

Presented By  
City of Issaquah



*Annual*  
**WATER  
QUALITY  
REPORT**

*Reporting Year 2011*

PWS ID#: 363505

## Meeting the Challenge

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2011. Over the years, we have dedicated ourselves to producing drinking water that meets all State and Federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts or concerns about the information in this report. After all, well-informed customers are our best allies.

## Water Conservation

You play a role in using water wisely and can save money in the process. Be conscious of the amount of water your household is using and look for ways to avoid wasting water. Here are a few tips:

1. Turn off the tap when brushing your teeth.
2. Take a 5-minute shower! You'll find it's plenty of time and saves energy for water heating, uses less water, and reduces wastewater flows.
3. Dishwashers and most clothes washers use the same amount of water for every cycle, regardless of how full they are loaded. Get more for your money and wash only full loads!
4. Check your toilets for leaks once a year. Use a leak-detection dye strip or put a few drops of food coloring in the tank. Wait 10 minutes. If color shows in the bowl, you have a leak. Many leaks are silent and can easily waste 100 gallons a day. Fix it and save more than 30,000 gallons a year!
5. Water your lawn and garden wisely. Use water timers or irrigation controllers, but be sure to adjust them every week. Plant water needs change dramatically through the irrigation season.
6. Look for WaterSense-labeled faucets, toilets, and showerheads – these have been tested to reduce water use and offer exceptional performance.

## 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 prescribe 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: they range in depth from 100-400 feet. Chlorine is added at the well sites as a disinfectant to destroy any 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 2011 combined well and purchased water production was 700 million gallons of high-quality drinking water, delivered to approximately 21,000 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](http://www.epa.gov/surf).

Cascade Water Alliance, whose mission is to provide its members with safe, clean, and reliable water in a cost-effective and environmentally responsible manner, 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. For more information, go to [www.cascadewater.org](http://www.cascadewater.org).

## 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 third Thursday of each month, beginning at 6:00 p.m. Meetings are held in the Pickering Room at City Hall Northwest, 1175 12th Avenue NW. All meeting information can be located on the City's Web site, [www.ci.issaquah.wa.us](http://www.ci.issaquah.wa.us).

## Important Health Information

While your drinking water meets the U.S. EPA's standard for arsenic, it does contain low levels of arsenic. The 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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants 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: (425) 837-3470.

## 2011 Water Production and Purchases

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

Water Production and Purchases	704.43 million gallons
Authorized Consumption	633.51 million gallons
Distribution System Leakage	70.92 million gallons
2011 Unaccounted-for Water	10.10%
3-year Average	9.10%

## Resource-Efficient Water Management

Conservation and efficient use of water are important strategies for protecting our local and regional water resources. Since 1996, the City of Issaquah has worked with residents, businesses, schools, and City operations to help ensure water is used efficiently. Water use is tracked as a Sustainable City Indicator to help gauge progress toward long-term community goals.

The water system has set goals to reduce average household water use to 195 gallons per day by 2015. In addition, the City has targeted savings of 51,000 gallons of water per day on an annual average basis by 2013.

In 2011, water conservation investments saved an average of 14,300 gallons of water per day. This is in addition to approximately 84,300 gallons per day of water savings since 2008, all of which adds up to an estimated savings of more than 30 million gallons of water in the last four years.

City public works professionals also work to reduce water leakage with investments in water mains, reservoirs, and other infrastructure. In 2011, the water system leakage is estimated at 10.10 percent. Ongoing efforts in operational practices, aging water main replacement, and other programs seek to bring 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](http://www.ci.issaquah.wa.us) or call (425) 837-3400.

## Preventing Backflow Contamination

If you have a water connection to an irrigation or fire sprinkler system, boiler, pool/spa, water feature, or photo development equipment, State law requires that you install a backflow prevention assembly and have it tested annually. A backflow prevention assembly will prevent contaminated water from flowing back into your drinking water or into the City's water system. Most residences and businesses with backflow prevention assemblies are registered with the City of Issaquah Water Division, and we thank you for your cooperation. If you haven't been testing your assembly, please contact the Water Quality Section to help you find a tester and protect the water you drink.

You can help protect the water system; if you know of a potential threat to our drinking water or have questions about backflow, please feel free to contact the Water Quality Section at (425) 837-3470.

## Cryptosporidium

*Cryptosporidium* is a microbial parasite found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immune-compromised people are at greater risk of developing life-threatening illness. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

The Lower Issaquah Valley Aquifer water source is a groundwater source and therefore is not required to be tested for *Cryptosporidium*.

The CWA water source was tested for *Cryptosporidium* in 2011. *Cryptosporidium* was detected in one of four samples from the Tolt raw water supply and was not detected in any samples from the Cedar raw water supply. The levels found in both sources were very low compared to typical rivers and streams throughout the country. Although chlorination is not effective against *Cryptosporidium*, ozone disinfection, which is used at the Cedar and Tolt treatment plants, is very effective at destroying *Cryptosporidium* and other microbes.

## Lead in Home Plumbing

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 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](http://www.epa.gov/safewater/lead).

## 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 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												
				Lower Issaquah Valley Aquifer (Wells 1,2,4,5-Talus)			CWA-Cedar Supply (Montreux, Lakemont, Issaquah Highlands)			CWA-Tolt Supply (Montreux, Lakemont, Issaquah Highlands)		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE	
Arsenic (ppb)	2007	10	0	9.9	ND-9.9	NA	NA	NA	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	
Barium (ppm)	2011	2	2	NA	NA	0.0014	NA	0.0012	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	
Cadmium (ppb)	2011	5	5	NA	NA	ND	NA	0.8	NA	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints	
Chlorine (ppm)	2011	[4]	[4]	0.33	0.09-0.56	0.55	0.03-1.18	0.55	0.03-1.18	No	Water additive used to control microbes	
Chromium <sup>1</sup> (ppb)	2011	100	100	NA	NA	0.2	NA	0.2	NA	No	Discharge from steel and pulp mills; Erosion of natural deposits	
Fluoride (ppm)	2011	4	4	0.89 <sup>2</sup>	0.68-1.10 <sup>2</sup>	0.8	0.6-1.0	0.8	0.4-1.1	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	
Haloacetic Acids [HAA] (ppb)	2011	60	NA	0.42	ND-2.4	26.64	ND-43.9	26.64	ND-43.9	No	By-product of drinking water disinfection	
Nitrate (ppm)	2011	10	10	0.33	ND-0.61	0.09	NA	0.11	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	
TTHMs [Total Trihalomethanes] (ppb)	2011	80	NA	5.09	ND-13.3	38.2	14-55.5	38.2	14-55.5	No	By-product of drinking water disinfection	
Total Organic Carbon (ppm)	2011	TT	NA	NA	NA	0.7	0.3-1.2	1.3	1.2-1.6	No	Naturally present in the environment	
Turbidity <sup>3</sup> (NTU)	2011	TT	NA	NA	NA	2.9	0.2-2.9	0.15	0.04-0.15	No	Soil runoff	
Turbidity (Lowest monthly percent of samples meeting limit)	2011	TT	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					
Lead (ppb)	2009	15	0	6	1/42	No	Corrosion of household plumbing systems; Erosion of natural deposits					

<sup>1</sup>The value reported reflects naturally occurring total chromium and not hexavalent chromium.

<sup>2</sup>Talus Urban Village area only.

<sup>3</sup>Turbidity 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 and the filtration system.

## 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.