

ANNUAL  
WATER  
QUALITY  
REPORT

*Water testing performed in 2008*



PWS ID#: 363505

## Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2008. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges 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 about the information in this report. After all, well-informed customers are our best allies.

## 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 Utilities Committee meets the first Thursday of each month, beginning at 5:00 p.m. Meetings are held at City Hall Northwest at 1775 12th Avenue NW. All meeting information can be found on the City's Web site, [www.ci.issaquah.wa.us](http://www.ci.issaquah.wa.us).

## Questions?

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

## 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 Board 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. The water is conveyed through 100 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 2008 combined well and purchased water production was just over 696 million gallons of high-quality drinking water, delivered to approximately 15,000 customers through just over 6,000 water connections. 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 Cascade Water Alliance (CWA) to Issaquah Highlands, Montreux, and the Lakemont areas. The Issaquah Highlands water source was switched to the City's well source on November 13, 2008 (while inspections and repairs were made to the CWA water line), and was returned to CWA water on January 5, 2009. Water purchased from CWA is fluoridated whereas Issaquah

well water is not, with the exception of the Talus urban village area.

The water source for the Talus urban village was permanently switched from CWA water to the City's well water source on July 15, 2008. The well water for Talus is treated with fluoride. Issaquah's well water and CWA's water are not mixed, as the distribution systems are separated.

The CWA, a regional drinking water supplier, purchases water from Seattle and provides it to Issaquah and other members. Eight municipalities and water districts in King County make up Cascade's membership. The water source originates at the City of Seattle's South Fork Tolt River and Cedar River watersheds. The watersheds, owned by Seattle Public Utilities, are located in remote, uninhabited areas in the Cascade mountains. Seattle enforces an aggressive watershed protection program; agriculture and industrial activities are not allowed. 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 Web site at [www.epa.gov/surf](http://www.epa.gov/surf).

## Water Conservation

Water conservation is a critical element of the community's strategy for protecting and managing our local and regional water resources. Since 1996, the City of Issaquah's water conservation program has worked actively with residents, local businesses, schools, and our own City operations in order to help conserve this important resource.

The City adopted an updated water conservation goal in January of 2008, with a target for saving 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 2008 residents, local businesses, schools, and City operational improvements saved an average of 33,300 gallons of water per day. That adds up to an impressive estimated savings of more than 12,175,000 gallons of water in 2008.

In addition, the City works to minimize water losses through leaks in our infrastructure:

2008 Water Production and Purchases	Authorized Consumption	Distribution System Leakage
684.69 million gallons (mg)	616.41 mg	68.28 mg 10%

The City is on target to meet the state standard of 10 percent or less of total production and will continue to evaluate its distribution leakage on an annual basis.

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

## Testing for 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. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *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*.

In 2008, the CWA water source was monitored for *Cryptosporidium*. The results denoted low levels of the organism; it was detected in one of three samples collected from the Cedar supply. *Cryptosporidium* was not detected in any of the four Tolt samples. The levels found were very low when compared to typical rivers and streams throughout the country. There have been no disease outbreaks associated with Issaquah's drinking water. Although chlorination is not effective against *Cryptosporidium*, ozone disinfection, conducted at the Cedar and Tolt treatment plants, is very effective at destroying *Cryptosporidium* and other microbes.

## 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.

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).

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.



Dog and cat owners often notice the appearance of black or pink growths in their pet's water bowl. These growths come from various types of mold in the air—not the water. Similar growths can also be found on showerheads and shower curtains. Wash your pet's water bowl frequently and be sure to have plenty of fresh water available at all times.

### Is it safe to drink water from a garden hose?

Substances used in vinyl garden hoses to keep them flexible can get into the water as it passes through the hose. These chemicals are not good for you nor are they good for your pets. Allow the water to run for a short time in order to flush the hose before drinking or filling your pets' drinking containers. There are hoses made with "food-grade" plastic that will not contaminate the water. Check your local hardware store for this type of hose.

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any biological, volatile organic, inorganic, or synthetic organic contaminants. The following tables show only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

Because the concentrations of certain substances do not fluctuate frequently, the Washington State Department of Health does not require annual testing for all of these substances. 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-Issaquah Highlands, Talus)	CWA-Cedar Supply (Montreux, Lakemont, Issaquah Highlands, Talus)		CWA-Tolt Supply (Montreux, Lakemont, Issaquah Highlands, Talus)				
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
<b>Arsenic</b> (ppb)	2007	10	0	9.9	ND-9.9	ND <sup>1</sup>	NA <sup>1</sup>	ND <sup>1</sup>	NA <sup>1</sup>	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
<b>Barium</b> (ppm)	2008	2	2	ND	NA	0.0015	NA	0.0015	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
<b>Bromate</b> (ppb)	2008	10	10	NA	NA	0.05	ND-0.7	0.13	ND-0.77	No	By-product of drinking water disinfection
<b>Chlorine</b> (ppm)	2008	[4]	[4]	0.35	0.03-0.58	0.61	0.03-1.22	0.61	0.03-1.22	No	Water additive used to control microbes
<b>Fluoride</b> (ppm)	2008	4	4	0.90 <sup>2</sup>	0.86-0.97 <sup>2</sup>	0.97	0.8-1.0	1	0.9-1.1	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
<b>Haloacetic Acids [HAA]</b> (ppb)	2008	60	NA	0.23	ND-1.9	16.41	12-24.7	16.41	12-24.7	No	By-product of drinking water disinfection
<b>Nitrate</b> (ppm)	2008	10	10	ND	NA	ND	NA	0.1	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2008	80	NA	2.10	ND-7.4	26.6	6.3-54.8	26.6	6.3-54.8	No	By-product of drinking water chlorination
<b>Turbidity<sup>3</sup></b> (NTU)	2008	TT	NA	NA	NA	2.6	0.2-2.6	0.23	0.04-0.23	No	Soil runoff
<b>Tap water samples were collected for lead and copper analyses from sample sites throughout the community</b>											
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE				
<b>Copper</b> (ppm)	2006	1.3	1.3	0.35	0/64	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives				
<b>Lead</b> (ppb)	2006	15	0	4.8	0/64	No	Corrosion of household plumbing systems; Erosion of natural deposits				

## IDSE SAMPLING RESULTS<sup>4</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Lower Issaquah Valley Aquifer: (Wells 1,2,4,5-Issaquah Highlands, Talus)		CWA-Cedar Supply (Montreux, Lakemont, Issaquah Highlands, Talus)		CWA-Tolt Supply (Montreux, Lakemont, Issaquah Highlands, Talus)		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
<b>Haloacetic Acids [HAA]–IDSE</b> (ppb)	2008	0.62	ND–5	26.04	10.8–51.7	26.04	10.8–51.7	By-product of drinking water disinfection
<b>TTHMs [Total Trihalomethanes]–IDSE</b> (ppb)	2008	0.24	ND–1.3	35.92	26.9–46.1	35.92	26.9–46.1	By-product of drinking water disinfection

## 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.



Footnotes: \_\_\_\_\_

<sup>1</sup> Sampled in 2008.

<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 filtration systems.

<sup>4</sup> In 2008, we complied with a U.S. EPA requirement to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection by-product concentrations. Disinfection by-products (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.