SKAGIT PUBLIC UTILITY DISTRICT
WATER QUALITY REPORT 2019
& WATER USE EFFICIENCY UPDATE

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Skagit PUD
PUBLIC UTILITY DISTRICT

COMMITMENT

As your customer-owned water utility, we have a unique and special public mission. We are mindful that water utilities are the only utilities that produce a product that people ingest, which has a direct impact on life. Our people commit themselves to delivering water and service that exceeds our customers' expectations. Customers trust that we carefully process each drop of water their families consume. This report is a snapshot of the quality of water that we provided in 2019. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

GEORGE SIDHU, P.E.
GENERAL MANAGER | SKAGIT PUBLIC UTILITY DISTRICT

WHO WE ARE

80 YEARS DELIVERING WATER TO SKAGIT PUD CUSTOMERS

REGIONAL LEADER & INNOVATIVE UTILITY PROVIDER

85 UNION & NON-UNION WORKERS

AWARD-WINNING UTILITY & STAFF

PEOPLE WE SERVE

- 70,000 people in Burlington, Mount Vernon and Sedro-Woolley areas
- Plus eight satellite systems from Guemes Island to Marblemount:
  - Alger Water System
  - Cedargrove Water System
  - Fidalgo Island Water System
  - Marblemount Water System
  - Mountain View Water System
  - Potlatch Water System
  - Rockport Water System
  - Skagit View Village Water System

EXCEPTIONAL QUALITY

Skagit PUD earned the Washington Department of Health's Office of Drinking Water Platinum Award for 15 or more consecutive years of optimal performance of the Judy Reservoir water supply system.

WHAT WE DO

SYSTEM

650 MILES OF PIPELINE

55% DUCTILE IRON
27% PLASTIC / PVC
13% ASBESTOS

22 Number of reservoirs in distribution system

3 Number of clearwells at Judy Reservoir

ACCOUNTS

26K+ WATER SERVICES

86% Residential
7% Commercial
5% Multi-Family
1% Farms / Government

WHO TO CONTACT

If you have questions regarding your water quality or the information presented in this annual report, please contact **Emilia Blake,** Water Quality Coordinator, at 360.848.2135 or *blake@skagitpud.org.*

DRINKING WATER—EPA STANDARDS FOR PROTECTING PUBLIC HEALTH

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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

To ensure that tap water is safe to drink, the Department of Health and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

The Food and Drug Administration (FDA) and the Washington Department of Agriculture regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

YOUR HEALTH

ASSESSING YOUR 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).**

CONTAMINANT SOURCES

The sources of drinking water (both tap water and bottled water) include lakes, rivers, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants in drinking water sources may include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which 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. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

SAFE & PROTECTED

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Skagit PUD's drinking water remains safe and protected from contaminants, including the group of man-made chemicals labeled PFAS (per- and polyfluoroalkyl substances). PFAS are manufactured for a variety of industrial purposes. If detected in drinking water, PFAS have the potential to raise health concerns.

WHAT ARE PFAS?

PFAS are chemicals used in industrial and consumer products, such as carpeting, clothing, upholstery, food paper wrappings, fire-fighting foams, and metal plating worldwide since the 1940s.

Some epidemiological studies in people suggest that exposure to PFAS increases cholesterol levels, reduces birth weight and may increase rates of some types of cancers (kidney and testicular cancer).

The 2019 film "Dark Waters," which is based on a true story, focuses on the use of PFAS in the United States and how these "forever chemicals" are found in everything from clothing to drinking water and subsequently the human bloodstream. The chemicals do not biodegrade and can accumulate in water bodies and have potentially serious health consequences.

MONITORING EFFORTS

Currently, the PFAS are not regulated contaminants and routine monitoring is not required, but Skagit PUD monitored for six types of PFAS in 2014-2015 (under the Environmental Protection Agency's third Unregulated Contaminant Monitoring Rule) in our Judy Reservoir water system serving Mount Vernon, Sedro-Woolley and Burlington. Test results show no detection of these chemicals in the Judy Reservoir water.

Detailed information regarding PFAS can be found on the EPA website: *https://www.epa.gov/pfas*

Skagit PUD is committed to protecting the Judy Reservoir watershed and prohibits any activities that can introduce PFAS compounds or any other contaminants in the source water.

PFAS SOURCES

Research has suggested that exposure to PFAS from today's consumer products is usually low, especially when compared to exposures to contaminated drinking water. Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes, and candy wrappers
- Nonstick cookware
- Stain resistant coatings used on carpets, upholstery, and other fabrics
- Water resistant clothing
- Cleaning products
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Paints, varnishes, and sealants

POTENTIAL HEALTH EFFECTS OF LEAD

The greatest risk of lead exposure is to infants, young children, and pregnant women. Lead can cause serious health problems if too much enters the body. Lead is stored in the bones and can be released later in life. Lead can cause damage to the brain and kidneys, interfere with production of red blood cells that carry oxygen, and may result in lowered IQ in children. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Low levels of lead can affect adults with high blood pressure or kidney problems.

HOW YOU CAN REDUCE LEAD EXPOSURE

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.

Skagit PUD 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.*

SAFETY TIP

Clean your aerator.

Regularly clean your faucet's screen (also known as an aerator). Sediment, debris, and lead particles can collect in your aerator. If lead particles are caught in the aerator, lead can get into your water.

SOURCE WATER PROTECTION

To achieve improved protection of public water supply sources and the health of Washington's citizens, the Washington State Department of Health has developed the Source Water Assessment Program (SWAP).

The SWAP program evaluates potential threats to the safety of our water supplies by assessing sources of contamination. The SWAP is designed to give you and your community more information about the source of your drinking water, and any threats to its long-term quality that we can identify and address through a pollution prevention approach.

To learn more about the SWAP, contact the Washington State Department of Health at 360.236.3149 or visit www.doh.wa.gov/ehp/dw.

STEWARDSHIP

CULTUS MOUNTAIN WATERSHED PURCHASE

In December 2017, Skagit PUD purchased a 250 acre parcel of forested land within the Cultus Mountain Watershed for $1.5 million.

The property is located around Gilligan Creek, which provides 45% of the PUD's source water for the Judy Reservoir water system. Until recently, timber companies and the Department of Natural Resources owned all the property around Gilligan Creek.

In 2012, the PUD went through a comprehensive updating of its watershed control program and determined that finding a way to protect the water quality of this stream was critical to the success of the Judy system. Recent increases in the rates of logging and road construction led to the concept that buying land near the area where water is withdrawn for the water system would work wonders to protect the long-term success of the Judy system.

A well-established relationship with the landowner helped the PUD start the complicated negotiations to buy the property in the spring of 2017. A $1.5 million deal was struck by September, and the property became the ownership of Skagit PUD in December.

DEFINITIONS

Action Level (AL). The concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.

Haloacetic Acids. A disinfection by-product from chlorinating water that contains natural organic matter.

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

Maximum Contaminant Level Goal (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 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.

Maximum Residual Disinfectant Level Goal (MRDLG). The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the health benefits of the use of disinfectants to control microbial contaminants.

Not Applicable (NA). Does not apply.

Not Detected (ND). Indicates that the parameter was not detected above the Specified Reporting Limit.

Nephelometric Turbidity Units (NTU). A unit of measure for turbidity based on the amount of light that is reflected from the water.

Part per million (ppm). One part per million is equivalent to half of an aspirin tablet dissolved in a full bathtub of water (50 gallons).

Part per billion (ppb). One part per billion is equivalent to half of an aspirin tablet dissolved in 1,000 bathtubs of water (50,000 gallons).

Total Coliforms. A group of non-pathogenic bacteria used in testing water to indicate the presence of pathogenic bacteria. They are naturally present in the environment. If coliforms were found in more samples than allowed, it would be a warning of potential problems.

Trihalomethanes. A disinfection by-product from chlorinating water that contains natural organic matter. The most common by-product is chloroform.

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

Turbidity. A measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Water Quality Data

The Drinking Water Results tables included within this report list all the drinking water contaminants that we detected during the 2019 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in the tables are from testing done January 1 to December 31, 2019. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

JUDY RESERVOIR

PUBLIC WATER SYSTEM: ID# 79500E

SOURCE & TREATMENT

The Judy Reservoir system is located in Skagit County and serves around 75,000 people with the majority being in Mount Vernon, Burlington and Sedro-Woolley. The source water comes from the Cultus Mountain watershed via four creeks (Gilligan, Mundt, Salmon and Turner) into Judy Reservoir. We also have the ability to pump water up from the Skagit River to Judy Reservoir. Being surface water, Judy Reservoir can experience seasonal changes that can affect a number of parameters. Temperature, pH, alkalinity, color, turbidity, total organic carbon and others are all affected by warmer temperatures and high organic content. This can increase algae growth resulting in taste and odor issues, plus pose treatment challenges.

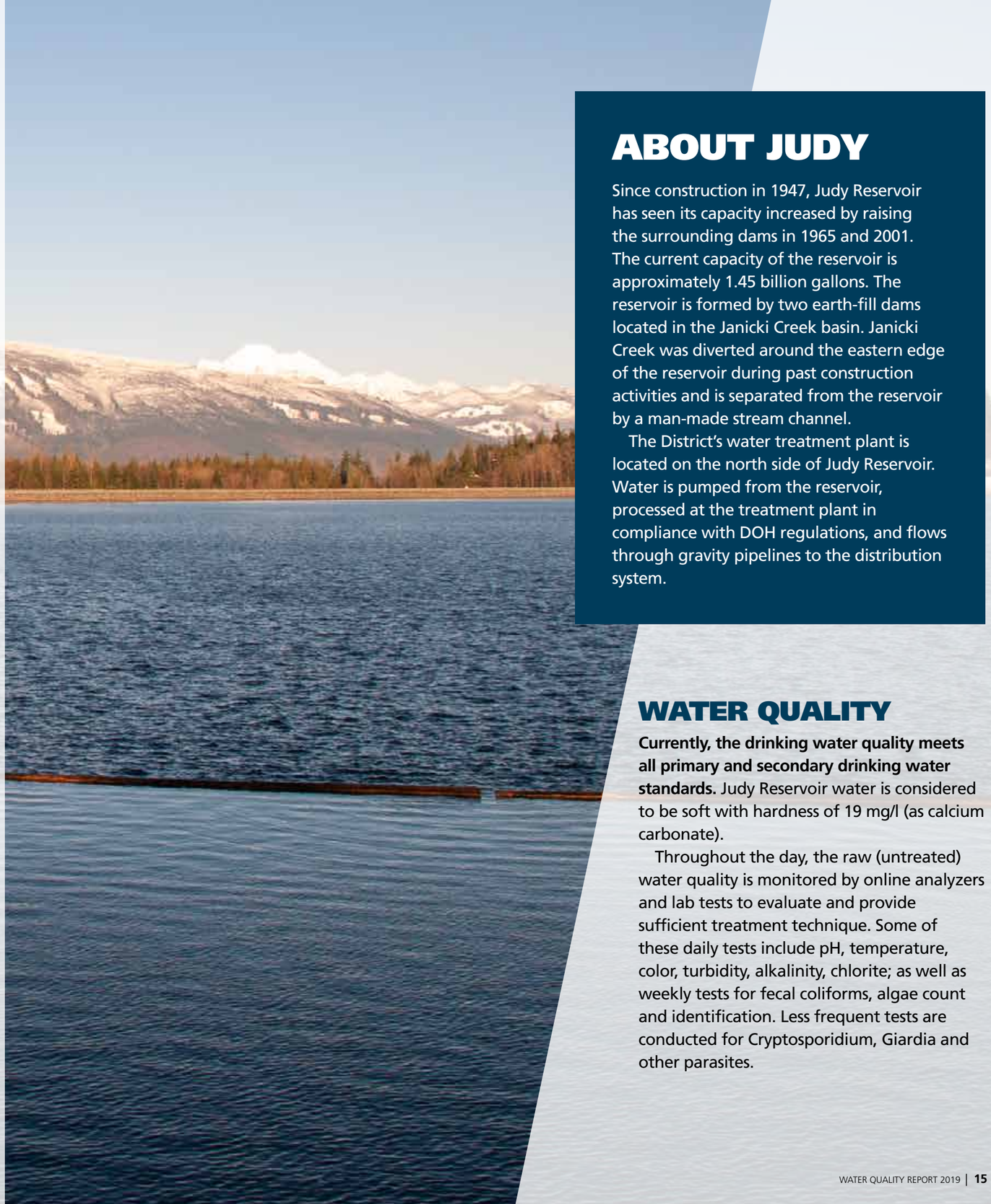
The treatment is a multi-step direct filtration process that meets water quality standards and provides four log, 99.99 percent, removal. A log is the percentage of microorganisms physically removed or inactivated by a given process. The raw water from Judy Reservoir is disinfected with chlorine dioxide then pumped to the water treatment plant where carbon dioxide and coagulant aids are added. This step is intended to provide initial oxidation (beneficial in reducing taste and odor caused by algae) and help coagulate small particles in the flocculation basin where bigger particles are then formed. This is followed by filtration, where the treated water passes through charcoal media and sand. The finished water is then disinfected and flows by gravity into three clear wells.

Before the water reaches the clear wells, caustic soda and ammonia are added to adjust pH and form chloramines for residual disinfection. Chloramines are used because it provides effective and long-lasting disinfection in the distribution system at low dosages. Chloramines are measured as both total chlorine and monochloramine. Their optimal formation and stability is at pH 8.5 and above, therefore the treated water leaving the treatment plant has pH of at least 8.8 and can be slightly higher in the distribution system. Alkaline (higher) pH and alkalinity adjustment helps with corrosion control, because Judy Reservoir water is considered to be soft by nature.

Total chlorine residual is maintained throughout the distribution system to provide sufficient disinfection.

In 2019, 80 routine samples per month from the distribution system are required to be tested for total coliforms and *E.coli*. The total chlorine residual levels leaving the water treatment plant are between 1.3 – 1.8 mg/l and a pH of 8.8. Monthly the water is tested for TOC (total organic carbon) and chlorite.

Quarterly, the treated water is tested for disinfection by-products from eight locations throughout the distribution system and results show disinfection by-products are below the established MCL. Once a year water is tested for nitrate, which is usually very low (< 1 mg/l). Every three years lead and copper samples are collected from customers with older homes to establish corrosive properties of the water. Thus far, the system has been in compliance with the established action levels for lead and copper. The Judy system is on a testing schedule of every six years for radionuclides. A reduced monitoring waiver has been granted by the DOH for pesticides, soil fumigants, volatile organics (VOC) and complete inorganics (IOC). These representative samples are tested every three, six or nine years.



ABOUT JUDY

Since construction in 1947, Judy Reservoir has seen its capacity increased by raising the surrounding dams in 1965 and 2001. The current capacity of the reservoir is approximately 1.45 billion gallons. The reservoir is formed by two earth-fill dams located in the Janicki Creek basin. Janicki Creek was diverted around the eastern edge of the reservoir during past construction activities and is separated from the reservoir by a man-made stream channel.

The District's water treatment plant is located on the north side of Judy Reservoir. Water is pumped from the reservoir, processed at the treatment plant in compliance with DOH regulations, and flows through gravity pipelines to the distribution system.

WATER QUALITY

Currently, the drinking water quality meets all primary and secondary drinking water standards. Judy Reservoir water is considered to be soft with hardness of 19 mg/l (as calcium carbonate).

Throughout the day, the raw (untreated) water quality is monitored by online analyzers and lab tests to evaluate and provide sufficient treatment technique. Some of these daily tests include pH, temperature, color, turbidity, alkalinity, chlorite; as well as weekly tests for fecal coliforms, algae count and identification. Less frequent tests are conducted for Cryptosporidium, Giardia and other parasites.

JUDY RESERVOIR PUBLIC WATER SYSTEM: ID# 79500E

2019 DRINKING WATER RESULTS

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Contaminants	MCLG	MCL	Judy Reservoir	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
RAW WATER								
Total Organic Carbon (ppm)	N/A	TT	1.45	0.82	2.03	2019	NO	Naturally present in the environment
Cryptosporidium (oocyst/L)*	N/A	N/A	ND	ND	ND	2019	NO	Naturally present in the environment
*Total of 3 samples were collected and none had presence of Cryptosporidium or Giardia.								
FINISHED WATER								
Turbidity (NTU)	N/A	TT	0.03	0.01	0.12	2019	NO	Soil erosion
Turbidity measures the cloudiness of the water and is a good indicator of the effectiveness of our filtration system at removing particulates from the water. Skagit PUD measures turbidity continuously throughout the treatment process. In 2019, no filter water turbidity results were above the EPA 0.3 NTU limit. For compliance purposes, combined filter effluent turbidity should be <0.3 NTU in 95% of the monthly samples.								
DISINFECTANT RESIDUAL								
Total Chlorine Residual (ppm)	4	4	1.29	0.02	1.69	2019	NO	Measure of disinfectant added to water
Skagit PUD uses chloramines for disinfection. To ensure disinfectant residual in the distribution system, total and free chlorine residual measurements are taken with each coliform sample. Additionally, monochloramine measurements are taken to establish chloramine formation.								
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	5% per month	0	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects 80 compliance samples per month for total coliforms and *E.coli* from our distribution system. No total coliforms or *E.coli* were detected in 2019.								
DISINFECTION BY-PRODUCTS								
Chlorite (ppm)	0.8	1	0.47	0.35	0.65	2019	NO	By-product of chlorine dioxide
Total Trihalomethanes (ppb)	N/A	80	11.1*	6.4**	16.1**	2019	NO	By-product of drinking water chlorination
Haloacetic Acids (5) (ppb)	N/A	60	13.9*	5.7**	21.7**	2019	NO	By-product of drinking water chlorination
Chlorite samples are collected monthly from three locations. The TTHMs and HAA5 results are from the eight locations in Skagit County, which are monitored quarterly to comply with current regulations. *Highest locational running average of the eight sites. **Lowest and highest actual value from all eight locations measured.								
INORGANIC CONTAMINANTS								
Nitrate (ppm)	10	10	ND	N/A	N/A	2019	NO	Erosion of natural deposits
RADIONUCLIDES								
Gross Alpha (pCi/L)	0	15	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	N/A	N/A	2015	NO	Erosion of natural deposits
DETECTED UNREGULATED CONTAMINANTS*								
Chlorate (ppb)	N/A	N/A	118	113	128	2015	N/A	Disinfection by-product
Chromium (ppb)	N/A	N/A	0.33	0.24	0.51	2015	N/A	Erosion of natural deposits
Strontium (ppb)	N/A	N/A	31	29	33	2015	N/A	Naturally occurring element
Hexavalent Chromium (ppb)	N/A	N/A	0.14	0.121	0.17	2015	N/A	Erosion of natural deposits Discharge from steel/pulp mills
*Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to help EPA determine their occurrence in drinking water and potential need for future regulation.								

MONITORING WAIVERS*			
Contaminants	Frequency	Last Sampled	Violation
Volatile Organic Chemicals (VOC)	Every 6 years.	2017	NO
Inorganic Chemicals (IOC)	Every 9 years.	2011	NO
Synthetic Organic Chemicals (SOC)	Every 3 or 9 years.**	2015	NO

*The Washington State Department of Health reduced the monitoring requirements for IOCs (28 contaminants), SOCs (40 contaminants) and VOCs (25 contaminants), because the source is not at risk of contamination. **Pesticides are monitored every three years and herbicides every nine years, none of the two groups have been detected in our finished water.

Currently, per- and polyfluoroalkyl substances (PFAS) are not regulated contaminants and routine monitoring is not required, but Skagit PUD monitored for six types of PFAS in 2014-2015 (under the third Unregulated Contaminant Monitoring Rule) in our Judy Reservoir water system serving Mount Vernon, Sedro-Woolley and Burlington. Test results show no detection (ND) of these chemicals in the Judy Reservoir water.

LEAD & COPPER							
Contaminants	MGLG	AL	Judy Reservoir (90th %)	Sample Date	# Samples Exceeding AL	Violation	Typical Sources
Lead – lead at consumer's tap (ppb)	0	15	2*	2018	0 of 30	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.02*	2018	0 of 30	NO	Corrosion of household plumbing systems; erosion of natural deposits
* The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order from lowest to highest. Judy Reservoir is required to collect 30 samples for presence of lead and copper from household taps every three years. The Washington State Department of Health requires Judy Reservoir to provide corrosion control treatment by adjusting the pH and alkalinity with addition of caustic soda. Target pH leaving the treatment plant is 8.8 and is constantly monitored with online analyzers and lab tests every two hours. pH measurements are taken with every coliform sample throughout the distribution system.							

AESTHETIC AND SECONDARY STANDARDS			
Parameter	Units	MCL	2019 Results
Calcium	mg/l	N/A	5.6
Magnesium	mg/l	N/A	1.2
Potassium	mg/l	N/A	0.5
Sodium	mg/l	N/A	6.6
Hardness	mg/l	N/A	18.9
Iron	mg/l	0.3	ND
Chloride	mg/l	250	3.1
Sulfate	mg/l	250	3.5

The fourth Unregulated Contaminant Monitoring Rule (UCMR 4) monitoring started in 2019 and will continue through 2020. The Judy Reservoir system will be monitored for 30 chemical contaminants using analytical methods developed by the EPA, which provides the basis for future regulatory actions. Part of the UCMR 4 was monitoring for cyanotoxins (microcystin, anatoxin- A and cylindrospermopsin) and none were detected in our finished water.

Susceptibility rating of potential threats to the safety of our water supply: **High**

See Source Water Assessment Program (SWAP) data on WA Department of Health website—https://fortress.wa.gov/doh/swap/index.html

How to Read the Water Quality Data Table
EPA establishes the safe drinking water regulations that limit the amount of contaminants allowed in drinking water. The tables show the concentrations of detected substances in comparison to regulatory limits. Substances not detected are not included in the table.

Maximum Contaminant Level (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 treatment technology.

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

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

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

ALGER PUBLIC WATER SYSTEM: ID# 01400K

SOURCE & TREATMENT

Alger water system is located 15 miles north of Mount Vernon and serves approximately 110 residential connections and 12 non-residential connections. Water is drawn from 51 foot deep, flowing, artesian well. The water is treated for iron and manganese removal via chlorine oxidation and filtration using manganese oxide media (ATEC). The source water has naturally occurring ammonia and with the addition of free chlorine for disinfection, chloramines are formed.

WATER QUALITY

Currently the drinking water quality meets all primary and secondary drinking water standards. The hardness of the water is 82.0 mg/l (as calcium carbonate).

A monthly routine distribution sample is tested for total coliform and *E.coli.* Total chlorine residual levels are around 0.02-1.2 mg/l with pH levels of 7.4-7.8. Quarterly, the untreated and treated water is tested for iron and manganese to evaluate their removal from the untreated water. Once a year the nitrate levels are measured and found to be non-detect. This system is on three year sampling schedule for lead, copper, arsenic (naturally occurring), manganese, disinfection by-products, and volatile organics. These parameters are below the established MCLs. Radionuclides are on a six year testing schedule and are also found to be below the established MCLs.

The Alger water system has been granted waivers by Washington State Department of Health (DOH) for asbestos, complete inorganics, herbicides, pesticides and soil fumigants. These parameters are tested every three or nine years.

2019 Drinking Water Results

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Contaminants	MCLG	MCL	Alger	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
DISINFECTANT RESIDUAL								
Total Chlorine Residual (ppm)	4	4	0.4	0.02	1.2	2019	NO	Measure of disinfectant added to water
Alger's water contains ammonia and when chlorine is added for disinfection, chloramines are formed. Total chlorine is measured with each coliform sample.								
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	1 Positive	0	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects one compliance sample per month for total coliforms and *E.coli* from the distribution system. No total coliforms or *E.coli* were detected in 2019.								
DISINFECTION BY-PRODUCTS								
Total Trihalomethanes (ppb)	N/A	80	19.3	N/A	N/A	2017	NO	By-product of drinking water chlorination
Haloacetic Acids (5) (ppb)	N/A	60	5.5	N/A	N/A	2017	NO	By-product of drinking water chlorination
Disinfection by-product samples are collected once every three years.								
INORGANIC CONTAMINANTS								
Arsenic (ppb)*	0	10	6	N/A	N/A	2017	NO	Erosion of natural deposits
Nitrate (ppm)	10	10	ND	N/A	N/A	2019	NO	Erosion of natural deposits
Total Dissolved Solids (ppm)	500	500	122	N/A	N/A	2017	NO	Erosion of natural deposits
*Your drinking water currently meets EPA's standards for arsenic. However, it does contain low levels of arsenic. There is small chance that some people who drink water containing low levels of arsenic for many years could develop circulatory disease, cancer, or other health problems. Most types of cancer and circulatory disease are due to factors other than exposure to arsenic. EPA's standard balances the current understanding of arsenic's health effects against the cost of removing arsenic from drinking water.								

Contaminants	MCLG	MCL	Alger	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
RADIONUCLIDES								
Gross Alpha (pCi/L)	0	15	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	N/A	N/A	2015	NO	Erosion of natural deposits
VOLATILE ORGANIC CONTAMINANTS (VOC)								
VOCs (ppb)*	0	0	ND	N/A	N/A	2019	NO	Discharge from factories
*VOCs include list of 25 contaminants.								

MONITORING WAIVERS*

Contaminants	Frequency	Last Sampled	Violation
Inorganic Chemicals (IOC)	Every 9 years.	2017	NO
Synthetic Organic Chemicals (SOC)	Every 3 or 9 years.**	2017	NO

*The Washington State Department of Health reduced the monitoring requirements for IOCs and SOCs, because the source is not at risk of contamination. **Pesticides are tested once every three years and herbicides once every nine years.

LEAD & COPPER

Contaminants	MGLG	AL	Alger (90th %)	Sample Date	# Samples Exceeding AL	Violation	Typical Sources
Lead – lead at consumer's tap (ppb)	0	15	1*	2018	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.06*	2018	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits

*The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order of lowest to highest. Skagit PUD is required to collect five samples for presence of lead and copper from household taps every three years.

Susceptibility rating of potential threats to the safety of our water supply: **High**
See Source Water Assessment Program (SWAP) data on WA Department of Health website—https://fortress.wa.gov/doh/swap/index.html

How to Read the Water Quality Data Table
EPA establishes the safe drinking water regulations that limit the amount of contaminants allowed in drinking water. The tables show the concentrations of detected substances in comparison to regulatory limits. Substances not detected are not included in the table.

Maximum Contaminant Level (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 treatment technology.

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

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

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

CEDARGROVE PUBLIC WATER SYSTEM: ID# 119174

SOURCE & TREATMENT

Cedargrove water system is located on the south side of Skagit River near Concrete, serving nearly 200 residential connections. The source water is drawn from 170 foot deep well located inside a fenced and maintained property. The water is treated for iron and manganese removal through a chlorine oxidation and filtration system (ATEC) using manganese oxide media (pyrolusite). The water is pumped to a reservoir of 270,000 gallons for fire protection and system storage. Chlorine residual is maintained throughout the distribution system to sustain disinfection.

WATER QUALITY

Currently the drinking water quality meets all primary and secondary drinking water standards. Over all, the water is consider to be moderately hard with hardness at 86.9 mg/l (as calcium carbonate). Once a month, a routine distribution sample is tested for total coliform and *E.coli*. The chlorine residual levels are 0.3-0.8 mg/l and pH is in the 7-8 range. Quarterly samples are taken of untreated and treated water to test for iron and manganese levels to evaluate their removal by the ATEC filtration system. Once a year nitrate levels are measured and are typically low (<1 mg/l). The system is on a three year standard monitoring routine for lead, copper, disinfection by-products, and manganese. All of these are found to be below the established MCLs (Maximum Contaminant Level). Radionuclides are on 6 year standard monitoring and are found to be below the established MCL as well.

The Cedargrove system has been granted waivers by Washington State Department of Health (DOH) for asbestos, complete inorganics, volatile organics, herbicides, pesticides and soil fumigants. It is tested for these every three, six, or nine years. Most of these contaminants are non-detected in the well water, therefore granted waivers by DOH.

2019 DRINKING WATER RESULTS

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Contaminants	MCLG	MCL	Cedargrove	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
DISINFECTANT RESIDUAL								
Total Chlorine Residual (ppm)	4	4	0.6	0.3	0.8	2019	NO	Measure of disinfectant added to water
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	1 Positive	1 Positive Sample	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects one compliance sample per month for total coliforms and *E.coli* from the distribution system. No total coliforms or *E.coli* were detected in 2019.								
DISINFECTION BY-PRODUCTS								
Total Trihalomethanes (ppb)	N/A	80	12.2	N/A	N/A	2017	NO	By-product of drinking water chlorination
Haloacetic Acids (5) (ppb)	N/A	60	7.7	N/A	N/A	2017	NO	By-product of drinking water chlorination
Disinfection by-product samples are collected once every three years.								
INORGANIC CONTAMINANTS								
Manganese (ppm)*	0	0.05	0.003	N/A	N/A	2019	NO	Erosion of natural deposits
Nitrate (ppm)	10	10	0.35	N/A	N/A	2019	NO	Erosion of natural deposits
*Manganese sample is collected once every three years to establish removal from finished water.								
RADIONUCLIDES								
Gross Alpha (pCi/L)	0	15	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	N/A	N/A	2015	NO	Erosion of natural deposits
SYNTHETIC ORGANIC CONTAMINANTS (SOC)								
Herbicides (ppb)*	0	0	ND	N/A	N/A	2016	NO	Run off from herbicides
*SOCs include list of 11 contaminants.								

MONITORING WAIVERS*

Contaminants	Frequency	Last Sampled	Violation
Volatile Organic Chemicals (VOC)	Every 6 years	2019	NO
Inorganic Chemicals (IOC)	Every 9 years.	2019	NO
Synthetic Organic Chemicals (SOC)	Every 3 or 9 years.**	2016	NO

*The Washington State Department of Health reduced the monitoring requirements for IOCs and SOCs, because the source is not at risk of contamination. **Pesticides are tested once every three years and herbicides once every nine years.

LEAD & COPPER

Contaminants	MGLG	AL	Cedargrove (90th %)	Sample Date	# Samples Exceeding AL	Violation	Typical Sources
Lead – lead at consumer's tap (ppb)	0	15	3.5*	2017	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.17*	2017	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits

*The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order of lowest to highest. Skagit PUD is required to collect five samples for presence of lead and copper from household taps every three years.

Susceptibility rating of potential threats to the safety of our water supply: **Low**
See Source Water Assessment Program (SWAP) data on WA Department of Health website—https://fortress.wa.gov/doh/swap/index.html

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Maximum Contaminant Level (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 treatment technology.

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

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

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

FIDALGO ISLAND PUBLIC WATER SYSTEM: ID# 00932Y

SOURCE & TREATMENT

Fidalgo water system is located on Fidalgo Island in western Skagit County and serves around 717 residential and commercial connections. Water is purchased through an intertie with city of Anacortes, with their source being the Skagit River in Mount Vernon. Their water is filtered and chlorinated at the Anacortes water treatment plant on Riverbend Road. Free chlorine residual is maintained throughout our distribution system to provide sufficient disinfection.

WATER QUALITY

Currently, the drinking water quality meets all primary and secondary drinking water standards.

Fidalgo water is considered soft with hardness of 23 mg/l (as calcium carbonate).

Two routine samples a month are tested for total coliform and *E.coli*. Chlorine residual levels are between 0.65-1.14 mg/l with pH levels between 7.5-7.9. Quarterly the water is tested for disinfection by-products and is on a year testing schedule for lead and copper. All these contaminants are below the established MCLs. Additional water quality monitoring is performed by city of Anacortes and can be found on their website.

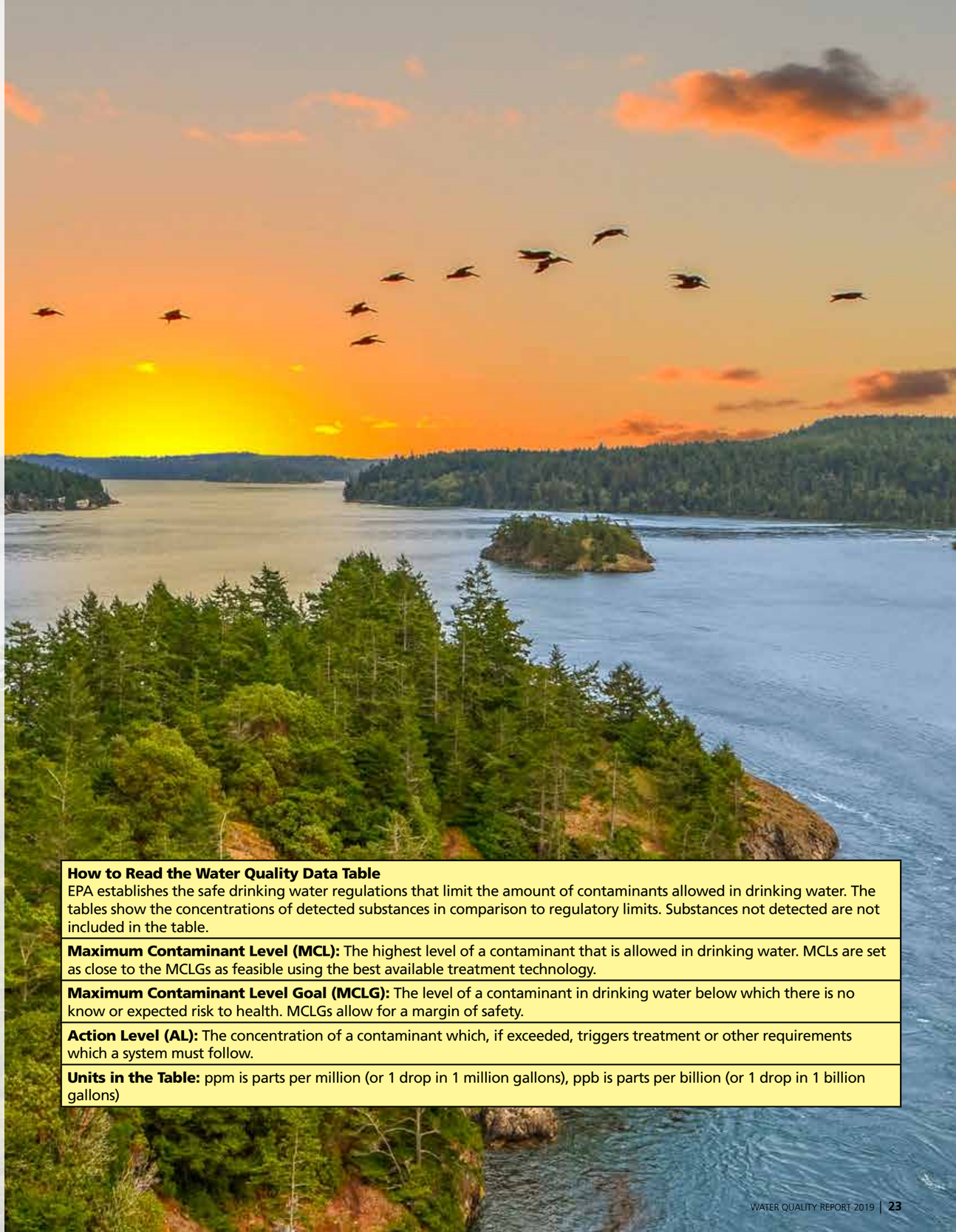
2019 DRINKING WATER RESULTS

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Water is produced by the city of Anacortes Water Treatment Plant. A more detailed water quality report can be found on their website at https://www.anacorteswa.gov/504/Water-Quality-Reports.

Contaminants	MCLG	MCL	Fidalgo Island	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
DISINFECTANT RESIDUAL								
Total Chlorine Residual (ppm)	4	4	1	0.65	1.14	2019	NO	Measure of disinfectant added to water
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	1 Positive	0	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects two compliance samples per month for total coliforms and *E.coli* from the distribution system. No total coliforms or *E.coli* were detected in 2019.								
DISINFECTION BY-PRODUCTS								
Total Trihalomethanes (ppb)	N/A	80	26.1	N/A	N/A	2019	NO	By-product of drinking water chlorination
Haloacetic Acids (5) (ppb)	N/A	60	16.5	N/A	N/A	2019	NO	By-product of drinking water chlorination

LEAD & COPPER							
Contaminants	**MGLG**	**AL**	**Fidalgo Island (90th %)**	**Sample Date**	**# Samples Exceeding AL**	**Violation**	**Typical Sources**
Lead – lead at consumer's tap (ppb)	0	15	1*	2018	0 of 10	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.13*	2018	0 of 10	NO	Corrosion of household plumbing systems; erosion of natural deposits
*The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order of lowest to highest. Skagit PUD is required to collect five samples for presence of lead and copper from household taps every three years.							



How to Read the Water Quality Data Table
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Maximum Contaminant Level (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 treatment technology.

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

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

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

MARBLEMOUNT PUBLIC WATER SYSTEM: ID# AA642

SOURCE & TREATMENT

The Marblemount water system is located on the North Cascades Highway, serving 18 residential and 14 non-residential services with customer population of around 30. Water is drawn from a 163 foot deep well and has a low susceptibility to contamination as determined by the Washington State Department of Health (DOH), so no treatment is required or in place at this time.

WATER QUALITY

Currently the drinking water quality meets all primary and secondary drinking water standards. Marblemount water is considered soft with a hardness of 50.7 mg/l (as calcium carbonate) and a pH level of 7-7.5.

Once a month, a routine distribution sample is tested for total coliform and *E.coli*. Once a year nitrate levels are measured and found to be very low (below 0.5 mg/l). The system is on three year testing schedule for lead and copper, which are below the action level (AL). Radionuclides are on six year standard testing schedule and are found to be non-detect or below the MCLs.

The Marblemount water system has been granted waivers by Washington State Department of Health (DOH) for asbestos, complete inorganics, volatile organics, herbicides, pesticides, and soil fumigants. These components are tested for every three, six, or nine years. Most of these contaminants are non-detect in the water, therefore granted waivers by DOH.

2019 DRINKING WATER RESULTS

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Contaminants	MCLG	MCL	Marblemount	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	1 Positive	0	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects one compliance sample per month for total coliforms and *E.coli* from the distribution system. No total coliforms or *E.coli* were detected in 2019.								
INORGANIC CONTAMINANTS								
Nitrate (ppm)	10	10	0.15	N/A	N/A	2019	NO	Erosion of natural deposits
RADIONUCLIDES								
Gross Alpha (pCi/L)	0	15	ND	N/A	N/A	2018	NO	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	ND	N/A	N/A	2018	NO	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	N/A	N/A	2018	NO	Erosion of natural deposits
VOLATILE ORGANIC CONTAMINANTS (VOC)								
VOCs (ppb)	0	0	ND	N/A	N/A	2016	NO	Discharge from factories

MONITORING WAIVERS*			
Contaminants	**Frequency**	**Last Sampled**	**Violation**
Inorganic Chemicals (IOC)	Every 9 years.	2017	NO
Synthetic Organic Chemicals (SOC)	Every 3 or 9 years.**	2012	NO
*The Washington State Department of Health reduced the monitoring requirements for IOCs and SOCs, because the source is not at risk of contamination. **Pesticides are tested once every three years and herbicides once every nine years.			

LEAD & COPPER							
Contaminants	**MGLG**	**AL**	**Marblemount (90th %)**	**Sample Date**	**# Samples Exceeding AL**	**Violation**	**Typical Sources**
Lead – lead at consumer's tap (ppb)	0	15	1*	2017	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.12*	2017	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
*The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order of lowest to highest. Skagit PUD is required to collect five samples for presence of lead and copper from household taps every three years.							

Susceptibility rating of potential threats to the safety of our water supply: **Low**
See Source Water Assessment Program (SWAP) data on WA Department of Health website—https://fortress.wa.gov/doh/swap/index.html

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

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

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MOUNTAIN VIEW PUBLIC WATER SYSTEM: ID# 03744Y

SOURCE & TREATMENT

Mountain View water system is located east of Mount Vernon near Big Lake and serves 13 residential connections. Water is drawn from 380 foot deep well and is treated for iron and manganese removal using an ion exchange system and a softener. Chlorine disinfection is not provided at this time.

WATER QUALITY

Currently the water quality meets all primary and secondary drinking water system parameters. Overall the water is considered to be soft with a hardness (as calcium carbonate) being non-detect and a PH level of 7.5-8.

Monthly, a routine distribution sample is tested for total coliform and *E.coli*. Additionally a once a year nitrate level is tested, and is non-detect. This system is on a three year standard monitoring for lead, copper, and complete inorganics. These parameters have been below the established MCLs. Radionuclide testing is on a six year monitoring schedule and is below the MCL.

The Mountain View water system has been granted waivers by the Washington State Department of Health for asbestos, volatile organics, herbicides, pesticides, and soil fumigants. These components are tested every three, six, or nine years. Most of these contaminants are non-detect in the source water.

2019 DRINKING WATER RESULTS

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Contaminants	MCLG	MCL	Mountain View	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	1 Positive	0	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects one compliance sample per month for total coliforms and *E.coli* from the distribution system. No total coliforms or *E.coli* were detected in 2019.								
INORGANIC CONTAMINANTS								
Nitrate (ppm)	10	10	ND	N/A	N/A	2019	NO	Erosion of natural deposits
Fluoride (ppm)	4	4	0.12	N/A	N/A	2019	NO	Erosion of natural deposits
Sodium (ppm)	N/A	N/A	46.8	N/A	N/A	2019	NO	Naturally occurring, water softeners, animal waste, road salts
RADIONUCLIDES								
Gross Alpha (pCi/L)	0	15	ND	N/A	N/A	2017	NO	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	ND	N/A	N/A	2017	NO	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	N/A	N/A	2017	NO	Erosion of natural deposits
VOLATILE ORGANIC CONTAMINANTS (VOC)								
VOCs (ppb)	0	0	ND	N/A	N/A	2016	NO	Discharge from factories

Monitoring Waivers*			
Contaminants	Frequency	Last Sampled	Violation
Synthetic Organic Chemicals (SOC)	Every 3 or 9 years.**	2012	NO
Inorganic Chemicals (IOC)	Every 9 years.	2016	NO
*The Washington State Department of Health reduced the monitoring requirements for IOCs and SOCs, because the source is not at risk of contamination. **Pesticides are tested once every three years and herbicides once every nine years.			

LEAD & COPPER							
Contaminants	MGLG	AL	Mountain View (90th %)	Sample Date	# Samples Exceeding AL	Violation	Typical Sources
Lead – lead at consumer's tap (ppb)	0	15	ND*	2019	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.7*	2019	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
*The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order of lowest to highest. Skagit PUD is required to collect five samples for presence of lead and copper from household taps every three years.							

Susceptibility rating of potential threats to the safety of our water supply: **Low**
See Source Water Assessment Program (SWAP) data on WA Department of Health website—https://fortress.wa.gov/doh/swap/index.html

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

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

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

POTLATCH PUBLIC WATER SYSTEM: ID# 69034L

SOURCE & TREATMENT

Potlatch water system is located on the west shore of Guemes Island and serves approximately 33 residential connections. The source of supply is seawater from Bellingham Channel. The treatment process consists of a multimedia filter, spiral-wound cartridge filters, reverse osmosis desalination membranes, calcite contactor, and then hypochlorite disinfection. Free chlorine is maintained throughout the distribution system to provide disinfection.

WATER QUALITY

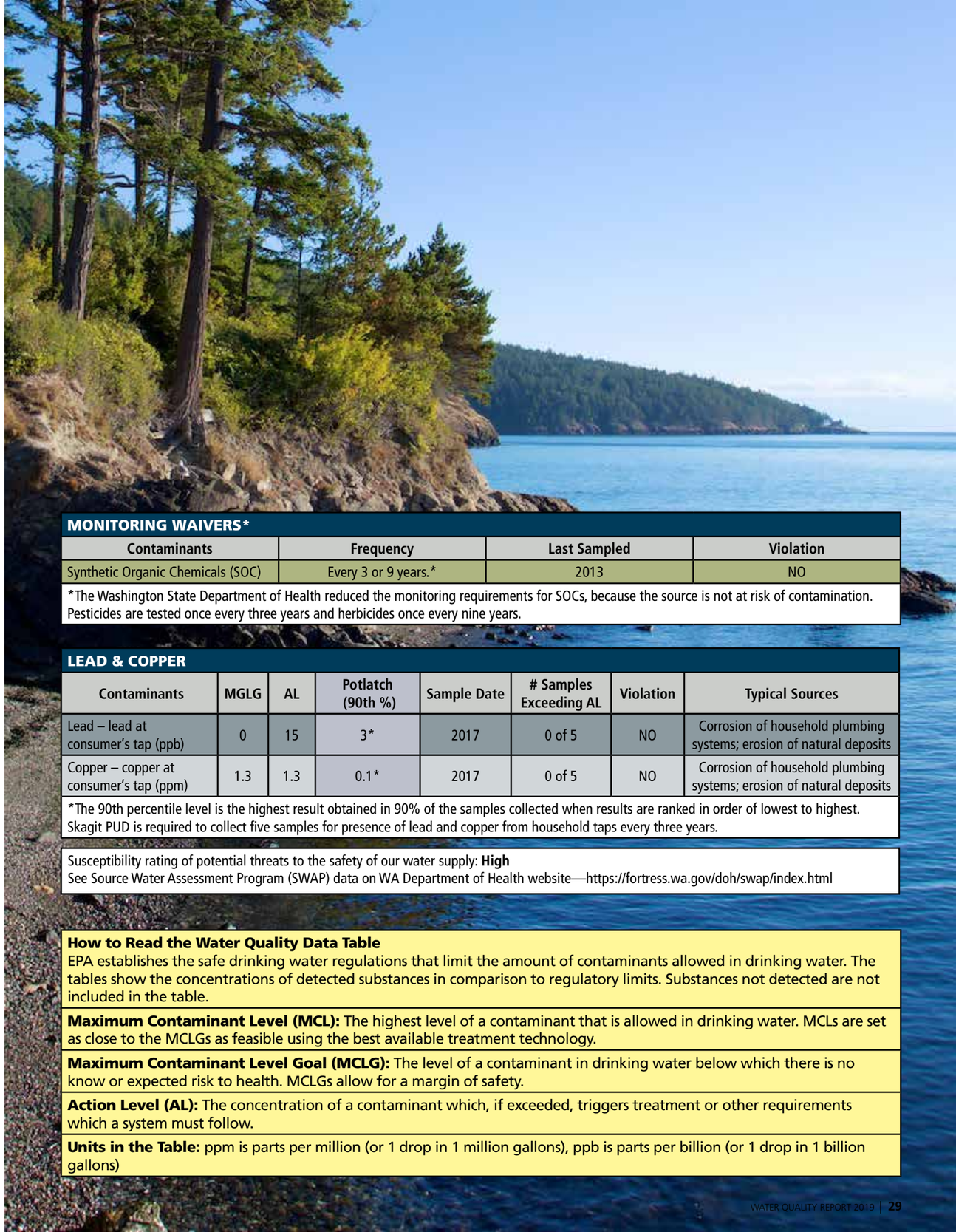
Currently the drinking water quality meets all primary and secondary drinking water standards. Over all the water is considered to be soft with hardness 19.6 mg/l (as calcium carbonate).
Once a month, a routine distribution sample is tested for total coliform and *E.coli*. Chlorine residual levels are between 0.1-0.41 mg/l and a pH of 7.5-8.5. An annual nitrate and chloride sample are measured and are below the established MLCs. The system is on a testing schedule every three years for lead, copper and disinfection by-products.

The Potlatch water system has been granted waivers by Washington State Department of Health (DOH) for complete inorganics, soil fumigants, pesticides, volatile organics, herbicides and asbestos. The system is tested for these contaminants every three, six or nine years.

2019 DRINKING WATER RESULTS

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Contaminants	MCLG	MCL	Potlatch	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
DISINFECTANT RESIDUAL								
Total Chlorine Residual (ppm)	4	4	0.3	0.1	0.41	2019	NO	Measure of disinfectant added to water
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	1 Positive	0	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects one compliance sample per month for total coliforms and *E.coli* from the distribution system. No total coliforms or *E.coli* were detected in 2019.								
DISINFECTION BY-PRODUCTS								
Total Trihalomethanes (ppb)	N/A	80	4.1	N/A	N/A	2017	NO	By-product of drinking water chlorination
Haloacetic Acids (5) (ppb)	N/A	60	1.3	N/A	N/A	2017	NO	By-product of drinking water chlorination
Disinfection by-product samples are collected once every three years.								
INORGANIC CONTAMINANTS								
Chloride	250	250	69	N/A	N/A	2019	NO	Saltwater intrusion
Nitrate (ppm)	10	10	ND	N/A	N/A	2019	NO	Erosion of natural deposits
Sodium (ppm)	N/A	N/A	33.7	N/A	N/A	2015	NO	Naturally occurring, water softeners, animal waste, road salts
Total Dissolved Solids (TDS) (ppm)	500	500	116	N/A	N/A	2015	NO	Erosion of natural deposits
RADIONUCLIDES								
Gross Alpha (pCi/L)	0	15	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	N/A	N/A	2015	NO	Erosion of natural deposits
VOLATILE ORGANIC CONTAMINANTS (VOC)								
VOCs (ppb)	0	0	ND	N/A	N/A	2016	NO	Discharge from factories



MONITORING WAIVERS*

Contaminants	Frequency	Last Sampled	Violation
Synthetic Organic Chemicals (SOC)	Every 3 or 9 years.*	2013	NO

*The Washington State Department of Health reduced the monitoring requirements for SOCs, because the source is not at risk of contamination. Pesticides are tested once every three years and herbicides once every nine years.

LEAD & COPPER

Contaminants	MGLG	AL	Potlatch (90th %)	Sample Date	# Samples Exceeding AL	Violation	Typical Sources
Lead – lead at consumer's tap (ppb)	0	15	3*	2017	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.1*	2017	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits

*The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order of lowest to highest. Skagit PUD is required to collect five samples for presence of lead and copper from household taps every three years.

Susceptibility rating of potential threats to the safety of our water supply: **High**
See Source Water Assessment Program (SWAP) data on WA Department of Health website—https://fortress.wa.gov/doh/swap/index.html

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

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

ROCKPORT PUBLIC WATER SYSTEM: ID# 736006

SOURCE & TREATMENT

The Rockport water system is located along the North Cascades Highway serving around 54 residential and six non-residential connections. Water is drawn from a 344 foot deep well and treated for iron and manganese removal using an ATEC chlorine oxidation and filtration system. Chlorine residual is maintained throughout the distribution system to maintain disinfection.

WATER QUALITY

Currently, the drinking water quality meets all primary and secondary drinking water standards. Rockport water is considered moderately hard with hardness of 109 mg/l (as calcium carbonate), and pH levels are between 7.4-7.8.

Once a month, a routine distribution sample is tested for total coliform and *E.coli.* Chlorine residual levels are between 0.3-1.2 mg/l. Quarterly the untreated and treated water is tested for iron and manganese levels to evaluate their removal from the untreated water by the ATEC. Once a year routine nitrate samples are measured and found to be non-detect. The system is on three year testing schedule for lead, copper and disinfection by-products and all have been found to be below the established MCLs. Radionuclides are on a six year testing schedule and are also below the established MCLs.

The Rockport water system has been granted waivers by Washington State Department of Health (DOH) for asbestos, complete inorganics, volatile organics, herbicides, pesticides and soil fumigants. It is tested for these parameters every three, six, or nine years with these contaminates being non-detect in the source water, therefore granted waivers by DOH.

2019 DRINKING WATER RESULTS

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Contaminants	MCLG	MCL	Rockport	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
DISINFECTANT RESIDUAL								
Total Chlorine Residual (ppm)	4	4	0.72	0.3	1.2	2019	NO	Measure of disinfectant added to water
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	1 Positive	1 Positive Sample	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects one compliance sample per month for total coliforms and *E.coli* from the distribution system. No total coilforms or *E.coli* were detected in 2019.								
DISINFECTION BY-PRODUCTS								
Total Trihalomethanes (ppb)	N/A	80	5.5	N/A	N/A	2018	NO	By-product of drinking water chlorination
Haloacetic Acids (5) (ppb)	N/A	60	4.2	N/A	N/A	2018	NO	By-product of drinking water chlorination
Disinfection by-product samples are collected once every three years.								
INORGANIC CONTAMINANTS								
Nitrate (ppm)	10	10	ND	N/A	N/A	2018	NO	Erosion of natural deposits
RADIONUCLIDES								
Gross Alpha (pCi/L)	0	15	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	N/A	N/A	2015	NO	Erosion of natural deposits

Contaminants	MCLG	MCL	Rockport	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
Synthetic Organic Contaminants (SOC)								
Herbicides (ppb)*	0	0	ND	N/A	N/A	2016	NO	Run off from herbicides
*SOCs include list of 11 contaminants.								

MONITORING WAIVERS*

Contaminants	Frequency	Last Sampled	Violation
Volatile Organic Chemicals (VOC)	Every 6 years.	2019	NO
Inorganic Chemicals (IOC)	Every 9 years.	2019	NO

*The Washington State Department of Health reduced the monitoring requirements for IOCs and VOCs, because the source is not at risk of contamination.

LEAD & COPPER

Contaminants	MGLG	AL	Rockport (90th %)	Sample Date	# Samples Exceeding AL	Violation	Typical Sources
Lead – lead at consumer's tap (ppb)	0	15	1.5*	2017	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.22*	2017	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits

*The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order of lowest to highest. Skagit PUD is required to collect five samples for presence of lead and copper from household taps every three years.

Susceptibility rating of potential threats to the safety of our water supply: **Low**
See Source Water Assessment Program (SWAP) data on WA Department of Health website—https://fortress.wa.gov/doh/swap/index.html

How to Read the Water Quality Data Table
EPA establishes the safe drinking water regulations that limit the amount of contaminants allowed in drinking water. The tables show the concentrations of detected substances in comparison to regulatory limits. Substances not detected are not included in the table.

Maximum Contaminant Level (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 treatment technology.

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

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

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

SKAGIT VIEW VILLAGE PUBLIC WATER SYSTEM: ID# 968795

SOURCE & TREATMENT

Skagit View Village water system is located on the south side of the Skagit River near the town of Concrete, and serves around 70 residential connections. The source water is drawn from 54 foot deep well and has elevated levels of iron (up to 0.5 mg/l), manganese (up to 0.045 mg/l), and dissolved carbon dioxide. The water is treated with an ATEC oxidation pyrolusite media filtration system for the iron and manganese removal, and a calcite contactor is in place for corrosion control. Free chlorine residual is maintained throughout the distribution system to maintain disinfection.

WATER QUALITY

Currently the drinking water quality meets all primary and secondary drinking water standards. Over all the water is considered to be moderately hard, with hardness of 109.9 mg/l (as calcium carbonate) and total dissolved solids are 152 mg/l.

Once a month distribution samples are tested for total coliform and *E.coli*. Chlorine residual levels are 0.52-1.26 mg/l with pH levels between 7-7.5. Quarterly the untreated and treated water is tested for iron and manganese to evaluate their removal. Once a year nitrate levels are measured and have been found to be very low (1 mg/l). The system is on 3 year standard monitoring for lead, copper and disinfection by-products. All are below the established MCLs (Maximum Contaminant Level). Radionuclides are on 6 year testing schedule and are non-detected or below MCL levels.

The Skagit View Village system has been granted waivers by Washington State Department of Health (DOH) for asbestos, inorganics, volatile organics, herbicides, pesticides and soil fumigants. These components are tested for every three, six or nine years. Most of the contaminants are non-detect in the well water, therefore granted waivers by DOH.

2019 DRINKING WATER RESULTS

The water quality information presented in the table(s) is from the most recent round of testing done according to the regulations. All data shown were collected during the last calendar year unless otherwise noted in the table(s).

Contaminants	MCLG	MCL	Skagit View Village	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
DISINFECTANT RESIDUAL								
Total Chlorine Residual (ppm)	4	4	0.93	0.52	1.26	2019	NO	Measure of disinfectant added to water
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria	0	1 Positive	0	0	0	2019	NO	Naturally present in the environment
Skagit PUD collects one compliance sample per month for total coliforms and *E.coli* from the distribution system. No total coliforms or *E.coli* were detected in 2019.								
DISINFECTION BY-PRODUCTS								
Total Trihalomethanes (ppb)	N/A	80	1.5	N/A	N/A	2017	NO	By-product of drinking water chlorination
Haloacetic Acids (5) (ppb)	N/A	60	ND	N/A	N/A	2017	NO	By-product of drinking water chlorination
Disinfection by-product samples are collected once every three years.								
INORGANIC CONTAMINANTS								
Barium (ppm)	2	2	0.006	N/A	N/A	2016	NO	Erosion of natural deposits
Nitrate (ppm)	10	10	0.6	N/A	N/A	2018	NO	Erosion of natural deposits
Sodium (ppm)	N/A	N/A	7.7	N/A	N/A	2016	NO	Naturally occurring, water softeners, animal waste, road salts
Total Dissolved Solids (TDS) (ppm)	500	500	152	N/A	N/A	2016	NO	Erosion of natural deposits

Contaminants	MCLG	MCL	Skagit View Village	Range of Detection		Sample Date	Violation	Typical Source of Contaminant
				Lowest	Highest			
RADIONUCLIDES								
Gross Alpha (pCi/L)	0	15	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	ND	N/A	N/A	2015	NO	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	N/A	N/A	2015	NO	Erosion of natural deposits
VOLATILE ORGANIC CONTAMINANTS (VOC)								
Chloroform (ppb)	80	80	1	N/A	N/A	2016	NO	By-product of drinking water chlorination
Bromodichloro-methane (ppb)	80	80	0.7	N/A	N/A	2016	NO	By-product of drinking water chlorination
Chlorodibromo-methane (ppb)	80	80	0.5	N/A	N/A	2016	NO	By-product of drinking water chlorination
Soil Fumigants (ppt)	0	200	ND	N/A	N/A	2018	NO	Runoff/leaching from soil; fumigant used on soybeans, orchards, etc.

MONITORING WAIVERS*			
Contaminants	**Frequency**	**Last Sampled**	**Violation**
Inorganic Chemicals (IOC)	Every 9 years	2016	NO
Synthetic Organic Chemicals (SOC)	Every 3 or 9 years**	2015	NO

*The Washington State Department of Health reduced the monitoring requirements for IOCs and SOCs, because the source is not at risk of contamination. **Pesticides are tested once every three years and herbicides once every nine years.

LEAD & COPPER							
Contaminants	**MGLG**	**AL**	**Skagit View Village (90th %)**	**Sample Date**	**# Samples Exceeding AL**	**Violation**	**Typical Sources**
Lead – lead at consumer's tap (ppb)	0	15	1*	2018	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper – copper at consumer's tap (ppm)	1.3	1.3	0.8*	2018	0 of 5	NO	Corrosion of household plumbing systems; erosion of natural deposits

*The 90th percentile level is the highest result obtained in 90% of the samples collected when results are ranked in order of lowest to highest. Skagit PUD is required to collect five samples for presence of lead and copper from household taps every three years.

Susceptibility rating of potential threats to the safety of our water supply: **Moderate**
See Source Water Assessment Program (SWAP) data on WA Department of Health website—https://fortress.wa.gov/doh/swap/index.html

How to Read the Water Quality Data Table
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Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a system must follow.

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons)

HEALTH EFFECTS OF COPPER

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress.

Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

YOU CAN REDUCE YOUR COPPER EXPOSURE BY FLUSHING

It is recommended that you let the water run before using it for cooking or drinking whenever the household water remains unused for more than six hours. This would include the times when you first get up in the morning or when you come home from work. The longer the water sits in your household pipes, the more copper it may contain.

Flushing the faucet means running the cold-water faucet until the water feels a cold as it can get, or for a period of about one minute. Also, avoid cooking with or consuming water from hot water taps as hot water dissolves copper more readily than cold water does.

CROSS-CONNECTION

WHAT CAN YOU DO TO PROTECT THE WATER SUPPLY?

Skagit PUD offers a program called Cross-Connection Control to help ensure that the water delivered to our customers remains a safe and reliable supply that we can all depend on. The program exists to prevent the reverse flow of water from a customer's plumbing back into the public water supply. This reversal of flow is called backflow. Cross-Connection Control is a mandated program under the Washington State Administrative Code.

One of the most effective ways to prevent backflow is the installation of a specialized plumbing assembly directly after the meter; this is called a Backflow Prevention Assembly.

However, as users of the water system, there are other ways to help prevent contamination due to backflow. Hose bibbs (outside faucets) that have been installed in the last few years now include an Atmospheric Vacuum Breaker (AVB). The AVB helps to re-direct potentially contaminated water onto the ground instead of entering your private plumbing system, in the instance of a backflow occurrence.

Common situations where this could occur is during the process of filling a bucket for washing a vehicle, filling a water trough, cleaning equipment, etc. Life is busy, so sometimes it is easier to leave the hose in the bucket while it is filling up and even leave it there once it is done. If there is a main break, or the fire department withdraws water from a close fire hydrant, the water from your private system could be sucked back into the public water supply. This means that anything that is connected to water, and especially the contents of that bucket, are pulled back into the system. The effect is the same as if you suck a beverage through a straw.

It is not possible to identify and ensure protection from EVERY water hazard in the PUD's system, change is happening constantly. However, through information, education and by working together, protecting the water supply is truly the joint responsibility of the PUD and its customers.

For questions or more information about what you can do to help, please contact Courtney Shilling, Cross-Connection Control Coordinator, at 360.848.2138 or *shilling@skagitpud.org*.

WATER USE EFFICIENCY UPDATE

In January 2008, Skagit PUD established measurable water saving goals for the six-year period from 2008 through 2013 for both the supply- and demand-side of the PUD's distribution system. These goals were established through a public process as required by the Municipal Water Law. The goals provide a benchmark for achievement and play a significant role in defining the success of Skagit PUD's Water Use Efficiency Program. The PUD re-established its six-year WUE goals in 2013 for the six-year period from 2014 through 2019. Our water use efficiency goals and the steps we are taking to meet those goals are as follows:

MEASURES

Skagit PUD's conservation program for 2014–2019 consists of 10 measures. All measures were implemented during Years 1-6 of the plan. The program reflects a continuation and/or enhancement of many of the measures in the 2008–2013 program.

Measure	Estimated Average Annual Savings 2014-19					
	2014	2015	2016	2017	2018	2019
Public Outreach	N/Q	N/Q	N/Q	N/Q	N/Q	N/Q
Indoor Retrofit Kits	265,020	530,040	795,060	1,060,080	1,325,100	1,590,120
Shower Timers	N/Q	N/Q	N/Q	N/Q	N/Q	N/Q
School Outreach	N/Q	N/Q	N/Q	N/Q	N/Q	N/Q
Toilet Leak Kits	N/Q	N/Q	N/Q	N/Q	N/Q	N/Q
Soil Moisture Meters	N/Q	N/Q	N/Q	N/Q	N/Q	N/Q
Rain Barrel Program	21,000	42,000	63,000	84,000	105,000	126,000
System Leak Detection & Repair	N/Q	N/Q	N/Q	N/Q	N/Q	N/Q
Bill Showing Consumption History	N/Q	N/Q	N/Q	N/Q	N/Q	N/Q
Large Meter Testing	N/Q	N/Q	N/Q	N/Q	N/Q	N/Q
Annual Total	**286,020**	**572,040**	**858,060**	**1,144,080**	**1,430,100**	**1,716,120**
Cumulative Total	—	—	—	—	—	**6,006,420**

WUE GOAL NO. 1

SAVE A CUMULATIVE TOTAL OF 6 MILLION GALLONS OF WATER BY 2019

For 2019, Skagit PUD's goal for estimated annual water savings through the WUE program was 1,716,120 gallons. **Skagit PUD achieved an estimated 1,810,675 gallons saved and a cumulative six-year total water savings of 6,362,690 gallons. Skagit PUD exceeded the 2014-19 water savings goal by 6%.**

Skagit PUD continues to focus its public outreach efforts on providing customers with simple water-saving ideas to use at their home or business.

In 2019, Skagit PUD's public outreach activities included staffed informational booths at local community events, festivals and fairs. Skagit PUD staff shared ideas on how to identify and stop common leaks, conserve water, and ways to use water more efficiently.

Over the years, Skagit PUD has offered school groups tours of Judy Reservoir and the water treatment plant. In 2012, Skagit PUD began piloting to elementary classrooms a new program called *The Story of Drinking Water*—an exploration of water's role in our environment and society, with an emphasis on the importance of good water stewardship practices. In 2019, Skagit PUD hosted over 700 students and parents on field trips to Judy Reservoir. In May, PUD staff also hosted community tours in celebration of Drinking Water Week.

Hardware measures provide the most quantifiable method for calculating potential water savings as compared to behavioral measures. As a result, Skagit PUD sells low-cost indoor retrofit kits, which include one 1.5 GPM low-flow showerhead, plus a kitchen and bathroom aerator. The kits sell for $11 at our main office. In 2019, Skagit PUD distributed 25 indoor retrofit kits with an estimated water savings of 265,020 gallons.

Back in 2010, Skagit PUD first introduced its rain barrel program to single family and commercial customers in order to create awareness and visibility around water use practices. In 2019, Skagit PUD placed 55 rain barrels into the community with an estimated water savings of 33,275 gallons. Although the total is not a huge water savings compared to other hardware measures, the act of collecting rainwater can be an inspiration to find other ways to conserve water around the home and at work. The PUD sells ready to install rain barrels for $60 plus tax.

Skagit PUD places an emphasis on creating public awareness of the need to use water wisely. The PUD provides outdoor water-saving tips in its *Pipeline* customer newsletter.

WUE GOAL NO. 2

REDUCE DISTRIBUTION SYSTEM LEAKAGE (DSL) TO 10% OR LESS OF TOTAL WATER PRODUCED PER YEAR

Skagit PUD operates the most expansive water system in Skagit County with over 26,000 metered services, serving approximately 70,000 people. The majority of Skagit PUD's services are within the Judy Reservoir system; however, the PUD also operates eight remote water systems that we monitor for water quality.

All water services in Skagit PUD's water systems are metered. The PUD tracks high use meters to check on accuracy. All two-inch and larger meters are tested and calibrated on a three-year rotating schedule.

In 2019, the average water loss reported from distribution system leakage for all systems operated by Skagit PUD was **6.2%.** The three-year DSL rolling average for the Judy Reservoir system stands at **9.77%,** which continues to be below the standard set by the state.

OUR VALUES

As we pursue our vision and advance our mission, we demonstrate and maintain balance among our Core Values:

QUALITY. We seek to exceed customer expectations by providing exceptional service.

ENVIRONMENTAL STEWARDSHIP. We act to preserve our region's natural resources.

FINANCIAL PRUDENCE. We strive to keep our rates as low as possible while making wise capital investments and strategic business decisions.

WATER SYSTEM PERFORMANCE 2019

Judy Reservoir Production	2,893,551/Kgals Produced
Judy Reservoir Billed	2,568,312/Kgals Billed
% Distribution System Leakage	9.0% DSL
Alger Production	9,437/Kgals Produced
Alger Billed	8,009/Kgals Billed
% Distribution System Leakage	7.5% DSL
Cedargrove Production	10,099/Kgals Produced
Cedargrove Billed	9,230/Kgals Billed
% Distribution System Leakage	4.5% DSL
Fidalgo Island Production	57,502/Kgals Produced
Fidalgo Island Billed	44,721/Kgals Billed
% Distribution System Leakage	8.9% DSL
Marblemount Production	4,373/Kgals Produced
Marblemount Billed	1,700/Kgals Billed
% Distribution System Leakage	3.9% DSL
Mountain View Production	1,226/Kgals Produced
Mountain View Billed	1,266/Kgals Billed
% Distribution System Leakage	-7.1%* DSL
Potlatch Beach Production	524/Kgals Produced
Potlatch Beach Billed	532/Kgals Billed
% Distribution System Leakage	-1.5%** DSL
Rockport Production	3,150/Kgals Produced
Rockport Billed	2,858/Kgals Billed
% Distribution System Leakage	7.7% DSL
Skagit View Village Production	4,107/Kgals Produced
Skagit View Village Billed	3,987/Kgals Billed
% Distribution System Leakage	1.5% DSL

Numbers calculated in thousands of gallons.

The chart at the left reports each system's water production performance for 2019. All water that is not authorized consumption is considered distribution system leakage (DSL). Some examples of water use considered leakage include: water main breaks, theft, meter inaccuracies, meter reading errors, data collection and calculation errors.

The DSL calculation also takes into account water that is produced but not billable, for example: backwash, customer leak adjustments, estimated fire suppression usage, estimated project line flushing, etc.

The total average DSL in 2019 for all systems is 6.2%. The DSL standard set by the state is 10% or less for the last three-year average.

**Denotes meter inaccuracies.*

***Meter read timing factor*

DROPS NEED WATTS
SAVE WATER & ENERGY BY SHOWERING BETTER

Water and energy work together. Have you ever picked up a gallon of water or milk from the fridge? It's pretty heavy, right? A lot of energy is used to carry every gallon of water you use from a drinking water source to a treatment plant that makes it safe to drink.

After water leaves the treatment plant, more energy is needed to carry it through water pipes to your house. Imagine the journey it has taken—and just how tired you would be after carrying that much water all day!

And the work doesn't stop there. If you want that water to be hot, it takes energy to warm it up before it hits the tap. Here's some food for thought—the energy it takes to treat and deliver the water that just 10 houses use in a year could power your home's refrigerator for more than two years!

That's why it's so important not to waste water at home. Don't leave the water on when you brush your teeth. Make sure to turn off the faucet all the way after you wash your hands. If water drips from the faucet after you turn it off, it could be a leak. One of the best places to save both water and energy at home is in your shower. Besides taking shorter showers, the U.S. Environmental Protection Agency's WaterSense® program has some tips for how you and your family can "shower better."

SHOWERING FACTS

The shower is a place where we can clean up, cool off, wake up, or relax after a long day. But it's also a place where we waste a lot of water and energy!

Consider this:

- The average shower lasts eight minutes. Since a standard showerhead has a water flow of 2.5 gallons per minute, each shower uses 20 gallons of water!
- Across the United States, we use more than one trillion gallons of water each year just for showering.

Never fear! You can still save water and energy. WaterSense has a special label for showerheads that use less water but still provide a great spray of water when you shower. If your family uses a WaterSense labeled showerhead:

- Every shower, you'll save enough electricity to power a 60-watt light bulb for eight hours.
- Every year, you'll save the amount of water it takes to wash more than 70 loads of laundry.

DREAMING OF A BETTER BATHROOM?

Bathrooms are by far the largest water users in the home, accounting for more than half of all the water that families use indoors. If you are planning to remodel your bathroom, did you know plumbing fixtures are available in a wide variety of colors, models, and prices to help you save water and money?

Advances in plumbing technology and design mean that faucets, showers, and toilets can use significantly less water than standard models while still delivering the rinse, spray, and flush you expect.

Skagit PUD is a partner in the EPA's WaterSense program, which encourages customers to look for WaterSense labeled products. The products have been independently certified for efficiency and performance, and promote water-saving techniques that reduce stress on water systems and the environment. Just look for the WaterSense label to find products at retailers in our area.

SAVE MONEY, SHOWER BETTER

An American taking a 5-minute shower uses more water than the average person in a developing country uses for an entire day.

Installing a low-flow showerhead takes only minutes. Low-flow means it uses 2.0 gallons per minute. You'll never notice a difference in water pressure, but you'll cut your water use and your water heating bills. Skagit PUD sells a quality, low-flow, multi-mode massage showerhead and ultra efficient faucet aerators kits for just $11.

Install these items today for more efficient and enjoyable showering with better faucet flow.

HARVESTING RAINWATER WITH RAIN BARRELS

Besides helping the environment, an obvious reason for harvesting rainwater is to save money. Depending on the size of your house and the amount of rainfall in your area, you can collect a substantial amount of rainwater with a simple system.

Generally a rain barrel is made using a 55-gallon drum, a vinyl garden hose, couplings, a screen grate to remove debris and keep insects out, and other materials found at most hardware stores.

Rain barrels can be constructed in a number of ways, but they all serve the same purpose — to collect rainwater and decrease the amount of stormwater runoff that leaves your property. Using rain barrels is one way to decrease your household's impact on local waterways and to become a good steward of the local watershed.

WHY USE RAIN BARRELS?

During the summer months it is estimated that nearly 40 percent of household water is used for lawn and garden maintenance. A rain barrel collects water and stores it for those times that you need it most — during the dry summer months. Using rain barrels potentially helps homeowners lower water bills, while also improving the vitality of plants, flowers, trees, and lawns.

The average rainfall of one inch within a 24-hour period can produce more than 700 gallons of water that runs off the roof of a typical house.

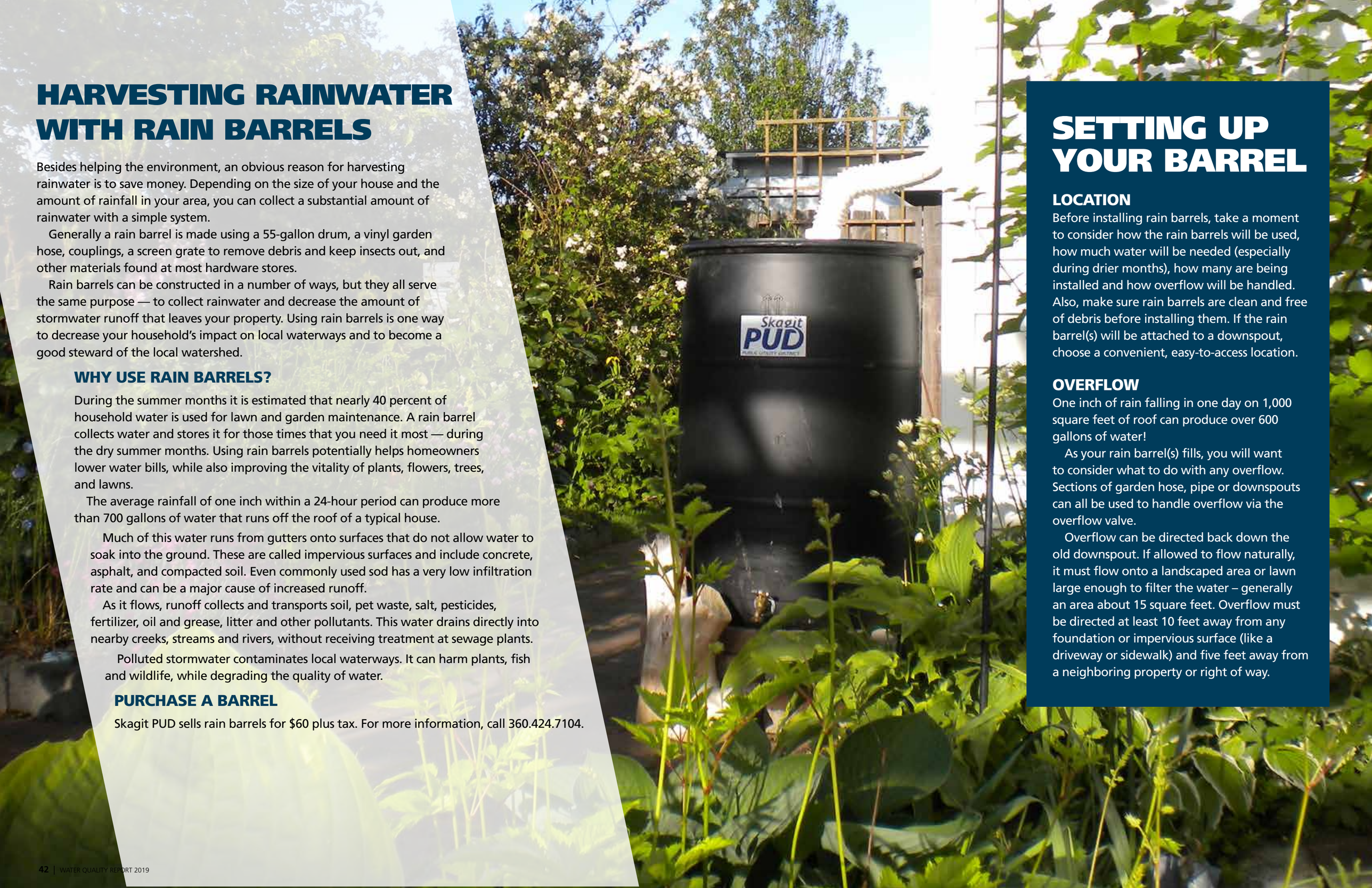
Much of this water runs from gutters onto surfaces that do not allow water to soak into the ground. These are called impervious surfaces and include concrete, asphalt, and compacted soil. Even commonly used sod has a very low infiltration rate and can be a major cause of increased runoff.

As it flows, runoff collects and transports soil, pet waste, salt, pesticides, fertilizer, oil and grease, litter and other pollutants. This water drains directly into nearby creeks, streams and rivers, without receiving treatment at sewage plants.

Polluted stormwater contaminates local waterways. It can harm plants, fish and wildlife, while degrading the quality of water.

PURCHASE A BARREL

Skagit PUD sells rain barrels for $60 plus tax. For more information, call 360.424.7104.



SETTING UP YOUR BARREL

LOCATION

Before installing rain barrels, take a moment to consider how the rain barrels will be used, how much water will be needed (especially during drier months), how many are being installed and how overflow will be handled. Also, make sure rain barrels are clean and free of debris before installing them. If the rain barrel(s) will be attached to a downspout, choose a convenient, easy-to-access location.

OVERFLOW

One inch of rain falling in one day on 1,000 square feet of roof can produce over 600 gallons of water!

As your rain barrel(s) fills, you will want to consider what to do with any overflow. Sections of garden hose, pipe or downspouts can all be used to handle overflow via the overflow valve.

Overflow can be directed back down the old downspout. If allowed to flow naturally, it must flow onto a landscaped area or lawn large enough to filter the water – generally an area about 15 square feet. Overflow must be directed at least 10 feet away from any foundation or impervious surface (like a driveway or sidewalk) and five feet away from a neighboring property or right of way.

Skagit PUD
PUBLIC UTILITY DISTRICT

LEARN MORE ABOUT YOUR WATER

skagitpud.org

1415 FREEWAY DRIVE, MOUNT VERNON WA 98273
360.424.7104 **pud@skagitpud.org**