2018 Water Quality Report

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"The City of Bonney Lake's mission is to protect the community's livable identity and scenic beauty through responsible growth planning and by providing accountable, accessible and efficient local government services."

City of Bonney Lake
2018 Water Quality Report

Greetings from Mayor Johnson:

Mayor Neil Johnson

Happy Spring 2019!

I am happy to report that in 2018 the City of Bonney Lake continued to produce a safe and reliable supply of drinking water, which is fundamental to the high quality of life we all like to enjoy. You will note from this annual report that your drinking water continues to meet and exceed the required standards set by the U.S. Environmental Protection Agency (EPA). This "Consumer Confidence Report" is required to be sent to all our customers each year, by the EPA, through the Safe Drinking Water Act (SDWA). Over the last number of years, the City has also been proactive in working with neighboring cities, Tacoma, and the Cascade Water Alliance to assure an affordable and reliable water supply for the next 30+ years.

This report is only one of many means the City uses to communicate with you. Other sources include our NEW quarterly publication called *myBonneyLake*, which is mailed to all homes within our water district. In addition, other methods to communicate is my weekly Inside Out newsletter, Facebook and Twitter pages (@CityBonneyLake), website (www.ci.bonney-lake.wa.us), and periodic inserts within your utility bill.

Like last year, we will have a variety of events this spring and summer, including our Tunes at Tapps plus Outdoor Market, which is every Wednesday starting July 10 through August 21 and Bonney Lake Days on August 16-17. Hope you can find time to catch one of our many events.

Should you have any questions or comments about this report, feel free to contact our staff at (253) 447-3227 or ronscavageu@cobl.us.

Water System Operations

The City of Bonney Lake maintains nearly 219 miles of water mains and 1,754 fire hydrants within the Bonney Lake water service area. In 2018, the Public Works Operations Division provided safe, quality water to 12,816 single family households, 334 multi-family residential connections, 202 commercial accounts to an estimated

population of 37,500 water consumers, with a high degree of reliability. The City water system produced over 1.3 billion gallons of water with the peak production month of August when 211 million gallons were produced. In 2018, the quantity of water consumed averaged 31,387 gallons per person which equates to 86 gallons per person per day. July 17 was the highest day of the year for water consumption when the total consumption for the day was 7.8 million gallons. This is the equivalent of each person within the water system using 205 gallons. This is 138% higher consumption than the annual consumption (86 gal/day/person), and 236% higher than the consumption during winter months (61 gal/day/person).

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**

New in 2018

Water Capital Improvement Projects	Total Costs

1. **SCADA System Upgrades Phase 4 & 5** $133,805
   Phase 4 of this project completed the communication upgrades at Lakeridge Booster Station and Reservoir; Ball Park Wells and Treatment Plant; and Pinnacle Estates Booster Station. Phase 5 kicked off in 2018 with the purchase of the hardware and software to replace the obsolete systems at the City's central SCADA location.

2. **Lake Tapps Flume Trestle Repair Project Design** $88,815
   This effort repaired the trestle over the Lake Tapps flume. This trestle supports the water and sewer mains from Inlet Island to Vandermark Drive. This project was completed in 2018.

3. **Tacoma Point Wells Emergency Generator Replacement** $113,300
   This project replaced the 50+ year old generator at Tacoma Point Wells with a new efficient diesel generator with an automatic transfer switch to provide power to the wells and treatment systems during power outages.

4. **Tacoma Point Wells Rehabilitation Project** $204,412
   Due to declining yields from the aquifer, all three wells at Tacoma Point were pulled and rehabilitated. During the inspections of the pumps and motors, it was also determined that the pump and motor for Well #2, as well as the pump for Well #6, needed replacing. The project was completed early in 2019 due to delays associated with these replacements.

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 2018 calendar year, PW-OPS took 480 routine bacteria samples, 9 bacteria samples to test new connections, and 43 engineering samples. Operators also took 12 sets of Disinfectant By-Products samples, and 5 samples for full inorganic chemicals. An independent certified laboratory tests these samples to ensure the safety of your drinking water.

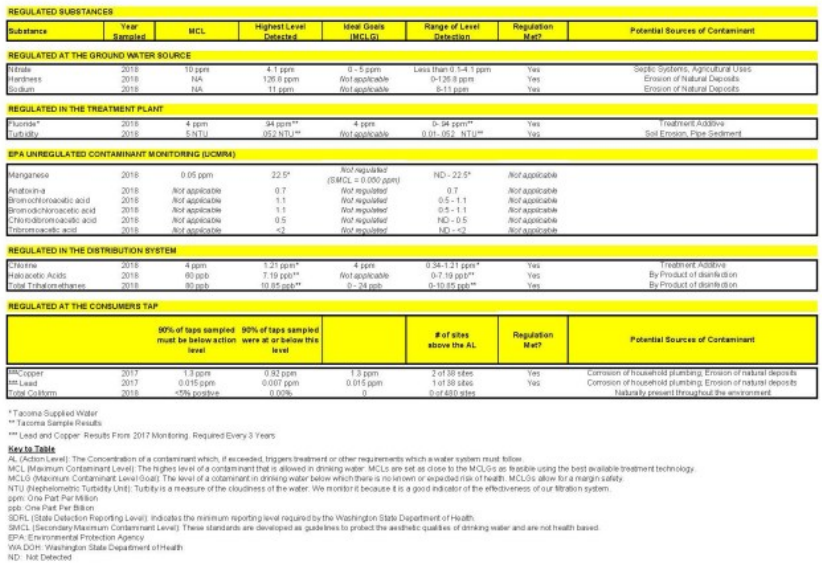
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by 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 production 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.

2018 Results

The water quality table below (click image to view larger) shows substances we detected in our water system as well as the water we purchased from Tacoma Public Utilities.



REGULATED SUBSTANCES

Substance	Year Sampled	MCL	Highest Level Detected	Ideal Goals (MCLG)	Range of Level Detection	Regulation Met?	Potential Sources of Contaminant
REGULATED AT THE GROUND WATER SOURCE							
Nitrate	2018	10 ppm	4.1 ppm	0 - 5 ppm	Less than 0.5-4.1 ppm	Yes	Septic Systems, Agricultural Uses
Hardness	2018	NA	126.8 ppm	*Not applicable*	0-126.8 ppm	Yes	Erosion of Natural Deposits
Sodium	2018	NA	11 ppm	*Not applicable*	8-11 ppm	Yes	Erosion of Natural Deposits
REGULATED IN THE TREATMENT PLANT							
Fluoride*	2018	4 ppm	.94 ppm**	4 ppm	0-.94 ppm**	Yes	Treatment Additive
Turbidity	2018	5 NTU	.052 NTU**	*Not applicable*	0.01-.052 NTU**	Yes	Soil Erosion, Pipe Sediment
EPA UNREGULATED CONTAMINANT MONITORING (UCMR4)							
Manganese	2018	0.05 ppm	22.5*	*Not regulated* (SMCL = 0.050 ppm)	ND - 22.5*	*Not applicable*	
Anatoxin-a	2018	*Not applicable*	0.7	*Not regulated*	0.7	*Not applicable*	
Bromochloroacetic acid	2018	*Not applicable*	1.1	*Not regulated*	0.5 - 1.1	*Not applicable*	
Bromodichloroacetic acid	2018	*Not applicable*	1.1	*Not regulated*	0.5 - 1.1	*Not applicable*	
Chlorodibromoacetic acid	2018	*Not applicable*	0.5	*Not regulated*	ND - 0.5	*Not applicable*	
Dibromoacetic acid	2018	*Not applicable*	<2	*Not regulated*	ND - <2	*Not applicable*	
REGULATED IN THE DISTRIBUTION SYSTEM							
Chlorine	2018	4 ppm	1.21 ppm*	4 ppm	0.34-1.21 ppm*	Yes	Treatment Additive
Haloacetic Acids	2018	60 ppb	7.19 ppb**	*Not applicable*	0-7.19 ppb**	Yes	By Product of disinfection
Total Trihalomethanes	2018	80 ppb	10.85 ppb**	0 - 24 ppb	0-10.85 ppb**	Yes	By Product of disinfection
REGULATED AT THE CONSUMERS TAP							
		90% of taps sampled must be below action level	**90% of taps sampled were at or below this level**		**# of sites above the AL**	**Regulation Met?**	**Potential Sources of Contaminant**
***Copper	2017	1.3 ppm	0.92 ppm	1.3 ppm	2 of 38 sites	Yes	Corrosion of household plumbing; Erosion of natural deposits
***Lead	2017	0.015 ppm	0.007 ppm	0.015 ppm	1 of 38 sites	Yes	Corrosion of household plumbing; Erosion of natural deposits
Total Coliform	2018	<5% positive	0.00%	0	0 of 480 sites		Naturally present throughout the environment

* Tacoma Supplied Water
** Tacoma Sample Results
*** Lead and Copper Results From 2017 Monitoring, Required Every 3 Years

Key to Table
AL (Action Level): The Concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
MCL (Maximum Contaminant Level): The highes level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk of health. MCLGs allow for a margin safety.
NTU (Nephelometric Turbidity Unit): Turbity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
ppm: One Part Per Million
ppb: One Part Per Billion
SDRL (State Detection Reporting Level): Indicates the minimum reporting level required by the Washington State Department of Health.
SMCL (Secondary Maximum Contaminant Level): These standards are developed as guidelines to protect the aesthetic qualities of drinking water and are not health based.
EPA: Environmental Protection Agency
WA DOH: Washington State Department of Health
ND: Not Detected

2018 Detected Substances Table

We participated in the 4th stage of the EPA's Unregulated Contaminant Monitoring Regulation (UCMR4) program by performing additional tests on our drinking water. UCMR4 benefits the environment and public health by providing the EPA with data on the occurrence of contaminant suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality.

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 http://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).

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 Residual:** 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 Hydroxide:** 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.

Cross Connection Control Program

Which glass would you like to take a sip out of? You very well could get the glass on the right if someone had a cross connection within their property. The City of Bonney Lake monitors over 2,900 backflow assemblies that help protect your drinking water. Annual notices to have your backflow assembly tested are mailed to customers 30 days before their due date.

Where are cross connections found?

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

- A chemical dispenser, insecticide or herbicide dispenser is attached to a hose bib, a pressure drop can case 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.

Pumping of any non-potable water interconnected to the City of Bonney Lake's water supply is considered a high health hazard and a reduced pressure backflow assembly is required.

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.

2019 Water Consumption Charges to Customers

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 $1.53 = $0.20 per 100 gallons
Over 10 CCF per month $3.03 = $0.41 per 100 gallons
Winter rates will be reflected on bills covering October 1st through May 31st

Summer

0 -10 CCF per month $1.53 = $0.20 per 100 gallons
11-20 CCF per month $3.31 = $0.44 per 100 gallons
21-30 CCF per month $4.63 = $0.62 per 100 gallons
31 or more CCF per month $5.96 = $0.80 per 100 gallons
Summer rates will be reflected on bills covering June 1st through September 30th

Consumption Rates for Customers Outside City Limits:

Winter

0 -10 CCF per month $2.21 = $0.30 per 100 gallons
Over 10 CCF per month $4.42 = $0.59 per 100 gallons
Winter rates will be reflected on bills covering November 1st through June 30th

Summer

0 -10 CCF per month $2.21 = $0.30 per 100 gallons
11-20 CCF per month $4.63 = $0.62 per 100 gallons
21-30 CCF per month $6.50 = $0.87 per 100 gallons
31 or more CCF per month $9.08 = $1.21 per 100 gallons
Summer rates will be reflected on bills covering July 1st through October 31st

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

How to Save Money 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 periods. You can find additional water conservation tips at **http://www.wateruseitwisely.com/**.

Inside the 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 the 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 30-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.

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