway 97, BNSF and 2 irrigation district pipelines. Primary challenges included deep open cut installation up to 30' deep in basalt rock and significant easement acquisition and crossing agreements with local agencies, residents, and businesses. This $60M project was delivered under the Progressive Design Build procurement method. Through Dean's support in subcontractor procurement, the project finished over $6M under budget.

Owner's Representative Services for the Reservoir 18 and Pump Station Project, City of Tigard, Oregon

Project Manager. With projected growth in the River Terrace area of Tigard and water storage limitations, two City owned properties were identified as being viable for siting a new 4.5MG reservoir to supply their 560 pressure zone. In

addition to storage, other priorities included system resilience, operational flexibility, and the ability to effectively respond to emergencies and natural disasters. To optimize schedule, the City was interested in evaluating alternative delivery procurement options. As Owner's Advisor, Dean worked with the City to evaluate Design/Build alternatives which resulted in the selection of Progressive Design Build. Dean also Managed the reservoir siting study, pump station alternatives analysis, developed the RFP and supported the City with finalizing procurement documents.

Water System Utilities & Reuse Project, Confidential Client, Albany, Oregon

Project Manager. Facility was originally dependent on a neighboring Pulp & Paper facility to deliver utility services including water supply, wastewater and stormwater treatment. Due a potential property sale, our confidential client was required to develop their own utilities within 6 months to remain operational. Dean led planning efforts and the evaluation of alternative delivery methods to optimize project schedule. Dean also served as project manager for the design of the following elements: New Water Source from Albany-Millersburg, MBBR Biological Treatment System, stormwater infiltration system and site civil improvements for spill containment.

Columbia Boulevard Wastewater Treatment Plant Pipeline Condition and Risk Assessment, Portland Bureau of Environmental Services, City of Portland, Oregon

Principal-in-Charge. Originally constructed in 1952 and expanded in later years, strategic investment into the renewal or replacement of critical infrastructure is a significant priority for BES to mitigate operational risks. The purpose of this 5-year program is to develop a framework for determining and managing likelihood and consequence of asset failure. Multiple subconsultants were used with expertise in pipe inspection, 3D scanning of exposed pipe galleries, innovative pipe inspection technologies and GIS development. The program takes a comprehensive and proactive approach to condition assessment that leads to defining the degree and pace of reinvestment required to meet and sustain optimal levels of service at an acceptable risk.

WWSP Intertie Pipeline, City of Beaverton, Oregon

Principal-in-Charge. This project included 2,800 LF of new 24-inch diameter ductile iron pipe. The project also included a trenchless crossing of 209th Ave. in a 42-inch casing, two flow meter vaults and three control valve vaults to provide a connection to the WWSP Tualatin Valley Highway Turnout and JWC transmission pipelines near the intersection of TV Highway and SW Cornelius Pass Road. The project included geotechnical evaluation, corrosion protection design, and seismic analysis to assure that the pipeline and appurtenances meet the required design life.

Hattan Road Booster Pump Station, Clackamas River Water, Clackamas, Oregon

Principal-in-Charge. Design included can-style vertical turbine pumps to move water between the 6 MG 152nd Reservoir and the 2 MG Redland Reservoirs using over four miles of 18-inch to 24-inch transmission mains. Sections of the suction and discharge main were designed as part of this project. Land use permitting and a property partitioning were required to develop the pump station site. Two new buildings were constructed to house the pump station and separate surge pressure mitigation system. The surge building was designed with an emergency pressure relief station to gravity flow treated water between reservoirs while bypassing the pump station. The station has a flow monitoring station and onsite monitoring for chlorine residual.

Resident Representative Services for Kellogg Creek Water Resource Recovery Facility (KCWRRF) Improvements, Clackamas County Water Environment Services (WES), Oregon City, Oregon

Project Manager. The KCWRRF was at risk of meeting their NPDES permit due to the condition of their facility. As portions of the plant were at risk of failure, this project was delivered under the CM/GC procurement method to facilitate early construction packages. Dean led a project team that provided owners representative services during construction intended to assist the District to administer the contract for construction, monitor the performance of the construction contractor, verify that the contractor's work was in substantial compliance with the contract documents and assist the District in responding to events that occur during construction.

Lynn Williams Stephens, P.E.

Experience Summary

Lynn is BC's Northwest Drinking Water Leader and her focus is on helping communities with water system planning, water quality characterizations, and treatment analysis and design for drinking water and recycled water. Lynn has led detailed design for pumping, piping, and mechanical systems for treatment facilities. She has experience in drinking water and reuse pilot testing, planning, treatment design, and water quality analyses. She has extensive experience with water reuse pilot/demonstration studies and detailed design. Lynn has assisted the Cities of Lacey, Olympia, and Tumwater and Thurston County (LOTT) Clean Water Alliance, City of Los Angeles, City of San Diego, King County, Kitsap County, Metro Vancouver, and City of Nampa with water reuse. Lynn was selected as a member of the Washington State Reclaimed Water Rulemaking Advisory Committee for her expertise in reclaimed water. Lynn has also served as Co-Principal Investigator on several Water Research Foundation projects focused on water reuse including serving as a Co-PI for WRF 4832 – Removal of CECs by Ozone/BAF Treatment in Potable Reuse Applications.

Assignment

Senior Advisor QA/QC

Education

M.S.E., Environmental Engineering (Magna Cum Laude), University of Michigan, 2009

B.S., Civil Engineering (Magna Cum Laude), Michigan Technological University, 2007

Registration

Professional Engineer 50145, Washington, 2012

Professional Engineer 96842PE, Oregon, 2021

Experience

13 years

Joined Firm

2009

Relevant Expertise

- *Reuse*
- *Water supply planning*
- *Climate change resiliency*
- *Pilot studies*
- *Treatment design*
- *Water quality evaluations*

Memberships/Select Volunteering

- *WateReuse PNW*
- *American Water Works Association*

  Biological Drinking Water Treatment Committee, Biological Drinking Water Treatment Committee, 2008–present, Chair (2017-2019)
- *Water Environment Federation*
  - *PNCWA Sustainability Committee*

Advanced Water Treatment Planning, LOTT Water Alliance, Washington

Water Quality Expert. Lynn conducted a preliminary design for a 20 mgd advanced water treatment facility including the application for potable reuse. These upgrades are in line with LOTT's long term goal of reducing discharge to the Puget Sound through groundwater recharge and other demands for high quality product water. Several unit processes were considered for the advanced treatment process: membrane bioreactor (MBR), microfiltration (MF)/ultrafiltration (UF), ozonation, biofiltation, reverse osmosis (RO), and UV disinfection. Lynn completed preliminary sizing of each unit process and associated chemical and electrical facilities. These facilities were used to develop unit capital and O&M costs, and these unit costs were subsequently used to project the costs of investments to have advanced water treatment.

Central Treatment Plant Reclaimed Water Evaluation, City of Tacoma, Washington

Reclaimed Water Technical Expert. WestRock approached the City of Tacoma (City) to express an interest in using Central Treatment Plant (CTP) treated effluent for process water uses at their mill, located about 1.3 miles from the CTP site. Use of CTP effluent at WestRock would represent a beneficial reuse of reclaimed water and would be subject to Washington State Department of Ecology (Ecology) and Department of Health reclaimed water regulations. The City considered two primary alternatives: 1) conveyance of Class B reclaimed water to WestRock and 2) production of Class A reclaimed water at the CTP for conveyance to WestRock or other potential users. Several reclaimed water production alternatives were evaluated using the business case evaluation (BCE) tool following an initial screening of water quality and flow rate scenarios. The results of the BCE were used to estimate the costs associated with providing reclaimed water to WestRock that would need to be recovered to make the project feasible. Lynn provided a summary of the requirements of Washington's Reclaimed Water Rule. She also assessed water quality data and West Rock's water quality goals to oversee the sizing, design, and layout of the reclaimed water treatment systems for each alternative.

Reclaimed Water Design, Kitsap County, Washington

Water Quality Engineer. As a part of a larger detailed design for the Central Kitsap WWTP, Lynn designed the sodium hypochlorite system for the 8 mgd

reclaimed water system. This work included sizing the sodium hypochlorite facilities.

Advanced Treatment Pilot Study, Sacramento Regional County Sanitation District, California

Technical Support. Regional San is required to meet stringent NPDES permit requirements for ammonia and nutrients. Filtration with pre-ozonation and MF were identified as viable tertiary filtration technologies; and chlorination, ozonation and UV disinfection were the identified disinfection technologies. Lynn provided technical support for this pilot effort.

Facility Plan, City of Nampa, Idaho

Tertiary Filtration Preliminary Design Engineer. This effort was to evaluate and complete a planning-level design for tertiary filtration. Three technologies were considered: Dynasand, Leopold conventional sand filters, and membrane filtration. The tertiary filters had goals to treat to 0.1 mg/L total phosphorus in the summer and 0.35 mg/L total phosphorus in the winter. Lynn completed the design and proposed layouts for the treatment systems.

Pure Water San Diego, City of San Diego, California

Design Review for Biofiltration. Lynn provided design review of the 60% and 100% deliverables for the biofiltration process, specifically BAC, for the North City Water Reclamation Plant Expansion.

WRF 4832: Evaluation of CEC Removal by Ozone/BAF Treatment in Potable Reuse Applications

Co-PI. The research objectives are to develop ozone/BAF design and operational guidance based on scientific and engineering insight and regulatory public health protection requirements and develop communication and outreach tools.

Trade-offs for Alternative Water Supplies, WRF #4715

Co-Principal Investigator. This project will provide guidance for utility supply planners to better identify and address the trade-offs of incorporating alternative water supplies into a diverse water supply portfolio for greater reliability. The following alternative water supply sources will be considered: centralized stormwater, reclaimed water, desalination, and potable reuse, decentralized or onsite reuse of stormwater, graywater, and blackwater. This work includes conducting a literature review, survey, one-on-one interviews, and a workshop with other water professionals.

Predesign for Reclaimed Water Demonstration. Metro Vancouver, British Columbia

Process/Mechanical Lead. Metro Vancouver is looking to assess the effectiveness and economic feasibility of implementing reclaimed water at their Lulu Island Wastewater Treatment Plant (LIWWTP), and at other regional WWTPs currently scheduled for upgrades. Lynn is leading the predesign effort for this demonstration facility.

Reclaimed Water Rule and Purple Book Review, King County, Washington

Project Manager and Technical Expert. This project supported King County's review of the Washington State Department of Ecology's current draft Reclaimed Water Rule and Water Treatment Facilities Manual: the Purple Book. Lynn managed this project and coordinated a team of experts across the country to provide comments on alternative language for modifying the proposed draft rule and purple book. This work included providing technical rational for the proposed language modifications based on other states' regulations.

Reclaimed Water Design, City of Blaine, Washington

QA/QC. Lynn reviewed and checked the chlorination calculation for the reclaimed water system.

Reclaimed Water Facility Plan. Kitsap County, Washington

Project Engineer. Kitsap County has identified a variety of reclaimed water opportunities to provide community benefits, decrease reliance on the Puget Sound outfall, and offset the use of potable groundwater supplies. The County has envisioned a need to provide reclaimed water from the existing Kingston WWTP for irrigation at a local golf course, and off-season groundwater recharge. Lynn is evaluating reclaimed water treatment and end uses using a business case evaluation (BCE) and supporting the public outreach effort.

Carla L. De Las Casas, Ph.D., P.E.

Experience Summary

With an emphasis on treatment processes, Dr. De Las Casas has more than 20 years of experience in process engineering, design, and project management. Carla assists municipal and industrial clients with treatment process development, troubleshooting and permitting. Most recently, she has collaborated with data center clients to develop innovative solutions to address their water-related challenges. Her background includes a broad spectrum of wastewater and water treatment expertise, including secondary treatment needs for recycle water producing facilities, water reuse, disinfection, water sustainability and resiliency. Carla has participated in laboratory studies, field investigations, pilot studies and designs for various industries.

Assignment

Process Lead

Education

Ph.D., Environmental Engineering, University of Arizona, Tucson, Arizona, 2006

M.S., Environmental Engineering, University of Arizona, Tucson, Arizona, 2003

B.S., Mechanical-Industrial Engineering, Technological University of Panama, Panama, 2001

Registration

Civil Engineer, California, No. 79246, 2011

Experience

21 years

Joined Firm

2007

Relevant Expertise

- *Water Sustainability and Resiliency*
- *Water reuse*
- *Pilot, Field Work and Laboratory Studies*
- *Refinery wastewater treatment*
- *Municipal wastewater treatment*
- *Activated sludge modeling*
- *Disinfection Technologies*
- *Constituents of Emerging Concern*
- *Water chemistry*
- *Regulatory compliance*
- *Granular Activated Carbon*

Memberships

- *Water Environment Federation and California Water Environment Association (CWEA) Member 2008-present*

Review of Reclaimed Water System Design for Data Center Water Supply, City of Prineville, Oregon

Process Lead. Carla reviewed and evaluated a proposed Reclaimed Water System design for the City of Prineville's municipal wastewater treatment plant. The proposed system was to meet reuse water quality criteria for cooling system makeup water to serve two confidential data center clients. She reviewed and validated the treatment train unit processes and water quality and quantity projections and developed an independent cost estimate for comparison with previous estimates.

Data Center Water Reuse Design and Permitting, Confidential Data Center Client, Western United States

Deputy Project Manager and Process Lead. Carla led the development of the design basis, preliminary process design, detailed design and permitting for a new water reuse system. The system will convey cooling system blowdown to an existing irrigation pond for beneficial reuse in agricultural irrigation. BC worked with multiple private landowners and local utility operators along the pipeline route to arrive at an alignment that was acceptable to all parties.

Refinery Recycle Water Use Expansion Evaluation, Confidential Refinery and Municipal Utility District, California

Project Manager and Process Lead. Both the Refinery and Utility would like to expand the capacity of recycle water use at the refinery. The MF/RO Water Treatment Plant (WTP) supplies recycle water for the refinery boilers. A second plant supplies recycle water for the refinery cooling towers. The source of water for both plants is secondary-treated effluent produced by another municipal entity and it is limited during dry weather seasons. Based on the results of the 2016 study, reuse of the Refinery WWTP effluent is technically feasible, but additional studies were needed to assess the impact of a higher salinity stream to the refinery's NPDES permit compliance. In 2021, Carla led wastewater characterization efforts and the development of bench-scale test plans for mercury removal and for MF/RO treatment of Refinery/Municipal WWTP effluent blends to assess compliance using a blend of Refinery effluent and RO concentrate. The results were used to inform permit revisions with the regional water board to allow for future project implementation. The Refinery is pursuing a pilot study to inform full-scale design and BC is currently preparing grant applications to support these efforts.

Data Center Wastewater Treatment Design, Confidential Data Center Client, Southern United States

Process Lead. Carla led the development of the basis of design and preliminary process design for the new wastewater treatment plant and discharge pipeline. She also led the wastewater characterization efforts to

support the NPDES permit application. BC is currently in negotiations to move the project forward into detailed design.

Data Center Wastewater Alternatives Evaluation and Conceptual Design, Confidential Data Center Client, Southern United States

Process Lead. Carla developed the basis of design and evaluated alternatives for blowdown management that included onsite treatment and discharge to surface water via NPDES permit, land application (irrigation reuse), industry-to-industry reuse, and expansion of the publicly owned treatment works (POTW) to accommodate additional flows and loads. She ranked the alternatives based on overall risk and life cycle cost and developed recommendations.

Data Center Water Use Minimization Study, Confidential Client, Southwestern United States

Project Manager and Process Lead. A confidential data center client sought to expand operations, minimize water usage effectiveness, and decrease blowdown discharge in an area of water stress in the United States. The local water source is high in silica, which currently limits the cycles of concentration of the cooling system. The project involved establishing a design basis, evaluating alternatives for silica removal, developing conceptual design, and preparing cost estimates. Both centralized and modular concepts were developed to determine the best arrangement while considering different ownership models for the treatment systems. BC's recommendations for pilot testing the selected technology and establishing the best water management and sustainability practices provided a clear and practical path to address water/wastewater issues throughout facility expansion.

Data Center Blowdown Treatment Alternatives Evaluation, Confidential Client, Midwestern United States

Process Lead. A confidential client was planning to construct a new data center on an empty parcel. The new facility was expected to generate approximately 2 million gallons per day in cooling tower blowdown wastewater and would require a new wastewater treatment plant (WWTP). Carla led the alternatives evaluation to assess the location, final discharge, type of treatment, owner, operator, and project delivery method for the new WWTP. She also led the development of the design basis for the new WWTP based on flow and key water quality constituents. A permitting review was then performed to estimate likely permit limits depending upon the discharge location. An alternatives matrix was developed with three site location options, four discharge options, three owner/operator options, and five project delivery methods. Alternatives were developed based on the viable combinations of these options. Conceptual-level capital costs were developed for each viable alternative. The alternatives were evaluated on the basis of compliance risk, regulatory complexity, and capital cost. A risk versus cost chart was also developed. The analysis was used to select the site location, discharge and owner/operator for the new WWTP, and the study provided the basis for design of the new WWTP and associated infrastructure.

Effluent Delivery and Advanced Water Treatment for Data Center Water Supply, Truckee Meadows Water Authority, Reno, Nevada

Process Engineer. BC has been recommended by TMWA to the General Improvement District and to the private parties to provide studies and potential program management for a reclaimed/advanced water treatment project to serve the needs of the private parties. Currently, Farr West (Design Engineer) is working on design of a pipeline alignment. BC is conducting initial source water quality sampling and analytical scope and developing a preliminary basis of design report for the reuse treatment facility. Carla provided process engineering support.

Potable Reuse Conceptual Study, Irvine Ranch Water District, California

Process Engineer. The Irvine Ranch Water District (District) is poised to take advantage of its significant recycled water infrastructure investment and further support water supply diversity and resiliency. BC is preparing a conceptual study to canvas the myriad of potable reuse concepts, evaluate technical, regulatory and environmental feasibility, and reach consensus on the most advantageous alternatives to advance to a feasibility study. Carla evaluated the wastewater quality of the District's Michelson Water Recycling Plant (MWRP) and Los Alisos Water Recycling Plant (LAWRP). She evaluated treatment considerations, regulatory requirements and potential modifications to enhance potable reuse.

Experience Summary

Josh is a chemical engineer based in BC's Portland office. He has been a project manager and team member on a wide variety of projects, focusing on planning and design for wastewater treatment, water reuse, and industrial water quality. Josh has worked in all phases of the project lifecycle, including sewer and treatment plant modeling, development of facility plans and capital improvement programs, preliminary and detailed design, and construction management. Other work has included the planning and design of wastewater conveyance facilities, hydraulic modeling of sewer networks, and stormwater system planning and design.

Assignment

Design Manager

Education

M.S., Chemical Engineering, University of California, Santa Barbara, 2006

B.S., Chemical Engineering, University of Idaho, 2002

Registration

Professional Chemical Engineer, Washington 47138

Experience

15 years

Joined Firm

2006

Relevant Expertise

- *Wastewater treatment and water reuse planning and design*
- *Hydraulic modeling*
- *Wastewater facility planning*
- *Stormwater system planning and design*

Project and Design Management

Aeration Improvements, Metropolitan Wastewater Management Commission, Oregon

Project Manager. Josh was the project manager for an evaluation of potential upgrades to the Metropolitan Wastewater Management Commission (MWMC) Water Pollution Control Facility. The project evaluated the WPCF's blower and aeration air delivery system from a number of perspectives, including process capacity, condition, and efficiency, to determine upgrades required to prepare the plant for the next 20 years of growth and to increase efficiency. The project included condition assessment, evaluation of the biological process through modeling and testing of oxygen transfer efficiency, and efficiency evaluation of the plant's existing blower and air delivery system. The result will be business case evaluation-based recommendation for upgrades.

Forest Grove Secondary Clarifier Design, Clean Water Services, Oregon

Project Manager. BC designed a 14 mgd, 120-foot-diameter secondary clarifier ancillary improvements to the facilities' aeration basins and return activated sludge pumping system. As project manager, Josh was responsible for overall delivery and quality and for management and coordination of an interdisciplinary team of engineers, designers, and subconsultants. BC also assisted with services during construction. Construction of the project is was completed in late 2021.

Hood River Ultraviolet Disinfection and Plant Improvements, City of Hood River, Oregon

Project Manager. BC is designed an expansion and upgrade to the ultraviolet disinfection system at the City of Hood River's WWTP. The project will modernize the existing system and expand capacity to accommodate future growth. As project manager, Josh is responsible for overall delivery and quality and for management and coordination of an interdisciplinary team of engineers and designers. Construction is scheduled for completion in fall 2022.

Martin Way Reclaimed Water Plant Updates, LOTT Clean Water Alliance, Olympia, Washington

Project Manager. Josh was the project manager for an evaluation for upgrades to the LOTT Clean Water Alliance's 2.0 MGD Martin Way Reclaimed Water Plant and an accompanying 10 MGD wastewater pump station. The project collected information on an initial list of proposed plant upgrades through reviews of performance data and interviews with operators. Alternatives were developed for each upgrade, and alternatives were evaluated and ranked

through a series of workshops with plant staff. The result was a prioritized list of upgrades to modernize the plant.

Hillsboro WWTF Odor Abatement and Washer-Compactor Replacement, Clean Water Services, Oregon

Project Manager. BC designed upgrades to the Hillsboro WWTF odor control system and replacement for the plant's screening washer-compactors. Josh managed the construction phase of the project, providing support for submittal reviews, RFI responses, and change orders.

Reclaimed and Industrial Reuse Water

Reclaimed Water Expansion Alternatives Assessment, LOTT Clean Water Alliance, Olympia, Washington

Project Engineer. BC evaluated options for expanding the reclaimed water facilities at the LOTT Clean Water Alliance's Budd Inlet Treatment Plant. The project evaluated options for expanding the process within a limited available footprint, and compared these to alternatives for acquiring additional property for the plant using a business case evaluation methodology.

Cooling Tower Makeup Water Treatment System, Data Center, Confidential Client

Project Engineer. BC designed a facility to pretreat non-contact cooling water for use in cooling towers. Pretreatment enables increased recirculation of cooling water, reducing overall water consumption and discharge. Project roles included conducting the initial heat- and mass-balance modeling of the towers to size the facility, assisting the client in meeting state agency permitting requirements for the facility, preparation of an operations and maintenance (O&M) manual, and startup and optimization assistance for the facility.

Reclaimed Water and Industrial Reuse Water Engineering Report, City of Quincy, Washington

Project Engineer. BC developed a comprehensive master plan and engineering report for a reclaimed water and industrial reuse water utility for the City of Quincy. The plan guides the development of a new utility to provide reclaimed water from the City's municipal wastewater treatment plant (WWTP) and industrial reuse water and filtered industrial effluent from the City's industrial WWTP. The plan evaluated alternatives for discharge from both plants, including infiltration, direct injection, and land application. The new utility will free up capacity in both the City's potable water and wastewater systems by providing water for reuse.

HERO Feasibility Study, City of Quincy, Washington

Project Engineer. BC performed a study to assess the feasibility of installing HERO for a portion of the City of Quincy's industrial WWTP effluent. HERO treatment would produce water suitable for reuse in a range of industrial applications, and which would also be suitable for percolation or direct injection to groundwater. The study included a technical assessment of the capital and operating requirements of such a system, cost estimates, and an assessment of the permitting requirements to implement industrial reuse.

Industrial Effluent Sand Filter System, City of Quincy, Washington

Project Engineer. BC designed a 5.4-million-gallon per day (mgd) sand filtration system for the City of Quincy. The system filters effluent from the City's industrial WWTP, making it suitable for certain reuse applications. The filter system also functions as a preliminary treatment stage for the City's high-efficiency reverse osmosis (HERO) system.

Brine Evaporation Ponds, City of Quincy, Washington

Project Engineer. BC designed two double-lined evaporation ponds for the City of Quincy. The ponds accept brine waste from industrial users in the city operating water softeners and reverse-osmosis (RO) systems for treatment of cooling water. The ponds allow brine waste to be diverted from the sewer, reducing the impact of dissolved solids on effluent from the City's treatment plants and allowing more flexible outfall and reuse options.

Quinn P. Behnke, P.E.

Experience Summary

Quinn Behnke has more than 9 years of experience performing feasibility studies, detailed design, engineering services during construction, and field evaluation of mechanical systems in various industries. Quinn has worked on projects in the mining, food processing, oil and gas, beverage, and municipal sectors, with responsibility for mechanical system design, equipment selection, fluid analysis, and construction documentation. Quinn's technical focus is piping and fluid systems, including flow analysis, thermal stress calculations, pipe support design, equipment selection, and overall layout design.

Assignment

Resident Engineer

Education

B.S., Mechanical Engineering, University of Southern California, 2012

Registration

Professional Engineer 94228PE, Oregon, 2018

Professional Engineer 19110752, Washington, 2019

Certification

LEED Green Associate

CSI Construction Document Technologist

Training

Vivid Learning Systems, MSHA Surface Miner Training, 2017

Experience

9 years

Joined Firm

2018

Relevant Expertise

- *Engineering services during construction*
- *Surge analysis*
- *Fluid mechanics*
- *Pipe support design*
- *Mechanical equipment sizing and selection*

Durham FOG Tank Retrofit, Clean Water Services, Tigard, Oregon

Deputy Project Manager/Project Engineer. The FOG tanks at Durham AWWTF are in need of repair and the existing rock trap is leading to operations and maintenance issues. BC evaluated tank repair and replacement options, and designed two new stainless-steel storage tanks. BC included a new drum screen and lobe pump to streamline FOG receiving activities and relieve operational pressure on existing mechanical components. Quinn led the process mechanical design, and managed the entire design team to deliver a bid package that addressed the plant's concerns. Quinn lead the engineering services during construction, including attending weekly site walks to document compliance with contract documents and address technical questions.

Gresham Upper Bar Screen Replacement, City of Gresham, Oregon

Project Manager. The bar screens and washer compactors at the upper plant are at the end of useful life. BC sized and selected replacement equipment to address the high organics solids content of the plant's influent. Working closely with BC's Headworks SME, Quinn let the detailed design and managed the successful delivery of the bid package. Quinn assisted the City in managing the bidding process, and working through sequencing concerns to address key project elements to limit operational disruptions. Quinn is lead the engineering services during construction.

Durham Waste Gas Burner, Clean Water Services, Tigard, Oregon

Project Engineer. The digester gas system at Durham AWWTF was experiencing controllability issues, namely low pressures at the cogen facility and high pressures in the digesters. BC modeled the system and proposed the addition of a motorized butterfly valve in a bypass configuration to the closest waste gas burner pressure regulating valve. Quinn assisted with the modeling analysis and prepared design documents. Quinn led the engineering services during construction, and the successful installation has resulted in stabilization of digester gas system pressures, as observed through SCADA data. Quinn led the engineering services during construction.

HVAC Systems Replacement, Clark Regional Wastewater District, Vancouver, Washington

Project Manager. The rooftop HVAC equipment on Building 72 was at the end of useful life. BC sized and selected replacement HVAC units that meet the current energy code. Quinn managed the design on a tight budget and on an accelerated schedule. BC successfully submitted a bid package to streamline the cost outlay by the District. Quinn managed the engineering services during construction.

Boiler Gas Booster, Clark Regional Wastewater District, Vancouver, Washington

Project Manager. The two digester gas boilers at the Salmon Creek Treatment plant have been operating below their nameplate capacity. A study by Jacobs concluded that pressure losses within the digester gas supply piping contributed to lower boiler output. BC designed the addition of the centrifugal in-line gas blower to increase the digester gas pressure to increase boiler output. Quinn managed the design on a tight budget and on an accelerated schedule. BC successfully submitted a bid package to streamline the cost outlay by the District. Quinn managed the engineering services during construction.

DGCS Temporary Flare, City of Portland Bureau of Environmental Services, Portland, Oregon

Mechanical Engineer/Design Manager. BC led the design of a temporary digester gas flare for the Columbia Boulevard WWTP for the City. Quinn calculated anticipated pressure drop in temporary system using AFT Arrow, and specified the control valve and temporary flare system for prepurchase. Quinn oversaw the work of the electrical subconsultant and led design review workshops with the City. The design was executed on an accelerated schedule to meet coordination requirements with other digester gas projects.

Durham Grit System Rehab Evaluation and Design, Clean Water Services, Tigard, Oregon

Mechanical Engineer. The grit system at the Durham plant was in need of repair due to system age. Quinn reviewed wall thickness measurements and recommended a tiered piping replacement approach. The low pressure air end users have changed in the headworks building and Quinn led the evaluation of revised blower sizing and air distribution. Quinn summarized recommended improvements in a technical memo, and led the mechanical detailed design to incorporate improvements.

Effluent Thermal Load Reduction Evaluation, Metropolitan Wastewater Management Commission, Eugene, Oregon

Mechanical Engineer. Anticipated changes to the Willamette River temperature TMDL could affect permitting for MWMC plant effluent. To better understand sources of temperature increase in plant and possible mitigation options, BC evaluated the current effluent temperature and opportunities for temperature reduction. Quinn evaluated four heat recovery options, including heat recovery heat pumps for digesters and chiller installation. Quinn estimated mechanical equipment sizing and reduction in effluent temperature. Quinn summarized the evaluation and recommendation in a technical memo.

RTP Odor Control, Discovery Clean Water Alliance, Ridgefield, Washington

Mechanical Engineer. The Alliance decided to relocate an existing activated carbon odor control system from Salmon Creek Treatment Plant to Ridgefield Treatment Plant to control odors from headworks and aerobic digester. BC designed the relocation and installation of the new odor control system, with Quinn leading the process mechanical design. Quinn led the engineering services during construction.

Palo Alto Secondary Treatment Expansion, Palo Alto, California

Mechanical Engineer. BC led the design of an expansion to the secondary treatment system at City of Palo Alto. Quinn led the pipe stress analysis effort to check pipe stresses and pipe support loads for the main aeration air piping. Quinn led the coordination of reaction forces with the structural engineers. Quinn assisted in the development of pipe support design and expansion joint selection for the aeration air system.

J-124, Orange County Sanitation District, Fountain Valley, California

Mechanical Engineer. BC led the design of new digester gas piping, including compressor building and pressure letdown skids to expand digestion gas usage at the Orange County Sanitation District treatment plant. Quinn led the pipe stress analysis effort to check pipe stresses and pipe support loads. Quinn mentored a junior engineer in AutoPIPE software and led the coordination with the structural engineers. Quinn assisted in the development of pipe support design and expansion joint selection for the digester gas piping systems.

Solids Handling Feasibility Study, Portland Water Bureau, Portland, Oregon

Mechanical Engineer. The Bureau is evaluating solids handling options for a new filtration plant on the city's existing water supply system. BC was directed to evaluate both mechanical and non-mechanical solids removal technologies. Quinn assisted in the preliminary sizing of solar drying lagoons and sand drying beds to determine the feasibility of implementation based on available land area and projected filtration plant layout.

Austa M. Parker, PhD

Experience Summary

Dr. Austa Parker is the National Specialty Lead for Reuse Regulations and Policy at Brown and Caldwell. She has over 10 years of experience in the water reuse field working on reuse regulations and policy development, reuse process engineering, technology validations, master planning and source control programs. Austa is driven to collaborate with others to develop first-rate projects by utilizing her strong technical skills and enjoyment of connecting with other professionals and people to understand differing perspectives.

Assignment

Regulatory/Permitting Lead

Education

Ph.D., Civil Engineering (Specialization in Environmental Engineering), University of Colorado at Boulder, 2014

M.S., Civil Engineering (Specialization in Environmental Engineering), University of Colorado at Boulder, 2012

B.S., Chemistry, Clemson University, South Carolina, 2009

Registration

Engineer In Training (EIT), Environmental Engineering, Colorado

Experience

10 years

Joined Firm

2021

Relevant Expertise

- *Master planning*
- *Advanced Treatment Processes*
- *Pilot Plant Design and Planning*
- *Water Reuse Regulatory Development*
- *State and Federal Regulatory and Permitting Implementation*

Reclaimed Water Rule and Guidance Manual Review, LOTT, Washington

Project Engineer. The project included technical review of specific sections of the proposed rule and contribution to further regulatory guidance based on previous Title 22 experience. This included an extensive review of the draft regulations for reclaimed water for the state of Washington. The project team provided recommendations for improvements based on permitting, water quality, and treatment technologies. (2017)

Dublin San Ramon Services District (DSRSD) Potable Reuse Pilot Study, California

Technical Lead. Technical lead for the DSRSD Potable Reuse Study. Responsibilities included overseeing treatment train development options, preparing technical content for an advanced water purification pilot facility and providing input to the client on potential permitting pathways and meeting with state regulators to negotiate terms of the wastewater discharge permit.

Private Sector Food and Beverage Manufacturer, Twin Falls, Idaho

Project Engineer. Project engineer for a private sector food and beverage manufacturer in Idaho. Austa developed the performance test protocols for regulatory and non-regulatory water reuse and water quality targets and will lead field testing to demonstrate design and operational performance.

Public Works Integrated Master Plan, City of Oxnard, California

Project Engineer. Austa led the Title 22 indirect potable reuse permitting effort for membrane filtration, reverse osmosis, and ultraviolet light advanced oxidation facilities. Responsible for creating a test plan and working with State regulators for approval, developing an analytical sampling master plan, leading the wastewater sampling, Quantitative Microbial Risk Assessment (QMRA) and pathogen crediting process, analyzing performance data, writing the Title 22 permitting report, and coordinating and performing field work efforts.

Terminal Island Advanced Water Purification, City of Los Angeles Bureau of Sanitation, California

Project Engineer. Responsible for the permitting task, Austa developed a test plan for Title 22 compliance testing for State approval. She coordinated and performed permitting field work, conducted data analysis, and authored the permit report to submit to the State for Title 22 approval and operation.

Advanced Recycled Water Facilities, Santa Clara Valley Water District, San Jose, California

Recycled Water Technical Advisor. The project included providing technical advisory assistance for environmental, permitting, and operational components of advanced recycled water facilities, including microfiltration, reverse osmosis, and ultraviolet light processes. The project also included providing groundwater modeling and analysis needed to permit indirect

potable reuse projects and an analysis of the treatment and biological impacts of contaminants of emerging concern.

Direct Potable Reuse Treatment Options, Santa Clara Valley Water District, San Jose, California

Project Engineer. Austa was responsible for advising on Title 22 permit testing needed and piloting and full-scale testing of direct and indirect potable reuse treatment feasibility options, including microfiltration, reverse osmosis, and ultraviolet light processes.

Membrane Bioreactor for Pathogen Removal Study, Valley Water Company, La Canada Flintridge, California

Project Engineer. Austa performed investigative research to study the use of membrane bioreactors (MBRs) for pathogen removal in potable water reuse treatment trains. Specific tasks included field work for pathogen removal testing at two operating MBR facilities.

Potable Reuse-Specific Enhanced Source Control Program, City of Oxnard, California

Project Engineer. This project was a Title 22 permitting effort that included development of the State of California's first potable reuse-specific Enhanced Source Control Program. Austa's specific contributions included heavy involvement in developing the methodology and writing the plan to submit to the State of California for approval.

PureWater Colorado Direct Potable Reuse Demonstration, Denver Water Department, Denver, Colorado

Project Manager and Public Outreach Representative. Austa was responsible for both the engineering and outreach components for a non-RO-based demonstration project in collaboration with manufacturers and Denver Water. Austa led numerous tours of the PureWater Colorado Direct Potable Reuse Demonstration project and conducted many live and recorded news media interviews. She also recorded multiple YouTube and educational videos about advanced treatment for the pilot project.

WateReuse Colorado, Advancing DPR, Aurora, Colorado

Project Engineer. This project was focused on creating a framework for DPR regulatory development in Colorado and on public education and outreach about potable reuse across the state.

Operational, Monitoring, and Response Data from Unit Processes in Full-Scale Water Treatment, IPR, and DPR, Project Number 14-16, Water Environment & Reuse Foundation

Project Manager. Project tasks include gathering, sampling for, and analyzing pathogen and contaminant removal data from various advanced water treatment and reuse technologies. The information is used for subsequent quantitative microbial risk assessment analysis to predict performance and public health risk involving operations and monitoring failures for direct potable reuse treatment trains.

Quantitative Microbial Risk Assessment Analysis, Los Angeles Department of Water and Power, California

Project Engineer. Specific tasks included gathering plant performance data, analyzing for failure events, and interpreting results from a risk analysis simulation for the Tillman indirect potable reuse treatment facility.

Potable Reuse Research Study, City of Altamonte Springs, Florida

Project Engineer. Project engineer for a potable reuse research study on a non-reverse osmosis-based treatment train. Specific duties included assisting in development and technical review of the pilot test plan and providing technical recommendations regarding the ultraviolet advanced oxidation process.

Potable Reuse Projects – Regulations Governing, State of California

Contributor. Contributor to regulations governing potable reuse projects on a state level, based on prior knowledge of California state water reuse regulations. Specific tasks included overviewing and commenting on technology-based treatment requirements, operational storage and distribution, and use-based requirements.

Samantha Salvia, PE

Experience Summary

Samantha is a civil engineer with more than 18 years' experience in water resources project management, planning, and environmental compliance. Samantha combines a technical background in surface water and operations modeling with practical experience in water resource management issues. Her experience working in the public sector provides her an understanding of water agency and client perspectives. While a principal engineer at the Contra Costa Water District, Samantha led the District's $100 million capital project to build a new Delta intake from project planning through design. As a consultant, she provides clients with strategic guidance and oversees water resources planning efforts for complex, multi-benefit and multi-agency projects. Her work involves all aspects of water resources including groundwater, drinking water, wastewater, surface storage, and desalination. She especially enjoys helping clients navigate strategic planning and communication during project development to set projects up for successful implementation.

Assignment

Integrated Resource Planning Lead

Education

MS, Environmental Fluid Mechanics and Hydrology, Stanford University, 1999

BA, Philosophy, Politics & Economics, University of Oxford, 1998

BS, Civil Engineering, Old Dominion University, 1996

Registration

Professional Engineer 93962PE, Oregon

Professional Engineer 62425, California

Experience

23 Years

Joined Firm

2022

Relevant Expertise

- *Water Resources*
- *Planning*
- *Strategic Planning*

Wastewater Enterprise Regulatory Support, San Francisco Public Utilities Commission, City, California*

Regulatory Advisor. Provides ongoing strategic support on a variety of regulatory compliance issues as needed for the San Francisco Public Utilities Commission's (SFPUC) Wastewater Division. The SFPUC's combined collection system is unique in its size and complexity. The goal of this work has been to assist SFPUC management and staff in aligning internal plans for asset management and capital projects with external coordination with regulators. This has included developing communication pieces for discussions with regulators on the SFPUC's Long-term Pollution Control Plan and wet weather operations and working closely with SFPUC staff in evaluating regulatory compliance options.

Alternative Intake Project, Contra Costa Water District, California*

Project Manager. Project Manager for one of CCWD's largest capital projects, a $100-million water quality project to add a new drinking water intake in Sacramento- San Joaquin Delta. She was responsible for managing all elements of planning, design, permitting, public outreach, and land acquisition. The project included a 250 cfs intake and pump station, a large diameter pipeline, and tunnel. She directed a consultant team of over ten firms in addition to supervising CCWD staff. She formulated strategy and directed a legal team in land acquisition for the project. Samantha completed the two-year planning phase including project EIR/EIS and biological opinions in coordination with the U.S. Bureau of Reclamation while keeping the project on schedule and under budget. She managed the project through 50% design. The project began operation in July 2010.

Brackish Water Desalination Project, City of Antioch, California*

Staff Engineer. Samantha helped the City take this project from planning to construction and is serving as an extension of City Staff providing coordination and oversight on the City's most critical drinking water project. The City of Antioch's Brackish Water Desalination Project is being implemented to improve the City's water supply reliability and water quality utilizing existing infrastructure. Samantha reviews deliverables from the various consulting teams working on the project (environmental, water resources, design, and permitting), represents the City at meetings with regulatory and funding agencies, directs analyses related to Delta hydrology and water quality, and assists City staff in successfully keeping this critical Delta project on schedule. Construction started in February 2021.

Drinking Water System Permit and Well Replacement, Darling Ingredients, California*

Permitting Lead. Samantha led the preparation of a Non-Transient Non-Community (NTNC) water system permit for their Crows Landing, California facility. The project evolved when routine sampling revealed a production well required replacement. Samantha was task lead in preparation of the permit application and coordination with County regulators. She provided guidance to the client in developing a compliance strategy and coordinated handoff to the well replacement team.

Harvest Water Program, Regional San, Sacramento, California*

Groundwater Accounting Framework Task Lead . Samantha is coordinating with South American Subbasin Groundwater Sustainability Planning efforts to ensure Harvest Water is appropriately incorporated into the GSP and that its groundwater and ecosystem benefits will be realized. She is leading developing of a groundwater accounting of the $373 million program's recycled water supplied for in-lieu recharge. Regional San is developing Harvest Water to provide a safe and reliable supply of tertiary-treated recycled water for agricultural uses, reduce groundwater pumping in the region, and support habitat protection and enhancement efforts. Water produced by the program will be used to irrigate up to 16,000 acres of agriculture and habitat lands in Sacramento County near the lower Cosumnes River and Stone Lakes National Wildlife Refuge.

Merced Subbasin Groundwater Sustainability Plan, Merced Subbasin Groundwater Sustainability Agencies, Merced County, California

Project Coordinator. Samantha and her team managed GSP implementation for the overall subbasin, which includes organizing and facilitating GSA and stakeholder coordination meetings, pursuing of grant funding, developing plans to address data gaps and assess ongoing groundwater consumptive use, and supporting development of an allocation framework and demand reductions. As Project Coordinator, Samantha oversaw all the activities necessary to complete and submit a DWR-compliant GSP for the critically over-drafted Merced Subbasin by January 31, 2020. Samantha has successfully helped the basin bring in more than $5M in grant funding to support GSP implementation. The goal of the GSP is to put the subbasin on a path to achieving sustainability by 2040.

North Valley Regional Recycling Program, City of Modesto, City of Turlock, Del Puerto Water District, California

Project Manager. Project Manager for phase 2 of a Title XVI feasibility study for the North Valley Regional Recycling Program. The Program is a regional solution to address California's water crisis by making tertiary-treated recycled water available to the drought impacted west side of Stanislaus, San Joaquin, and Merced Counties for farmland irrigation. It builds on a feasibility study that evaluated delivery and conveyance alternatives for recycled water in the DPWD service area. The study evaluated the timing and availability of recycled water, conveyance options, and necessary institutional agreements and environmental requirements including assessing water rights and performing environmental studies. The third and fourth phases of the Program included completing a joint EIR/EIS, completing conceptual level engineering development, completing a joint NPDES permitting, completion of recycled water rights, local and elected officials outreach, and funding support, including pursuit of state grants and a State Revolving Fund loan.

Shasta Lake Enlargement Environmental Planning Assistance, U.S. Bureau of Reclamation, Mid-Pacific Region, California

Project Role. U.S. Bureau of Reclamation, CA - Mid-Pacific Region, Shasta Lake Enlargement Environmental Planning Assistance. Technical Reviewer responsible for providing technical support and analysis related to water supply and water quality downstream of the reservoir. The project included assisting with environmental planning for the Shasta Lake Water Resources Investigations (SLWRI). The main project features would consist of a dam raise of 6.5 to 18.5 feet and the relocation of numerous recreational and other facilities surrounding Shasta Reservoir.

Central Valley Drinking Water Policy Workgroup, California Urban Water Agencies, City, California

Project Role. As Author and CUWA representative, took a lead role in the group and was the main author of a drinking water policy resolution adopted by the Regional Board in July 2004. The Central Valley Drinking Water Policy Workgroup was formed to help Regional Water Quality Control Board Staff develop and implement a workplan for conducting technical studies necessary to prepare a drinking water policy for the Central Valley.

Elliott Mecham, PE
Engineer (Geotechnical)

Education:
MS, Civil Engineering, University of Texas at Austin - 2001
BS, Civil Engineering, Utah State University - 1999

Registrations:
Professional Engineer-Civil, OR, 77330

Professional Summary:
Elliott has more than 20 years of experience in geotechnical engineering. He has participated in or managed geotechnical work in all phases of water, wastewater, and conveyance projects, including facility siting studies and conceptual engineering, predesign, preliminary and final design, preparation of construction drawings and technical specifications, construction observation and special inspections, and dispute resolution during construction closeout and post-construction activities. His experience includes geotechnical design for new recycled water treatment plants; shafts and intakes including manholes, and caisson and reinforced slurry wall shored systems up to 140-foot-diameter and up to 165 feet deep; water reservoirs for partially and completely buried reservoirs; and trenchless crossings. He has experience working for cities, industrial clients, and agencies of all sizes, including the City of Bend, Madras, and the Dalles. Through these projects, Elliott has successfully worked with Brown and Caldwell and many of the area's leading civil engineering firms in the water/wastewater sector.

Project Experience:
City of Bend Watershed Sourcewater Improvements | Bend, OR (2012-2015)
Elliott was a project engineer for this project. This project is a design-build project that consists of a 10-mile-long new 36-inch raw water conduit, improvements for the existing intake and diversion dam, two new pipeline crossings, a new hydropower plant, and a new filtration treatment plant. Shannon & Wilson conducted a geotechnical investigation for the design and construction of these new facilities. The geological challenges include highly variable subsurface conditions (very dense glacial till, volcanic tuff deposit and shallow bedrock), embankment stability, seismic hazards, shallow groundwater near intake and at creek crossings, and large diameter boulders. The field investigations included approximately ninety test pits, large-diameter auger bores, deep soil/rock borings, in-situ plate load test and pressure meter test, and geophysical testing. The geotechnical engineering evaluations included slope stability analysis, seismic fault hazards, foundation design for the power plant and treatment plant, creek crossing design, trench dewatering; preparation of geotechnical reports; and review and preparation of plans and specifications.

City of Corvallis Wastewater Reclamation Plant Secondary Clarifiers | Corvallis, OR (2013-2014)
Elliott was the project manager and lead geotechnical engineer for the Corvallis Wastewater Reclamation Plant expansion project, which included providing foundation recommendations for a new bio-solids tank and two new secondary clarifiers. The project also involved providing the seismic design criteria for the structures and an evaluation of potential seismic hazards, construction considerations, and underpinning of existing utility corridors adjacent to proposed excavations. Because the clarifiers are to be constructed approximately 20 feet below grade, we also provided recommendations for temporary shoring and dewatering. Elliott's geotechnical recommendations were provided to Brown and Caldwell's structural engineer to help design the clarifiers.

Confidential Technology Client Recycled Waste Facility | Hillsboro, OR (2013-2019)
Elliott was the project manager. Shannon & Wilson provided geotechnical recommendations for the recycled water facility, which consisted of numerous buildings, basins, storage tanks, and pump stations on an approximately 14-acre site. The project also included manholes and over 2,000 linear of wastewater pipeline to connect the pump station to the treatment plant area. We provided geotechnical recommendations for structures and pipelines and performed construction observations of the geotechnical work and compaction of the backfill to confirm that the construction was performed in accordance with the geotechnical recommendations. The design build project allowed the client to significantly reduce their water consumption by reusing the water multiple times through their manufacturing process. Elliott was involved with the project from the pre-design phase through final construction.

City of the Dalles Wastewater Treatment Plant | The Dalles, OR (2015-2019)
Elliott was a project engineer. This was a progressive design-build project for new headworks, screening, and vortex grit structures; a secondary digester clarifier and digester equipment building; miscellaneous yard piping and a pump station retrofit. Geotechnical services included a detailed background study, field explorations, foundations engineering analysis and recommendations, and preparation and input into 60% and 80% level drawings, Division 2 technical specifications, constructability issues, and construction observations.

Awbrey Butte Distribution Improvements Project | Bend, OR (2022-Ongoing)
Elliott is the project manager. The City of Bend's Awbrey Butte Waterline Improvement Project includes nine interrelated water distribution system subprojects. All nine projects will address current capacity issues, increase capacity for future growth, upsize existing aging pipes, increase/improve fire flow availability, and provide new transmission pipe for hydraulic performance. As a subconsultant on the project, Shannon & Wilson is providing geotechnical engineering services including field explorations, laboratory testing, trenchless feasibility assessments, characterizing the depth and hardness of rock, and geotechnical plan and specification support for the proposed improvements.

City of Madras J Street Bridge Expansion | Madras, OR (2022-Ongoing)
Elliott is the project manager. Shannon & Wilson provided a pre-construction wave equation analysis for the pile driving at the proposed J Street Bridge Expansion in Madras, OR. Project specifications indicated that the J Street Bridge is supported on two bents, consisting of 11 piles per bent. Due to the uncertainties in the depth of rock, the project specifications required two different sets of wave equation parameters to be used in the analysis. The analysis performed by Elliott helped verify that the pile driving hammer being mobilized to the site was appropriately sized, and that the piles were driven to an adequate blow count to achieve the required resistances.

City of Salem Wastewater Treatment Plant Hydraulic Improvements | Salem, OR (2021-2022)
Elliott was the project manager. Willow Lake Water Pollution Control Facility in Keizer, Oregon treats the majority of the City of Salem's sewage. The City of Salem evaluated modifications within their plant to increase hydraulic capacity. Improvements included a new 375-foot long, 42-inch diameter pipeline from the primary pump station to the aeration basin. The proposed pipeline will be constructed of welded steel and the pipe invert will be ~5.7 to 7.7 feet below ground surface. As a subconsultant to Brown & Caldwell, Shannon & Wilson evaluated subsurface conditions and subsoil properties, including the potential for encountering groundwater, provided design recommendations for support of the pipeline design, and provided geotechnical construction considerations/recommendations for earthwork including site and subgrade preparation, excavation, pipeline backfill materials, and fill placement and compaction.

Matthew G. Banton

Matt brings a large array of experience over 18 years of field and office surveying. With a strong understanding of both public and private sector surveying and project management, he offers a comprehensive knowledge base to tackle any challenge. Prior work on large government sites such as the Portland Air National Guard Base, Redmond and Prineville Airports, and overseas work on US Embassy and Consulate projects for Overseas Building Operations gave him the experience needed to help a client succeed no matter what the project entails. Further survey and project management work includes large solar farms in Eastern Oregon and Central Oregon, dozens of road construction and reconstruction projects in Oregon and Washington, and countless private sector jobs for clients all over the Pacific Northwest.

Matt earned his Professional Land Surveyor's License in early 2021 and became a partner in Povey and Associates that same year. His professional credentials combined with his bachelor's degree in Land Surveying/Geomatics establishes a background of dedication to his craft. In addition to his surveying career, he dedicates countless hours to youth development and community service through leadership in the Boy Scouts of America program, where he earned his Eagle Scout rank as a youth.

Experience

US State Department ~ Overseas Building Operation

- Mapping and Boundaries for design and planning in Saudi Arabia, Indonesia, and Mozambique
- United States Embassies and Consulates Mapping

Port Work – Oregon and Washington

- Redmond Airport, RW 11-29 Topo, Taxiway F (Forest Service Air Base) Reconstruction
- Shipping, Railyard, and Airport mapping and boundaries
- Port of Portland – Portland Airport and Oregon Air National Guard Base
- Port of Longview, WA (shipping port)
- Port of Vancouver, WA (shipping port)
- Port of Tacoma, WA (railyard/shipping port)
- International Terminal, Newport, OR (shipping port/ocean research base)
- Redmond International Airport – Taxiway B Reconstruction
- Grant County Regional Airport, John Day, OR – Taxiway C Reconstruction/Runway Improvements

Email: mattb@poveysurvey.com Phone: [illegible]8-6778 P.O. Box 131 Redmond, OR 97756

Government/Large Commercial Construction & Mapping Work

- University, High School, Municipal projects
- Bridge lifting projects along Oregon Interstate 5 corridor
- Phil Knight Cancer Research Facility in Portland, OR
- OHSU Hospital mapping and construction projects in Portland, OR
- Bend North Sewer Interceptor project (preliminary layout/design processes)
- Facebook Data Farms – Prineville, OR – Transmission lines and substation construction layout

Subdivision/Resorts

- Multiple Subdivision Plats in Portland and Central Oregon areas (platting, mapping, topographic surveys, construction)
- Large Multi-Phase Resorts, Central Oregon & Portland areas (platting, mapping, construction)
- Golf Course Development and Construction including Pronghorn Resort, Tetherow, Brasada Ranch, Eagle Crest Resort, Caldera Springs, Sunriver Resort
- Shumway Road Realignment Safety Project – Brasada Ranch, Powell Butte, OR (construction)

Conservation/Watershed Projects

- Sandy River Conservation Boundary, Sandy, OR – Portland Water Bureau
- US Forest Service, Northern Washington region – Small streams and dams management project
- Warm Springs National Fish Hatchery - In-water/dam mapping and surveying for sedimentation removal project

Solar Farm Development ~ Mapping, Boundary, ALTA, and Construction

- Powell Butte Solar Field (SunPower) – 360 Acre Solar Farm (construction)
- Cypress Renewables Solar Site on Neff Road in Bend, OR – 80 Acre Solar Farm (mapping, ALTA, boundary, construction)
- Hamby Road Solar Field, Bend, OR – 80 Acre Solar Farm (mapping, ALTA, boundary)
- Fort Rock/Alkali Solar Farm, Fort Rock, OR – 200 Acres (construction)
- Rock Garden Solar Farm, Fort Rock, OR – 200 Acres (construction)
- Starvation/West Hines Solar Farm, Hines, OR – 200 Acres (construction)
- Riley/Suntex Solar Farm, Riley, OR – 200 Acres (construction)

City Manager Update to Council

Council Meeting September 27th, 2022

Public Safety / Dispatch

The Police Department and Dispatch are still recruiting for a couple of vacancies. Hiring laterals is very competitive especially now, because new recruits have to go through Department of Public Safety Standards & Training (DPSST) which has a six month waiting list to attend.

Public Works

Public Works is still very busy around town wrapping up projects for the season. We have also been informed that the city is receiving a couple of awards on our Aquifer Storage and Recovery (ASR) facility. On October 12th at 10:00 A.M. there will be a grant award announcement for the Ochoco Preserve project that will be connecting the preserve to our city wetlands. All are invited to attend.

Rail Road

This week Admyrd, LLC. from FT. PIERCE Florida utilized the equipment ramp to load a 100 ton crane to Texas. This is an unusual move for the railroad that we collected both a haulage fee and ramp fee for the use of the track. The Railroad is in a good position for heavy, oversize moves like this as we've worked hard the last several years to bring our bridges up from a 289,000 lb. capacity to a higher rating of 315,000 lbs.

On Wednesday Matt had the first on site meeting with Oregon Heritage Rail Museum regarding the time line for the removal of the SHAY. Ideally the Museum would like to have it delivered to Portland sometime in October, weather permitting…..remember the SHAY weighs 90 tons. Currently the SHAY is due for a 15 year tri-annual that requires a complete disassembly and boiler ultrasound to verify boiler and pipe thickness. Their goal is to have the locomotive delivered and inspection completed so they can offer Christmas excursion runs between OMSI to OAKS Park in December of this year. Ambitious goal and Matt will report back once we know more about the move and date it will happen.

Meadow Lakes Golf

Meadow Lakes continues to remain busy and has already starting reducing seasonal employees in preparation for winter months. Councilor Uffelman, Zach and myself met this last week to discuss potential upcoming improvement and maintenance projects. We will be reporting on the list to Council very soon.

Airport

Activity remains strong at the airport especially with the Bend Airport being closed for upgrades.

Planning

Nothing has slowed down for the Planning Department as development continues at record pace.

Human Resources – No Report.

Information Technology – No Report.

Finance

The Finance Department and City received the Certificate of Achievement for Excellence in Financial Reporting for the 6th consecutive year. This is the highest honor award the city can receive. Lori Hooper, Finance Director submitted the award materials solo for the first time since taking on the Finance Director position and didn't miss a beat with the transition! This is a good example of how well our succession planning is paying off. Please welcome Kyle Hodnett to our city team who will be starting on Monday as our new lead utility clerk.

City Recorder/Risk Management

We are pleased to announce that we will be receiving a $12, 276 dividend back from SAIF (our Worker's Comp carrier), which is an extra bonus in addition to our rates dropping at renewal time. This has resulted in even more savings over last year.

City Legal – No Update

EDCO – No Update

Public Relations – No Update

Mayor/Council

Reminder that Council has a retreat/workshop scheduled for Wednesday, September 28th beginning at 5:30 P.M.

Other

October 14th there will be a Work Force Training Program kick off. This will be a Chamber Perk event at Meta's Building H, No. 5, 6 at 8:00 A.M. Training will be focused on opportunities for construction, IT, health care and many other fields. For those who successfully complete the training, they are guaranteed a job after the program.

The Meta grants application cycle is now open for non-profits to apply.