



ANNUAL
WATER REPORT
*Water testing
performed in 2010*



Presented By _____
City of Issaquah

PWS ID#: 363505

Quality First Quality

Once again we are proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2010. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us to continue providing you and your family with high-quality drinking water.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions or concerns, we are always available to assist you.

Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

Questions?

For more information about this report, or for questions related to your drinking water, please call Gregory P. Keith, Manager of Water Operations for the City of Issaquah, at (425) 837-3470.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The Issaquah City Council meets the first and third Monday of each month, beginning at 7:30 p.m. Meetings are held in the Council Chambers located at City Hall South, 135 East Sunset Way. The Council Utilities, Technology and Environmental Committee (UTEC) meets the second Tuesday of each month, beginning at 5:30 p.m. Meetings are held at City Hall Northwest at 1775 12th Avenue NW. All meeting information can be located on the City's web site, www.ci.issaquah.wa.us.

Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

2010 Water Production and Purchases

The City's distribution system data, including leakage, is presented below:

Water Production and Purchases	687.1 million gallons
Authorized Consumption	621.0 million gallons
Distribution System Leakage	66.1 million gallons
2010 Leakage	9.6%
3-year Average	9.1%

Resource-Efficient Water Management

Conservation and efficient use of water is an important strategy for protecting our local and regional water resources. Since 1996, the Resource Conservation Office has worked with residents, businesses, schools, and City operations to help ensure efficient water use.

Water use is tracked as a City sustainability indicator to help gauge progress toward long-term community environmental goals. Water conservation goals target 195 gallons per capita per day on average by 2015. Additional goals include a savings of 51,000 gallons of water per day on an annual average basis and 67,000 gallons per day during the peak (summer) season by 2013.

In 2010, water conservation investments saved an average of 21,400 gallons of water per day. This is in addition to approximately 62,900 gallons per day of water savings since 2008. These add up to an estimated savings of more than 20 million gallons of water in the last three years alone.

City engineering and operations professionals also work to reduce water losses with important investments in our water mains, reservoirs, and other infrastructure. In 2010, the City system leakage is estimated at 9.6 percent. Ongoing efforts in operational practices, aging water main replacement, and other programs seek to continue to reduce this figure below the State-required 10 percent limit.

For more information about the water conservation programs offered by the City of Issaquah, please visit www.ci.issaquah.wa.us/rco or call (425) 837-3400.

Lead and Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we 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.

What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We also inspect and track the testing of each backflow preventer to make sure that it is providing maximum protection.

For more information, review the Cross-Connection Control Manual from the U.S. EPA's Web site at <http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/index.cfm>. You can also call the Safe Drinking Water Hotline at (800) 426-4791.

Substances That Could Be in Water

In order to ensure that tap water is safe to drink, the U.S. EPA and/or the Washington State Department of Health prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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

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

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

The major portion of the Issaquah water system is a groundwater source served by four wells: two in the northeast section of Issaquah and two in the northwest section. The wells are deep: two are 100 feet deep, one is 200 feet deep, and one is 400 feet deep. Chlorine is added at the well sites as a disinfectant to destroy harmful microorganisms. The City's water is conveyed through 110 miles of water main, through 12 water booster stations, and stored in one of 19 reservoirs. Total water storage is just over 12 million gallons. The 2010 combined well and purchased water production was 691 million gallons of high-quality drinking water, delivered to approximately 17,200 customers through just over 6,500 water connections. Issaquah's well water and purchased water are not mixed, as the distribution systems are separated. Issaquah also has emergency water connections with the Sammamish Plateau Water and Sewer District, allowing the City to access additional fire storage volumes.

We continue to provide purchased water from the Cascade Water Alliance (CWA) to the Issaquah Highlands, Montreux, and the Lakemont areas. Water purchased from the CWA is fluoridated whereas Issaquah well water is not, with the exception of the Talus urban village area.

Currently, the Cascade Water Alliance water source originates at the City of Seattle's South Fork Tolt River and Cedar River watersheds. The Washington State Department of Health has designated both sources as having a low vulnerability to contamination. Seattle processes its drinking water with filtration and disinfection, with adjustments for pH (for water hardness), and adds fluoride. To learn more about Seattle's watersheds, visit the U.S. EPA's Surf Your Watershed Site at www.epa.gov/surf.

Cascade Water Alliance, whose mission it is to provide safe, reliable water to you today and tomorrow, completed its purchase of Lake Tapps in Pierce County, and was granted water rights by the State, ensuring the region its first new drinking water supply in decades. The purchase and approval to use this lake for a municipal water source ensures future generations a safe and reliable water supply. Cascade will develop the new municipal water supply in future years. Meanwhile, Cascade will be managing Lake Tapps for recreation while enhancing fish habitat in the White River.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Lower Issaquah Valley Aquifer: (Wells 1,2,4,5-Talus)		CWA-Cedar Supply: (Montreux, Lakemont, Issaquah Highlands)		CWA-Tolt Supply: (Montreux, Lakemont, Issaquah Highlands)		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Arsenic ¹ (ppb)	2007	10	0	9.9	ND–9.9	0.5 ²	NA	ND ²	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2010	2	2	NA	NA	0.0018	NA	0.0013	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2010	[4]	[4]	0.34	0.11–0.64	0.55	0.05–1.26	0.55	0.05–1.26	No	Water additive used to control microbes
Chromium (ppb)	2010	100	100	NA	NA	0.8	NA	0.6	NA	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride (ppm)	2010	4	4	0.99 ³	0.80–1.21	0.95	0.7–1.1	1.0	0.9–1.2	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2010	60	NA	0.1	ND–2.1	23.8	18.5–36.4	23.8	18.5–36.4	No	By-product of drinking water disinfection
Nitrate (ppm)	2010	10	10	NA	NA	0.02	NA	0.13	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2010	80	NA	4.37	ND–12.2	36.1	15.3–51.4	36.1	15.3–51.4	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2010	TT	NA	NA	NA	0.9	0.4–1.8	1.3	1.2–1.4	No	Naturally present in the environment
Turbidity ⁴ (NTU)	2010	TT	NA	NA	NA	4.5	0.2–4.5	0.11	0.04–0.11	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2010	TT=95% of samples<0.3	NA	NA	NA	NA	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2009	1.3	1.3	1.3	4/42	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2009	15	0	6	1/42	No	Corrosion of household plumbing systems; Erosion of natural deposits

¹While your drinking water meets U.S. EPA's standard for arsenic, it does contain low levels of arsenic. U.S. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

²Sampled in 2010.

³Talus Urban Village area only.

⁴Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of water quality and the effectiveness of disinfectants.

Definitions

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

MCL (Maximum Contaminant Level): The 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

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

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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