



2021 Consumer Confidence Report

Mission:

To provide a sufficient quantity of good quality water at a reasonable cost to our customers, in perpetuity.

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For more information:

Water District 19
(206) 463-9007
water19@water19.com

Or

U.S. Environmental Protection Agency
Safe Drinking Water
Hotline 1-800-426-4719
www.epa.gov/safewater

Or

Washington State Department of Health
Regional Office
(253) 395-6750
www.doh.wa.gov/ehp/dw

This Consumer Confidence Report is designed to give you, our customer, an overview of Water District 19's operation and water quality test results for 2021. You will discover where your water comes from, where it goes and what steps are taken to provide you water that is reliable and safe to drink.

At Water District 19 we strive to provide our customers with drinking water that meets or exceeds the stringent standards set by the state and federal governments. The water quality in our system is monitored 24/7. From the sources, tanks and water treatment plant to the pipes that carry the water to your home we work to ensure the quality of the water. Daily laboratory sampling is done at our Water Treatment Plant and Well sites along with daily field analyses. Monthly samples are collected and sent to a state certified laboratory to test for coliform bacteria/e-coli . Other regulated contaminants are sampled on a schedule dictated by the Washington Department of Health. Water quality system-wide consistently exceeds US EPA standards. (results of recent analyses are on pages 2 and 3 of this report).

All water quality information is available to the public during office hours (M - F, 8 a.m. to 4 p.m.). Additionally, the Washington State Department of Health Office of Drinking Water maintains a comprehensive database of every water system in the state called Sentry Internet, which can be accessed at: <https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx>. Water District 19's system I.D. is 38900. Enter this I.D. number to access all of our records.

If you have any concerns regarding the quality of your water, contact the District office and we will investigate it immediately.

Water Usage and System Leakage

There are two aspects of water conservation: the supply side and the demand side. We provide the water. You, the customer, consume it. On the supply side we are primarily concerned with leaking pipes. Leaks are a result of our aging infrastructure. The table below shows our system leakage (supply side). Though we are just above the Statewide goal of 10%, we actively monitor our system for leaks. We strive to repair any known leak within a day or two. Most of our leaks are discovered and reported by our customers. We would like to thank all of you for your vigilance and consideration. This is our system. We will gladly investigate any possible or suspected leak. If you see or suspect a water leak please call our office 206-463-9007 or e-mail water19@water19.com

Distribution System Leakage Summary 2021		
Total Water Produced (TP) - Annual Volume	118,836,623	Gallons
Authorized Consumption (AC) - Annual Volume	106,842,309	Gallons
Distribution System Leakage (DSL) - Annual Volume TP - AC	11,994,314	Gallons
Distribution System Leakage - Percent DSL	10.1	%
3 year Annual Average - Percent	9.5	%

Sources for Water District 19

Water District 19 utilizes surface water and groundwater sources. Our surface water comes from Beall and Ellis Creeks and our groundwater comes from our main well field on 103rd Ave. SW, the Morgan Hill Well on SW 216th St. and the Vashon Meadows Well. Water from the creeks is pumped to our Treatment Plant. There the water is filtered and chlorinated before being pumped into the distribution system and the million gallon

(MG) storage tank located at our wellfield. The wellfield on 103rd Ave consists of three wells and two tanks. Pumped groundwater is chlorinated before entering a 625,000 gallon storage tank. This water is transferred to the million gallon tank, where it is blended with surface water. We are a 'gravity feed' system; meaning water level in the MG tank determines the minimum pressure for the distribution system.

Morgan Hill Well water is chlorinated and stored in a 100,000 gallon tank on site before being pumped into the distribution system. Vashon Meadows water is chlorinated and pumped directly into the system at 184th Avenue SW. Beall Well is blended with surface water and would only be used to meet exceptionally high seasonal demand. It has not been operated since 2012.

Surface Water Treatment Process

Surface water enters the treatment plant and is treated with National Science Foundation (NSF) certified chemicals which aid filtration. The water then passes through the filtration process. Post filtration, the water is chlorinated and stored in the clear well. Once in the clear well, the water flows through a series of baffles and chambers to provide adequate contact time for disinfection. This contact time ensures the chlorine will be effective against bacteria, viruses and pathogens. Water is then pumped from the clear well into the distribution system.

Water quality is monitored continuously throughout this process. We consistently produce water which meets the Department of Health's Treatment Optimization Program (TOP). TOP goals are more stringent than the treatment requirements set forth by the EPA.



Water District 19 Water Treatment Plant

Chlorination and Disinfection

Liquid sodium hypochlorite is used as our disinfectant. Chlorine is very effective in killing disease-causing pathogens, such as bacteria, viruses, and protozoans. We are required to assure minimum chlorine residuals entering the distribution system and a 0.20 mg/L minimum chlorine residual throughout. We monitor chlorine concentrations daily as water enters the distribution system and throughout the system. The table below shows the range of chlorine concentrations in our system.



Chlorine Monitoring Point	Unit	Minimum	MRDL	Average	Range
Entry Into Distribution System	Mg/L	0.20	4.00	1.13	0.45 - 1.78
Distribution System Samples	Mg/L	0.20	4.00	0.90	0.20 - 1.49

While disinfection helps to maintain the safety of our water, chlorine can react with natural materials to form "Disinfection Byproducts" (DBP's) that may pose a health risk. We have been collecting data on DBPs every year since 2005 and we sample for them quarterly. Though our results are typically below the EPA MCL's*, we continue to investigate ways to mitigate their formation.

2021 Disinfectant By-Products Results					
DBP's	Units	MCL	Avg	Max	Min
Total HAA's *	µg/L*	60	24.1	58.0	10.0
Total TTHM*	µg/L	80	57.6	76.4	19.6

* see Definition of Terms page 3

Water Quality Standards

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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

EPA/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 (1-800-426-4791).

In order to ensure that tap water is safe to drink, the Washington State Department of Health (WA DOH) and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulates contaminants in bottled water.

Contaminants that may be present in source water before treatment include:

- Microbial contaminants**
- Inorganic contaminants**
- Pesticides and herbicides**
- Organic chemical contaminants**
- Radioactive contaminants**

WA DOH prescribes the water quality monitoring requirements yearly. See Table below for the most recent results.

Water Quality Test Results 2021±

This table shows the most recent data concerning the quality of our drinking water. Sampling is done at the entry point to the distribution system, post treatment. Of the 135 regulated chemicals tested for, we provide data on the chemicals detected. The table does not include the regulated chemicals we tested for but did not detect, including synthetic and volatile organic chemicals such as oils, solvents herbicides and pesticides. If you have any questions regarding Water Quality please give us a call: 206-463-9007.

Contaminant	Units	MCL	Test Result					Typical Source of Contamination
			Surface Water	Well field 103rd	Morgan Hill Well	Vashon Meadows	Beall Well	
EPA Regulated (Primary)								
Arsenic	µg/L	10	1.2	7	1.6	1.8	36	Erosion of Natural Deposits
Nitrate	mg/L	10	0.64	ND	ND	2.4	ND	Erosion of Natural Deposits, leaching from septic systems
Gross Alpha	pCi/L	15	ND	ND	ND	ND	0.834	Erosion of Natural Deposits
Radium 228	pCi/L	5	ND	ND	ND	0.751	0.018	Erosion of Natural Deposits
EPA Regulated (Secondary)								
Hardness (CaCO ₃)	mg/L	-	76	64	85	100	100	Erosion of Natural Deposits
Iron	mg/L	0.3	ND	0.3	0.16	0.39	0.18	Erosion of Natural Deposits
Manganese	mg/L	0.05	ND	0.084	0.093	0.082	0.12	Erosion of Natural Deposits

ND - Not Detected **Bold** - Indicates contaminant exceedance

Due to arsenic levels in Beall Well (36 µg/L), it must be blended with surface water at the plant to well below the MCL. **Results in Table are post treatment.** Beall Well was not operated in 2021 and will only be operated in the future if absolutely necessary to meet system demand.

Coliform bacteria: An indicator for potential disease causing bacteria in water. All samples taken for 2021 were satisfactory.

Arsenic: Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Lead and Copper: Lead and copper are typically a result of corrosion of household plumbing systems. The action levels* for lead and copper are 0.015 mg/L and 1.3 mg/L, respectively. We sampled 19 homes and the Vashon School District in 2021. The 90th percentile concentration level for lead was 0.0017 mg/L. Two samples were measured above this at 0.0021 mg/L and 0.0038 mg/L. The 90th percentile concentration level for copper was 0.098 mg/L. Two samples were above this at 0.110 mg/L and 0.130 mg/L. Lead and Copper in drinking water is primarily from materials and components associated with service lines and home plumbing. Water District 19 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. 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>

* Definition of Terms

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

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

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

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants (e.g. chlorine, chloramines, chlorine dioxide).

90th Percentile value: The 90th percentile is the value for which 90% of the data points are smaller.

mg/L: Milligrams per liter = parts per million.

µg/L: Micrograms per liter, equal to parts per billion.

pCi/L: PicoCuries per Liter

THM: Trihalomethane, a regulated disinfection by-product.

HAA: Haloacetic Acids, regulated disinfection by-product.

DOH: Washington State Department of Health.

± Contains the most recent test results for water quality standards dictated by Washington State and EPA.

Public Participation Opportunities

Regular Board of Commissioners meetings occur on the second Tuesday of every month at 6:00 p.m. at the District office and are always open to the public. Other special meetings, as scheduled by the Board, are advertised and posted on our website.

Household Water Use and Conservation

In 2021 the average household consumed 189 gallons per day (gpd). This is well below the national average of 300 gpd (EPA estimate). We thank you for your conservation ethos; you are making a difference. Rough estimates show that households are typically using 119 gpd during the winter and 286 gpd during the summer months: May through September. Our seasonal peak is typically 6 weeks between July and August. Lawn and garden irrigation is viewed as the primary source of the 40% increased during the summer months. Call or stop by our office to explore meaningful conservation strategies you can implement in and around your home.

Board of Commissioners
 Seth Zuckerman, President
 Mike Weller, Secretary
 Robin Pfohman
General Manager
 John Martinak
Lead Operator
 Armin Wahanik
Administrative Offices
 17630 100th Ave. S.W.
 P.O. Box T
 Vashon, WA 98070
 Phone: 206-463-9007
 Fax: 206-463-1262
<http://water19.com>

Monthly Consumption by Customer Class 2021



Brown Water concerns and what we can do

One of the ongoing challenges we face regarding our water quality is the dreaded 'Brown Water'. This is a combination of internal corrosion (rust) of our older pipes and manganese from our wells, which settles in the pipes throughout the system.

Although brown water is considered an aesthetic water quality concern, we do not recommend that anyone drink water that looks, smells or tastes objectionable. When encountering brown water from your tap, please flush a water line, such as an outside

faucet, until the water runs clear. This can take anywhere from 10 - 40 minutes. Please call us to report brown water, it is very helpful for understanding our trouble areas.

For those of our customers who have had to deal with this, in an on-going manner, please know we apologize for the inconvenience and are trying to lessen the impact on all of you.

In 2021 we began to see a marked increase in number of brown water calls

to our office. To address the immediate need, we will enact an on-going/yearly system wide flushing program starting in 2022.

Though brown water will always be a part of a water system, we are actively exploring ways to alleviate the burden such as manganese treatment at our wells, continued water main replacement and targeted flushing strategies.