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You're receiving this mailed report as part of a federal reporting requirement for municipal water systems.



## Message from the Director

When you talk about water quality, it starts with the source—where your water comes from. Other regions' water sources have to deal with the results of sewage, industrial discharge, lawn chemical runoff, and other contaminants. Not so in Seattle, which gets its water from rain and snow falling on protected and pristine watershed land in the Cascades. Because our sources are cleaner to start with, we don't have to treat them as much, and that combination gives us some of the highest quality surface source water in the nation. And because our water is mostly gravity fed, we don't use a lot of energy to deliver it to you. I'm happy to say that our water quality, as indicated in this federally required report, continues to be some of the best water in the world, a great value, and one more reason to celebrate our region's famous quality of life.

Ray Hoffman

Director, Seattle Public Utilities



## Help us serve you better

Take part in our quick, confidential survey and we'll use the results to improve our service. Find it at [www.seattlewater.org](http://www.seattlewater.org).



## Celebrating Seattle's Water: Drinking Water Quality Report 2009



## Why we produce this report

The federal Environmental Protection Agency (EPA) sets regulations on water quality and ensures you are informed about your community's water quality through this required annual report. Since we are mandated to send it, we use the opportunity to share other important information about your water as well. It costs \$0.32 (including mailing) to get it to your home. In line with Seattle's commitment to sustainability, this report is printed with soy-based inks on 100 percent post-consumer recycled paper.



## What you do to conserve helps salmon, too

Ample clean water is essential for healthy salmon populations. Everything you do to use water efficiently helps keep plenty of water in our rivers and streams. Conserving is especially important in the summer and early fall, when flows are lowest.

## From watershed to water glass



Have you ever turned on the tap and wondered about the journey that water took to get to your glass? Well, here's the story of our water system:

Seattle's water comes almost exclusively from two pristine Cascade Mountain watersheds. About 70 percent comes from the Cedar River watershed, and provides water for neighborhoods south of Green Lake. The remaining 30 percent comes from the South Fork of the Tolt River watershed for North Seattle, with a small percentage (< one percent) from our wells. The wells, which were not used in 2009, are located in Burien and are used only occasionally as a supplemental supply.

Since both watersheds are publicly owned by the City of Seattle, Seattle Public Utilities (SPU) has protected them by prohibiting agricultural, industrial, residential and recreational activities. This vigorous protection program means there is little opportunity for contaminants to enter the water. However, there is always some potential for naturally occurring sources of contamination.

The sources of drinking water (both tap and bottled) 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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In Seattle's surface water supplies, the potential sources of contamination include:

- microbial contaminants, such as viruses, bacteria, and protozoa from wildlife;
- inorganic contaminants, such as salts and metals, which are naturally occurring; and
- organic contaminants, which result from chlorine combining with the naturally occurring organic matter.

Our water travels from the Cascade Mountain watersheds and then gets treated at either the Tolt Reservoir or Lake Youngs, east of Renton, to ensure it is free of contaminants, before being sent through water mains to the pipes in your home.



## Bottle versus tap—the facts

For those of us looking to save money (and who isn't, these days?), drinking tap water instead of bottled water is the smart choice. Bottled water costs up to 1,000 percent more than tap water. Add to that the environmental cost of the plastic, manufacturing, distribution and disposal of those bottles and we think you'll agree: with tap water as clean and tasty as ours, why not save money and be green at the same time?

## A protected source for water offers other good news

You may have read in the news of concern around the country about pharmaceuticals and personal care products getting into water supplies. The good news for the Seattle region is that because of our protected watersheds, there are no opportunities for these contaminants to get into our water system. One less thing to worry about!

## In case of emergency...

If there's a flood, earthquake or other disaster, it may be three days or more before normal services—like water and electricity—come back on line. So be prepared: follow the rule of thumb of keeping on hand one gallon of drinking water per day for each person in your household.



## About our drinking water quality



### Who's making sure our water is safe to drink?

To ensure that tap water is safe to drink, the Environmental Protection Agency and the Washington State Department of Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration and the Washington State Department of Agriculture regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

As part of this process, the state reviews municipalities' water sources, through the Source Water Assessment Program conducted by the Department of Health (DOH) Office of Drinking Water. According to DOH, all surface waters in Washington, including Seattle's, are given a contaminant susceptibility rating of "high," regardless of whether contaminants have been detected or whether there are any sources of contaminants in the watershed. Information on the source water assessments is available from the DOH Web site at <https://fortress.wa.gov/doh/eh/dw/swap/maps/>.

### Are contaminants a health risk?

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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

### Our results

The results of water quality monitoring in 2009 are shown in the table below. These results are for parameters that are regulated by the federal and state agencies and are detected in our water. In addition to what is reported here, SPU tests for more than 100 other harmful contaminants, none of which we found in our supply! For that list, or additional water quality information, please check our Web site at [www.seattlewater.org](http://www.seattlewater.org).

| Detected Compounds    | Units              | EPA's Allowable Limits |          | Levels in Cedar Water                          |            | Levels in Tolt Water |              | Typical Sources                             |
|-----------------------|--------------------|------------------------|----------|--|------------|----------------------|--------------|---|
|                       |                    | MCLG                   | MCL      | Average  | Range      | Average              | Range        |   |
| <b>Raw Water</b>      |                    |                        |          |  |            |                      |              |   |
| Total Organic Carbon  | ppm                | NA                     | TT       | 0.6  | 0.3 to 0.9 | 1.3                  | 1.2 to 1.6   | Naturally present in the environment        |
| Cryptosporidium       | #/100L             | NA                     | NA       | ND   | ND         | ND                   | ND           | Naturally present in the environment        |
| <b>Finished Water</b> |                    |                        |          |  |            |                      |              |   |
| Turbidity             | NTU                | NA                     | TT       | 0.4  | 0.2 to 2.6 | 0.07                 | 0.05 to 0.19 | Soil runoff                                 |
| Fluoride              | ppm                | 4                      | 4        | 0.98   | 0.9 to 1.0 | 1.0                  | 0.8 to 1.1   | Water additive, which promotes strong teeth |
| Barium                | ppb                | 2000                   | 2000     | 1.2  | one sample | 1.0                  | one sample   | Erosion of natural deposits                 |
| Nitrate               | ppm                | 10                     | 10       | 0.07   | one sample | 0.15                 | one sample   | Erosion of natural deposits                 |
| Total Trihalomethanes | ppb                | NA                     | 80       | 31   | 26 to 38   | 35                   | 22 to 52     | By-products of drinking water chlorination  |
| Haloacetic Acids(5)   | ppb                | NA                     | 60       | 23   | 9 to 41    | 33                   | 23 to 38     |   |
| Total Coliform        | % positive samples | 0                      | 5%       | Highest Month = 0.4%<br>Annual Average = 0.07% |            |                      |              | Naturally present in the environment        |
| Chlorine              | ppm                | MRDLG = 4              | MRDL = 4 | Average = 0.95<br>Range = 0 to 2.2             |            |                      |              | Water additive used to control microbes     |

**Note:** Cryptosporidium was not detected in any samples from the Cedar or the Tolt rivers.

**The Small Print:** To make all the information fit in one table, we use many acronyms, defined here.

**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.  
**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.  
**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.

**TT:** Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.  
**NTU:** Nephelometric Turbidity Unit - Turbidity is a measure of how clear the water looks. The turbidity MCL that applied to the Cedar supply in 2009 was 5 NTU, and for the Tolt it was 0.3 NTU for at least 95% of the samples in a month. 100% of the samples from the Tolt in 2009 were below 0.3 NTU.  
**NA:** Not Applicable  
**ND:** Not Detected  
**ppm:** 1 part per million = 1 mg/L = 1 milligram per liter  
**ppb:** 1 part per billion = 1 ug/L = 1 microgram per liter  
**1 ppm = 1000 ppb**

### Lead and Copper Monitoring Results From Household Taps

| Parameter and Units | MCLG | Action Level+ | 2007 Results* | Homes Exceeding Action Level | Source                                  |
|---------------------|------|---------------|---------------|------------------------------|---|
| Lead, ppb           | 0    | 15            | 6             | 1 of 50                      | Corrosion of household plumbing systems |
| Copper, ppm         | 1.3  | 1.3           | 0.14          | 0 of 50                      |   |

\* 90th Percentile: i.e. 90 percent of the samples were less than the values shown.  
 + The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

### Lead

Although there is no detectable lead in our source water, tests from household taps show there can be low levels of lead and copper in tap water, primarily because of corrosion of household plumbing systems. The majority of homes have some risk of introducing small amounts of lead to water that sits in pipes for longer than two hours. Where you live, when your plumbing was installed and what type of plumbing you have, all play a part in determining the potential for lead to get in the water from your plumbing. SPU treats the water to minimize the tendency for lead to enter the water, and results show that that we have been successful.

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. SPU 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 two 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 (800-426-4791) or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



**Want to learn more?**

Visit [www.seattlewater.org](http://www.seattlewater.org)

## A conversation about conservation

One of the reasons we enjoy a high quality of life in Seattle is that everyone works together to conserve our resources. That's true of our water, as well. The average American uses around a hundred gallons of water a day. In the Seattle region, it's less than 70 gallons a day, thanks to high-efficiency showerheads, toilets and clothes washers, and water-wise gardens — we're a conserving community! And, we can do more to ensure there's plenty of clean water for salmon, the environment and future generations.

In 2009, Seattle's regional water conservation program — including 17 surrounding water utility partners in the Saving Water Partnership — achieved an estimated 610,000 gallons per day of annual savings. Since the beginning of the program in 2000, we have saved an estimated 9.0 million gallons per day (mgd) toward the cumulative 2010 target of 11 mgd. To put that into perspective: that's enough water to serve a city the size of Renton.

SPU supplied 47.3 billion gallons of drinking water in 2009, of which, 2.5 billion gallons were classified as leakage. Our leakage rate system-wide has averaged four percent over the last three years— very low compared with most other water utilities and below the 10 percent state standard. Leakage includes water used in fire fighting, street cleaning, construction, water main and hydrant flushing, and metering inaccuracies, as well as actual leakage from reservoirs, water mains and service lines.

### Why conserve?

A recent issue of National Geographic reports that only one percent of the world's water is both fresh and accessible. In the big picture, fresh water is a precious and finite resource. On a more local level, even in a wet climate such as ours, water conservation is important, as we tend to have dry summers and a finite amount of water storage. Conservation is also an important adaptation strategy to a changing climate in the Pacific Northwest. Water conservation helps us ensure plentiful supplies of high quality water to meet our region's growing population today and into the future, while ensuring there's enough water to support salmon runs. On a personal level, saving water can help you manage your utility bills.

## Can you be more efficient?

An average single-family household in Seattle uses 4,040 gallons a month in the winter and 5,759 gallons a month in the summer. Is your water use above average? Or do you want to increase your water use efficiency? Here are some easy ways to save water. You can find more ways to conserve at [www.savingwater.org](http://www.savingwater.org), including rebates on water-saving appliances and fixtures.

- Wait to wash clothes and dishes until you have a full load.
- Switch to an efficient showerhead — and take a shorter shower.
- Match the right plant to the right place in your garden. Subscribe to the Savvy Gardener Electronic Newsletter: [www.savingwater.org/outside\\_savvygardener.htm](http://www.savingwater.org/outside_savvygardener.htm).
- Adjust your lawn and/or gardening watering schedule for optimum efficiency (see how at [www.iwms.org](http://www.iwms.org)).
- Don't run the water while brushing your teeth.
- Find and repair water leaks: [www.savingwater.org/inside.htm#leaks](http://www.savingwater.org/inside.htm#leaks).
- Look for the WaterSense label on new appliances: [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

## Top three things you can do indoors

Inefficient and leaky fixtures can cost you.



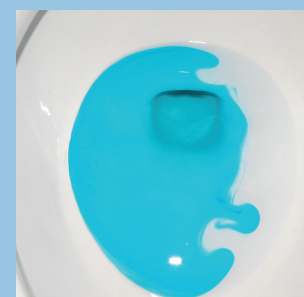
### Replace old toilets

Replacing an old toilet with a new WaterSense model saves an average household\* almost 30 gallons per day — and up to \$260 a year.



### Upgrade washers

Upgrading an old clothes washer to a new WashWise-qualified machine saves an average household\* 27 gallons per day. WashWise-certified machines also save energy and use less detergent.



### Find and fix leaks

Fixing leaks saves an average of 10 gallons per day per household. Check your toilet for leaks yearly. Visit [www.savingwater.org](http://www.savingwater.org) to find out how.

## Top three things you can do in your yard

Plan your garden so you need less water in the first place!



### Right plant, right place

Match plants to the conditions in your yard — if you have wet, shady areas, choose plants that thrive there, and the same with dry, sunny areas. If plants are well-suited to their place in your yard, you won't need to water so much.\*\*



### Cultivate your soil

Healthy soil holds water and gives plants the nutrients they need to stay beautiful. Add compost and mulch to your beds to slow the weeds and hold water near plant roots, where it's needed.\*\*



### Reduce water waste

When you water, make sure the water gets to the roots, where plants need it. Drip irrigation systems avoid shooting water up into the air, where much of it evaporates.\*\*

\*Based on a four-person household.  
 \*\* Water savings vary depending on the size and design of your landscape.