

TOWN OF FRIDAY HARBOR

2022 CONSUMER CONFIDENCE QUALITY REPORT

ON WATER QUALITY

OUR MISSION

The Town of Friday Harbor Water Department is proud to release the Consumer Confidence Report (CCR) for annual drinking water quality, for calendar year 2022. The CCR is an annual water quality report that all public water systems are required to publish. This requirement is based on the 1996 Amendments to the Safe Drinking Water Act and the right-to-know provisions of that Act. Each customer of the Town has the opportunity to review the CCR annually or at any time at www.FridayHarbor.org. The CCR is designed to help the consumer make informed choices about their water and to know what contaminants, if any, are in your drinking water. If you have any questions about this report, please call the Certified Operator in Charge, Taylor Musburger, at (360) 378-8353.

Town monitors all aspects of water treatment from the Trout Lake Reservoir & transmission through 12 miles of distribution lines to its customers, with the ultimate goal of delivering the highest quality water to each water-user 24/7/365 days per year.

SUMMARY OF REPORT FINDINGS

The Town was in total compliance for year 2021 & well below all maximum contaminant levels. As seen in the data tables, the Town water system had no violations. The Water Department routinely monitors Town's drinking water for potential contaminants in accordance with all regulations. The tables found later in this report show the most recent results of this water quality monitoring (through 12/31/2021), completed in accordance with the US EPA Drinking Water Regulations. Friday Harbor's drinking water remains safe & meets or exceeds (is better than) drinking water standards established by federal & state standards.

SURFACE WATER

Treated surface water is the sole source of water for customers served by the Town of Friday Harbor. Trout Lake Reservoir, the primary source, is approximately 5-½ miles west of Town in an isolated, undeveloped pocket of forest fed by a steep drainage basin. The Town owns 600 acres of Trout Lake's surrounding 840 acres of watershed.

The Town's water supply is unique in that the water obtained is primarily rain water and run off from the basin. There are very few sources of potential contamination from the surrounding areas of the Trout Lake watershed. The water utilized is already relatively pure and water-users enjoy a low turbidity before the treatment process even begins. To ensure safe potable water, the Friday Harbor's Water Department performs 3 chlorine residuals throughout the system each day, 7 days per week; as well as 3-5 monthly coliform samples, which is an indicator of any potential contamination. The Water Department also regulates a proactive Cross Connection Control program to prevent any backflow contamination from entering the system. The presence of algae in Trout Lake can cause taste and odor effects. This is normally a seasonal event, but algae blooms can occur at any time under ideal climate conditions. To minimize or prevent this occurrence, 3 platforms known as Solar Bees were deployed in Trout Lake in 2006.

SOLAR BEES

Solar Bees are designed to circulate freshwater. Each unit can displace & mix 10,000 GPM in freshwater reservoirs. Solar Bees use long distance circulation to solve water quality issues in lakes & reservoirs & provide significant energy savings by relying on solar power. The Solar Bee's long-distance circulation greatly accelerates the biological and chemical processes that clean non-potable water as the unit draws water from below and spreads it gently across the surface of the water body for continuous oxygen renewal. The highly efficient circulation can reduce up to 100% of the chemical requirement for algae control in potable water systems, thereby eliminating the need for algaecides and herbicides, as well as phosphorus-binding compounds such as alum.

CONSERVATION EFFORTS

The Town has a continual goal to reduce the amount of water usage through conservation efforts. This includes both authorized usage by the consumer and water lost through system leakage (“line-loss”). In 2021 the Town’s water system produced 115,003,000 gallons of treated product with a 5.1% system leakage equaling 5,879,249 gallons.

Consumption by the customer (authorized usage) is reduced by the replacement of aging lines on the property, consumer education (including use of water efficient plumbing fixtures) and the low-flush toilet rebate program. The system saved over 2.5 million gallons of water in 2020 compared to 2019 through these simple conservation efforts.

The percentage of line-loss reflects the integrity of Friday Harbor’s distribution system. The DOH mandates that water providers shall have less than 10% line-loss. Elimination of line-loss is accomplished by early leak detection technology and meter replacement. The town annually implements leak detection, meter replacement and replacement of aging mains and valves in the distribution system. In 2016 and 2017, Town eliminated undetectable leaks and minimized potential damage to the pipe in a future earthquake event by replacing 7 miles of new transmission pipe from the dam to the treatment plant & later to Town limits.

IMPROVEMENTS TO THE TOWN WATER SYSTEM

It is necessary to make improvements to Friday Harbor’s water system to provide a safe and dependable water supply. Those water system improvements and the continuing maintenance for this effort are paid for through water rates.

Since 1990, the Town has replaced 75% of the asbestos-concrete (AC) pipe installed in the 1950s with C-900 PVC. Town’s goal is to upgrade all remaining distribution lines within the next 15 years. In 2020, Town replaced another 700 feet of AC distribution pipe. Although this type of pipe does not pose a health threat, after 70 years of service the time has come to upgrade to new, virtually indestructible high-density polyethylene or HDPE pipe. Both PVC and HDPE are superior in strength, integrity, and resilience. Their outstanding performance means that consumers get the very best, cleanest water possible.

The Town is also in the process of upgrading water meters to state-of-the-art radio reading technology. This effort will allow for real time monitoring of leaks on the property owner’s side of the meter as well as potentially allowing the customer to monitor and manage their own usage. The proposed system will reduce labor and meter reading costs and allow Town to redirect staff resources to maintenance of the distribution system and appurtenances, such as flushing fire hydrants and valves.

Other recent improvements include the 327⁷ Zone Pump Station upgrade, which serves the Top of the Harbor subdivision, Peace Island Hospital, and the Friday Harbor Airport.

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of water, but can also cut the cost of water treatment. Here are a few suggestions:

INSIDE THE HOUSE:

- 1) *Install low flow showerhead and thermostatic shutoff (TSU) on each shower.*
- 2) *Fix leaking faucets, pipes, toilets, etc., and replace old fixtures with new low flow fixtures.*
- 3) *Install water saving devices in faucets, toilets, and appliances.*
- 4) *Wash only full loads of laundry and run the dishwasher only when full.*



OUTSIDE THE HOUSE:

- 1) *Water the lawn and garden in the early morning or evening and use mulch around plants and shrubs.*
- 2) *Repair leaks in faucets and hoses. Use water-saving nozzles.*
- 3) *Use water from a bucket to wash your vehicle. Only use the hose for rinsing.*
- 4) *During winter months, remove hoses from faucets and insulate all exposed fixtures and pipes.*

WATER QUALITY DATA

The table below lists drinking water contaminants that were tested for during the 2021 calendar year. **Acronyms, Definitions & Footnotes for additional information are available on the following page.**

PRIMARY STANDARDS limit the levels of specific contaminants that can adversely affect public health and are known or are anticipated to occur in water. As of 2021, all levels of Primary Standards were below the MCL or non-detectable in treatment. Based on this and previous sampling, the Washington State Department of Health has waived reporting for various substances listed below.⁽¹⁾

Trout Lake Treatment Plant: Detected Levels of Primary Standards						
Parameter	MCL	MCLG	Maximum Reported Value	Range	Likely Source	Meets Regs?
Turbidity ⁽²⁾	0.5 NTU	Not applicable	.06 NTU Highest monthly average occurred August/2021	.03 to 0.10 NTU. Based on daily samples	Erosion of soils	Yes 100% of samples met turbidity limits

Distribution System: Detected Levels of Primary Standards						
Parameter	MCL	MCLG	Maximum Reported Value	Range	Likely Source	Meets Regs?
Copper ⁽³⁾	Action Level: 90% of the homes tested must have copper levels less than 1.3 ppm	0 ppm	.387 ppm 2019 levels, tests required every 3 years	Not detected to .387 ppm	Corrosion of household plumbing systems	Yes
Lead ⁽³⁾	Action Level: 90% of the homes tested must have lead levels less than .015 ppm	0 ppm	.003 ppm 2019 levels, tests required every 3 years	Not detected to .003 ppm	Corrosion of household plumbing systems	Yes
Total Trihalo-methanes (THMs)	80 ppb	0 ppb	51.9 average for 2021 ⁽⁴⁾	42.3 to 63.6 ppb	By-products of chlorination process	Yes ⁽⁵⁾

ACRONYMS & DEFINITIONS

Concerning Primary Standards and extensive EPA required testing defined as followed:

Action Level The concentration of a contaminant which, if exceeded, triggers a treatment technique or other requirement which a water system must follow.

Cryptosporidium A tiny organism that is associated with the disease cryptosporidiosis. This disease can be transmitted by swallowing the organism in contaminated water or food, person-to-person contact, or other exposure routes.

EPA Environmental Protection Agency. A federal level agency.

Fecal Coliform Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes.

Giardia A tiny organism that is associated with the disease giardiasis. Swallowing this organism in contaminated food or water, exposure from person-to-person contact, and other exposure routes may cause this disease.

Hardness An indication of the amount of dissolved minerals in water. Friday Harbor water has a range of hardness values from 80-100 ppm, which is considered "medium soft."

Inorganic Chemicals Examples include things like metals, minerals and salts.

MCL Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the CLGs as feasible using the best treatment technology.

MCLG Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

ND Not Detected.

NTU Nephelometric Turbidity Unit. Unit of measure used to describe water clarity.

PAH Polyaromatic Hydrocarbons. A group of Synthetic Organic Compounds that are tested for.

pH Indicates whether a liquid is acidic or basic. Friday Harbor water has a pH range of 7.0 to 8.3 which lessens the corrosive potential of copper and lead.

ppb Parts per billion. One ppb is approximately equal to 1 drop of water in a 22,000-gallon swimming pool.

ppm Parts per million. The same as mg/l (milligram per liter). One ppm is approximately equal to 1 drop of water in 22 gallons.

Primary Standards Legally-enforceable standards that apply to public water systems. Primary standards limit the levels of specific contaminants that can adversely affect public health and are known or are anticipated to occur in water.

Secondary Standards Non-enforceable guidelines regarding contaminants that may cause cosmetic effects, such as tooth discoloration, or aesthetic effects, such as taste, color or odor, in drinking water.

SRL State Regulatory Level. Standards that are set by WA State DOH and may supersede federal levels.

SOC Synthetic Organic Chemicals. Examples include weed killers, fertilizers and bug spray.

Total Coliform A group of bacteria that can be naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present.

Treatment Technique A required process intended to reduce the level of a contaminant in drinking water. A treatment technique may be required by the EPA or WA State DOH.

Turbidity Describes how cloudy the water is. The smaller the number, the clearer the water. Turbidity has no health effects; however, it can interfere with disinfection and provide a medium for microbial growth.

VOC Volatile Organic Chemicals. Examples include petroleum-based chemicals, industrial by-products and dry-cleaning solvents.

WA State DOH Washington State Department of Health

FOR MORE INFORMATION ON ANY TOPIC CONTAINED IN THIS REPORT, CONTACT TAYLOR MUSBURGER, CERTIFIED OPERATOR IN CHARGE AT (360) 378-8353 OR WATER@FRIDAYHARBOR.ORG

FOOTNOTES

1) The following substances were tested for but not detected or below the MCL:

- SOC or Herbicides – The results from Mar 2020 warranted a State "no testing" waiver until Mar 2023. Typically, these are tested once every 3 years.
- Volatile Organics - In 2018 these substances were not detected. The Town received a State "no testing" waiver until Oct. 2024.
- Inorganics – The results from Oct 2020 warranted a State "no testing" waiver. Inorganics are tested every 9 years per State waiver based on the results from Oct 2020. The Town continues to test for other substances including pesticides, and radiological substances which are currently nonexistent in our water.

2) Turbidity has no health effects; however, turbidity can interfere with disinfection and provide a medium for microbial growth. DOH requires treatment facilities to provide full filtration and disinfection.

3) Copper and lead are both naturally occurring metals. Lead and copper have never been detected in the Town's source water. Both have been used to make household plumbing fixtures for many years, although Congress banned the installation of lead solder, pipes, and fittings in 1986. Both contaminants occur in drinking water when water reacts with these metals, usually in household pipes and fixtures. This is particularly likely to happen when water sits in pipes for several hours. A water provider must begin certain water treatment steps when lead or copper reach an actionable level in ten percent of the homes sampled.

The pH range of Friday Harbor's water is 7.78 to 7.95 which lessens the corrosive potential of copper and lead. Until July 1998, WA State DOH required a random testing of ten homes once per year for the presence of copper and lead. The detection rates have been so low that these tests are now required every three years. The next testing date is scheduled July 2022.

4) Testing for THMs in the distribution system is performed quarterly. The test results are averaged over four consecutive quarters because some values in the quarterly range may be higher than the maximum reported value due to seasonal events. The current maximum allowance is 80 ppb.

5) In 2021 the THM yearly average was well below the MCL. Some people who drink water containing THMs over many years may experience problems with their liver, kidneys or central nervous systems, and may have an increased risk of getting cancer. THMs are formed when organics in the water combine with chlorine. Town implemented Granular Activated Carbon technology in 2011 to filter potable water, which has significantly reduced THMs. See Page 3 for information describing Friday Harbor's efforts to remove Trihalomethanes or call the Town Water Department at 360-378-8353 for more information about THM's.

A Note from the EPA/DOH About Drinking Water Sources

Both the Environmental Protection Agency & Department of Health advise that all 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

A Note About Drinking Water Quality & Immuno-compromised Persons

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particular risk from infections. These people should seek advice about drinking water from health care providers. EPA/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline at 1 (800) 426-4791 or at <http://www.epa.gov/safewater>.

A Note About Lead

Lead in drinking water comes primarily from material and components used with home plumbing. While the Town provides high-quality drinking water, it has limited control regarding the materials that are used in plumbing components in homes and buildings.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. If you are concerned, 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 drinking 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 are available from the Safe Drinking Water Hotline at 1 (800) 426-4791 or at <http://www.epa.gov/safewater/lead>.

A Note About Trihalomethane Removal Status

The Town's treatment process provides the utmost benefit for the community's investment. The granular activated carbon (GAC) filter's purpose is to capture organics in the water, preventing a chemical reaction with chlorine that could create a disinfected byproduct such as trihalomethane acids (THMs). With this highly effective organic removal system, the Water Utility now reports a yearly average of only 51.9 ppb while the current maximum allowance is 80 ppb. Since the GAC filters came online in 2011, the Friday Harbor Water Utility has successfully achieved its goal of significantly reducing the amount of THMs to below the maximum contaminant levels or MCL, as required by the Department of Health. The GAC filters should keep our water supply at its highest quality for years to come. Sampling for THMs are taken at the farthest regions of the system where the highest concentrations may be present and regular flushing of distribution lines occur to eliminate potential build up.

A Note About Continued Education & TOP

The Town's Water Department take great pride in serving the community with expertise and professionalism. Continuing education is mandatory for Town employees to meet the high standards that the community has come to expect. Several State certifications are held by Department's Maintenance and Treatment Crew.

The Town's Water Department voluntarily participates in the Department of Health's Treatment Optimization Program (TOP). Based on several goals and timed over 3 consecutive-running years, the TOP Award challenges Treatment Plant Operators to exceed the minimum legal standards for water quality compliance regulations. The Town Water Department is proud to announce that for the third time, it has earned the bronze award for these stringent requirements. "The DOH set an extremely difficult goal," said Town Public Works Director Wayne Haefele. "It requires that water systems make the TOP goal a priority in everything we do and every decision we make."

TOP Award winners must maintain extreme water clarity, known as low "turbidity", while simultaneously complying with every other measurement of water quality, without exception, for 3 consecutive years. Turbidity is considered one of the most dependable tests for confirming the removal of potential pathogenic organisms from water.