CITY OF BONNEY LAKE
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CROSS CONNECTION CONTROL

What is a 'cross connection'? A cross connection is a permanent or temporary piping arrangement between a potable (safe to drink) water system and a non-potable (not safe to drink) system. This connection can be created when plumbing is installed, when using certain appliances, or even simply by attaching a hose to a faucet. Cross connections are not always easy to discover, and can pose a serious threat to water quality.

What can go wrong? Water pressure in a building's plumbing can suddenly drop for a number of reasons. If the shower, clothes washer, dishwasher, or other water-using appliances are all using water at once, the pressure can drop. If there is high water use in the neighborhood, such as from firefighting or a water main break, the pressure in your building may drop. When water pressure suddenly changes, contaminated water can be siphoned back into your plumbing system through unprotected cross connections.

Where are cross connections found?

Cross connections can be found anywhere in a public water supply. Some examples of common cross connections:

- *Swimming pool or hot tub is filled with a garden hose submerged in the water, pool water can be sucked up the hose into the water supply.*
- *A chemical dispenser, insecticide or herbicide dispenser is attached to a hose bib, a pressure drop can cause chemical laden water to be pulled into the drinking water supply.*
- *If an irrigation sprinkler system lacks a proper backflow device, dirty water from the lawn can be siphoned back into the sprinkler head, and flow back into the water supply.*

Be aware of situations where your water supply does or could contact non-potable liquid and make sure any plumbing work is permitted and done by a licensed plumber who is knowledgeable in cross connection control. If you have questions regarding the Cross Connection Control Program, or have not received your annual inspection notification, please contact us at (253) 447-3227.

HOW TO SAVE ON WATER AND SEWER BILLS:

Both Water and Sewer charges are based on how much water you use. To save money on both, the following water conservation suggestions are offered for residential customers. It is important to minimize both daily water consumption quantity and to minimize water use during peak water use hour periods. You can find additional water conservation tips at www.wateruseitwisely.com.

INSIDE YOUR HOME

* Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
* Shorten your shower by a minute or two and you'll save up to 150 gallons per month.
* Install an instant water heater near your kitchen sink so you don't have to run the water while it heats up. This also reduces energy costs.
* Put food coloring in your toilet tank. If color seeps into the toilet bowl without flushing, you have a leak. Replacing the flapper valve can save up to 1,000 gallons a month.
* Know where your master water shut-off valve is located, just in case you have a water leak issue. Try it once a year to make sure it works. This could save water and prevent damage to your home.

OUTSIDE YOUR HOME

* Use a hose nozzle or turn off the water while you wash your car. You'll save up to 100 gallons every time.
* Limit grass watering to no more than three times a week with 10-15 minutes per sprinkler zone.
* Spreading a layer of organic mulch around plants retains moisture and saves water, time and money.
* Use drip irrigation for shrubs and trees to apply water directly to the roots where it's needed.
* The City's customer peak demand periods for water are just before and after sunrise. We encourage customers to do the following: avoid watering grass and gardens during the day when most evaporation occurs; automated sprinkler systems should be set to use water in the late evening or very early in the morning hours.

WATER USE EFFICENCY

The total amount of water loss for 2021 was 6.1%. For more information or to view the actual report go to www.citybonneylake.org/publicworks/water/WaterUseEffiecicyReport.

NEW IN 2021

Water Capital Improvement Project

TACOMA POINT WATER RESERVOIR REPLACEMENT

Tacoma Point Water Reservoir Stats:

	New Reservoir	Old Reservoir
Tank Capacity:	3.5M MG	1.1MG
Tank Height:	126ft (135ft peak)	100ft
Tank Diameter:	70ft	44ft
Tank Overflow Elevation:	760ft	738ft
Seismic Design Retrofit:	Yes	No
ShakeAlert System:	Yes	No

The Tacoma Point Reservoir Replacement Project will replace a 40 year old tank that no longer meets the demands for the City's north water service area and does not meet earthquake safety requirements. The planning and design of the new tank was started in 2020. Completion of the new tank is planned for October 2022.

WATER SYSTEM OPERATIONS

The City of Bonney Lake maintains nearly 218 miles of water mains and 1,798 fire hydrants within the Bonney Lake water service area. In 2021 the Public Works Operations Division provided safe, quality water to 13,170 single family households, 331 multi-family residential connections, 216 commercial accounts to an estimated population of 38,648 water consumers, with a high degree of reliability. The City water system produced over 1.33 billion gallons of water with the peak production month of July when 206 million gallons were produced. In 2021 the quantity of water consumed averaged 32,900 gallons per person which equates to 90 gallons per person per day.

2022 WATER CONSUMPTION CHARGES

Water consumption is recorded by water meters in cubic feet (7.48 gallons = 1 cubic foot). Water meters are read in hundreds of cubic feet (CCF). 1 CCF = 748 gallons

Consumption Rates for Customers Inside City Limits:

Winter

0 -10 CCF per month	$1.80	= $0.24 per 100 gallons
Over 10 CCF per month	$3.57	= $0.48 per 100 gallons

Winter rates will be reflected on bills covering October 1st through May 31st

Summer

0 -10 CCF per month	$1.80	= $0.24 per 100 gallons
11-20 CCF per month	$3.90	=$ 0.52 per 100 gallons
21-30 CCF per month	$5.45	= $0.73 per 100 gallons
31 or more CCF per month	$7.02	= $0.94 per 100 gallons

Summer rates will be reflected on bills covering June 1st through Sept 30th

Consumption Rates for Customers Outside City Limits:

Winter

0 -10 CCF per month	$2.60	= $0.35 per 100 gallons
Over 10 CCF per month	$5.21	= $0.73 per 100 gallons

Winter rates will be reflected on bills covering Nov 1st through June 30th

Summer

0 -10 CCF per month	$2.60	= $0.27 per 100 gallons
11-20 CCF per month	$5.45	= $0.73 per 100 gallons
21-30 CCF per month	$7.65	= $1.02 per 100 gallons
31 or more CCF per month	$10.69	= $1.43 per 100 gallons

Summer rates will be reflected on bills covering July 1st through Oct 31st

Note: Current City of Bonney Lake utility rates can be found at: www.citybonneylake.org/section_government/departments/executive/finance_utility_billing.shtml

2021 WATER QUALITY REPORT

BONNEY LAKE'S WATER SOURCE

Nine million gallons per day (MGD) of the City of Bonney Lake's drinking water is supplied by groundwater pumped from springs at Victor Falls and Grainger Springs, and well water from our Tacoma Point and Ball Park sites. Additionally, we have water supply agreements to receive another four MGD from Tacoma Public Utility (TPU). Throughout our water system, we have over 20 million gallons of water in reservoirs.

A Source Water Assessment has been performed for our area to provide baseline data about the quality of water before it is treated and distributed to customers. This is important because it identifies the origins of contaminants within our area and indicates the susceptibility of our water system to such contaminants.

To ensure that the tap water is safe to drink, the U.S. Environmental Protection Agency, through the Safe Drinking Water Act (SDWA), prescribes limits with substantial safety factors on the amount of certain contaminants in water provided by public water systems.

To ensure safe, high quality water, the Public Works Operations Division (PW-OPS) continuously monitors and samples the water quality. During the 2021 calendar year, PW-OPS took 480 routine bacteria samples, 5 bacteria samples to test new connections, and 38 engineering samples. Operators also took 16 sets of Disinfectant By-Products samples, and 8 samples for full inorganic chemicals. An independent certified laboratory tests these samples to ensure the safety of your drinking water. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safety Drinking Water Hotline (800-426-4791) or visit their website at www.epa.gov/safewater/sdwa/index.html.

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides (synthetic organic chemicals), which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses. Of the 93 synthetic organic chemicals tested, no contaminants were detected.
- Organic chemicals, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum products, can also come from gas stations, urban storm water runoff and septic systems. We test for volatile organic chemicals every three years.
- Radioactive contaminants, while unlikely, can be naturally occurring or be the result of oil and gas productions and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. No radioactive materials were detected in Bonney Lake's water.

LEAD IN DRINKING WATER

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Bonney Lake is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

SPECIAL HEALTH CONCERNS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons include, but are not limited, to persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. The EPA/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791). If these issues are noticed on a regular basis, you can contact the Public Works Operations office at (253) 447-3101 for more information. The primary sources of disease causing organisms will be from pets, food, general household cleanliness and personal hygiene. The risks of infection by Cryptosporidium or Giardia in your water supply are remote, as these organisms are not typically found in ground water sources such as those that supply the City of Bonney Lake system.

CHLORINE DISINFECTION

Chlorine is added to Bonney Lake's water as a disinfectant to protect consumers from possible disease causing microorganisms.

- Chlorine Residuals. The state mandates a minimum chlorine residual level of 0.2 parts per million (ppm) throughout the water distribution system.
- Chlorine Disinfection By-Products. When chlorine combines with organic material, it will form chlorine by-products known as Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). Systems with high amounts of organic material usually draw their water from surface water sources, such as rivers and lakes. Our water sources are groundwater sources, such as wells and springs. We typically have low amounts of organic material in our water therefore having low amounts of disinfection by-products.
- Sodium Hydroxid. The Tacoma Point Wells and Grainger Springs water supplies are treated with sodium hydroxide to raise the pH of the water, in effect making it less corrosive to plumbing fixtures. This minimizes the potential of exposure to lead or copper in your drinking water.

COMMON WATER QUALITY ISSUES

Cloudy or White Water

On occasion, there may be a chlorine odor or temporary milkiness to the water (the milky appearance is caused by nitrogen or air in the water supply source). This is not a health hazard. If you pour the water in to a glass and let it sit for a minute the cloudiness will clear from the bottom upwards. This is most likely to occur from July through September.

Brown Water

Brown or reddish brown water comes from internal pipe rust and sediment getting stirred up, possibly from a fire hydrant being used or a sudden change in the direction of flow. This is not a health hazard. We recommend customers wait until it clears before drinking it. The water should clear on its own. Try running the cold water for a few minutes to see if it is clearing or still discolored. If the water does not clear up, let the water sit for an hour. Then run the water for a few minutes and flush the toilet a couple of times.

2021 TEST RESULTS

The water quality table below shows substances we detected in our water system as well as the water we purchased from Tacoma Public Utilities.

Substance	MCL	Highest Level Detected	Range of Detection	MCL Violation	Potential Source
REGULATED AT THE GROUND WATER SOURCE					
Nitrate	10 ppm	4.71* ppm	<0.20 - 4.71* ppm	No	Septic Systems, Agricultural uses
Hardness	NA	136.0 ppm	84.0 - 136.0 ppm	No	Erosion of Natural Deposits
Sodium	NA	14.2 ppm	6.9 – 14.2 ppm	No	Erosion of Natural Deposits
REGULATED IN THE TREATMENT PLANT					
Fluoride*	4 ppm	.89* ppm	0 - 0.89 ppm*	No	Treatment Additive
Turbidity	5 NTU	0.070 NTU *	<0.013-0.070 NTU*	No	Soil Erosion, Pipe Sediment
EPA UNREGULATED CONTAMINANT MONITORING					
Manganese	50 ppb	<10 ppb	<10 ppb	N/A	Naturally occuring
Chloroform	N/A	11.1ppb	ND - 11.1ppb	N/A	Industrial contamination
Iron	N/A	<0.1ppm	ND - <0.1ppm	N/A	Natural, corrosion
REGULATED IN THE DISTRIBUTION SYSTEM					
*Chlorine	4 ppm	1.90 ppm*	0.39 - 1.90 ppm*	No	Treatment additive
*Haloacetic Acids	60 ppb	9.8 ppb*	ND – 9.8 ppb*	No	Byproduct of Disinfection
*Total Trihalomethanes	80 ppb	24 ppb *	1.32 - 24 ppb*	No	Byproduct of Disinfection

REGULATED AT THE CONSUMERS TAP

Substance	Action Level	90th Percentile	Samples above AL	Regulation Met	
***Copper	1.3 ppm	0.92 ppm	0 of 33 sites	Yes	Corrosion of household plumbing; Erosion of natural deposits
***Lead	0.015 ppm	0.007 ppm	0 of 33 sites	Yes	Corrosion of household plumbing; Erosion of natural deposits
Total Coliform	<5% positive	0.00%	0 of 480 sites	Yes	Naturally present throughout the environment

*** Lead and Copper Results From 2020 Monitoring. Required Every 3 Years

Key to Table

MCL = Maximum (allowable) Contaminant Level set by the federal government ppm = Parts per million

ppb = Parts per billion

AL = Action Level

Umhos/cm = micromhos per centimeter

NTU = Nephelometric Turbidity Unit (Water Clarity)

EPA = Environment Protection Agency

WA DOH = Washington State Dept of Health

ND = Not Detected

* Tacoma Supplied Water Sample

******A neurotoxin produced by a certain species of cyanobacteria (formerly known as blue green algae). Cyanobacteria are sometimes found in surface water when conditions favor growth and formation of algal blooms.

CITY OF BONNEY LAKE WATER AVAILABILITY

Victor Falls	1,100 gpm (gallons per minute)
Grainger Springs	1,500 gpm
Ball Park #1	1,000 gpm
Ball Park #2	270 gpm
Tacoma Point. #2, #4, #6	2,300 gpm
Total Owned by City	6,170 gpm = 8,884,800 gpd (gallons per day)
Tacoma Water/Cascade Water Alliance Agreement	2,178 gpm = 4,000,000 gpd
Total Water Available	8,348 gpm = 12,884,800 gpd