Message from the Mayor

We may take it for granted, but Seattle's drinking water is one of the many things that makes our region special and adds to our quality of life. We're fortunate to enjoy safe and excellent tasting water from our snow-covered mountains and the pristine Cedar and Tolt River watersheds. We're also protecting water quality by covering our reservoirs, which creates acres of new open space in our neighborhoods.

The Environmental Protection Agency requires an annual water quality report from all community water systems nationwide. Here in Seattle, we're pleased to share the results. So let's celebrate our high-quality water—and drink up, Seattle.

Greg Nickels
Mayor of Seattle

Your opinion counts!

Let us know how we're doing. Go to: www.seattlewater.org to take a quick, confidential customer survey.

Drinking Water Quality Report **2008**

Seattle Public Utilities

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Seattle Climate Action NOW
SeattleCAN.org

Saving water: How we're doing it

We're all working together to reduce water consumption—in fact, Seattle Public Utilities (SPU) and its 17 water district partners, the Saving Water Partnership, won the Environmental Protection Agency's WaterSense Partner of the Year for our creative water saving programs. Our business customers have really pulled their weight by contributing 40 percent of our conservation savings in 2008. SPU has done its job reducing distribution system leakage through our reservoir-covering program that reduces evaporation. And you, our customer, have continued to replace wasteful showerheads and washing machines, taken shorter showers, fixed leaks, washed full loads, and watered lawns wisely. Keep it up. Please visit www.savingwater.org for more information about water conservation.

EPA WaterSense 2008 PARTNER OF THE YEAR

Seattle Public Utilities

Healthier fish

Water conservation helps salmon, as well as your pocketbook. The foundation for a healthy salmon run is a healthy habitat—meaning water flow and water quality. Your actions to conserve water, particularly in the summer and early fall when flows are lowest, helps provide the habitat necessary for a healthy salmon population.

Saving water: How's our progress?

You're doing a great job of reducing water use: we use less water per person today than we used in the late 1950s. That's great for about a million reasons. Here are four of them:

It helps us be prepared for climate change, drought years and low snow levels.

It helps us manage water supplies even as our population grows—conservation is the cheapest source of new water.

It helps the salmon by enhancing stream flows.

It helps to hold down your costs.

History of Seattle's water system

Foresight and events conspire for great water quality

Seattle's water system sprang from two major events: the Great Fire of 1889 and the Klondike Gold Rush of 1897. The first showed the dire necessity for a municipally-owned, gravity-fed water supply. The second helped provide the funds to pay for it. Though it was initially expensive to purchase the land and build the pipeline, the Cedar River system is now one of the most pristine watersheds in the nation.

Why we produce this report

The publication of this annual water quality report is required by state and federal regulations. Printed with soy-based inks on 100-percent post-consumer paper, this report is designed to give you essential information on your public drinking water.

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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency and/or the Washington State Department of Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration and/or the Washington State Department of Agriculture regulations establish limits for contaminants in bottled water that 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 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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Reservoir covering

As resources get stretched, every project we use taxpayer dollars for has to offer multiple benefits. Our reservoir-covering program—which will create 76-acres of new public open space—is one example of a multiple-benefit project. Reservoir covering improves water quality and saves costs by reducing chlorine requirements and increases security. And when they are covered with grass, reservoirs become open space we all can enjoy. Talk about a win-win!

Of our thirteen reservoirs, nine are covered today, two are in construction and two will be taken out of service, because they are no longer needed. You can see how well this works by enjoying Cal Anderson Park, on Capitol Hill.

Seattle Public Utilities

Important facts to know about your water quality...

Seattle Public Utilities

Detected Compounds	Units	EPA's Allowable Limits MCLG	EPA's Allowable Limits MCL	Levels in Cedar Water Aver-age	Levels in Cedar Water Range	Levels in Tolt Water Aver-age	Levels in Tolt Water Range	Typical Sources
Raw Water								
Total Organic Carbon	ppm	NA	TT	0.8	0.4 to 1.3	1.3	1.1 to 1.5	Naturally present in the environment
Cryptosporidium	#/100L	NA	NA	ND	ND to 2	ND	ND	Naturally present in the environment
Finished Water								
Turbidity	NTU	NA	TT	0.4	0.2 to 2.6	0.06	0.04 to 0.23	Soil runoff
Fluoride	ppm	4	4	0.97	0.8 to 1.0	1.0	0.9 to 1.1	Water additive, which promotes strong teeth
Bromate	ppb	0	10	0.05	ND to 0.7	0.13	ND to 0.77	By-product of drinking water disinfectoin
Barium	ppb	2000	2000	1.5	one sample	1.5	one sample	Erosion of natural deposits
Nitrate	ppm	10	10	ND	one sample	0.1	one sample	Erosion of natural deposits
Total Trihalomethanes	ppb	NA	80	28	8 to 58	45	7 to 60	By-products of drinking water chlorination
Haloacetic Acids(5)	ppb	NA	60	18	9 to 47	34	7 to 48	
Total Coliform	% positive samples	0	5%	Highest Month = 2.1% Annual Average = 0.29%				Naturally present in the environment
Chlorine	ppm	MRDLG = 4	MRDLG = 4	Average = 0.9 Range = 0 to 1.9				Water additive used to control microbes

Note: Cryptosporidium was detected in one of three samples from the Cedar and zero of four samples from the Tolt.

Definitions:
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: NTU: Nephelometric Turbidity Unit - Turbidity is a measure of how clear the water looks. The turbidity MCL that applied to the Cedar supply in 2008 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 2008 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					
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.

Raw water

This part of the chart is for our water at the source, before it's treated. Because our water comes from large, protected watersheds, our raw water starts cleaner than most municipalities. 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.

Finished water

After treatment, our high-quality finished water is ready for consumption. There are very few contaminants in our finished water, and those we do detect are at levels well below the allowable amount.

Trihalomethanes

You have to treat surface water with chlorine to prevent microbial growth. But a by-product of the chlorination process is trihalomethanes and haloacetic acids, which are linked to certain cancers. In Seattle's water, because it starts off cleaner and we cover our reservoirs, we can use less chlorine and as a result, we have rates of these compounds well within safe ranges.

Lead

There isn't any lead in our water mains, however the pipes in many older homes do contain lead. While we raise the pH of our water to reduce pipe corrosion, you may still have lead in your water. If you are concerned about lead in your pipes, you can send your water to a certified lab for testing.

What is missing from this chart?

No news is good news. More than 179 things we test for are absent from Seattle's water, and so are not on the chart. We looked for pharmaceuticals, fecal coliform, phthalates (bottle plastics linked to certain cancers—one more reason to drink tap water!), bisphenol A, vinyl chloride, arsenic and cyanide, and found none.

Cryptosporidium

Although very low levels of Cryptosporidium have been detected in our raw water, our treatment processes are very effective at destroying any that are found. 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. Environmental Protection Agency/ Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Chlorine

Chlorine prevents water borne diseases like cholera, giardiasis, and salmonellosis. But too much makes the water smell and taste bad, and it can combine with organic carbons to produce additional contaminants. Our chlorine is at one quarter the allowable limit.

Testing methodology

We test the water at different stages and locations. First, we test the raw water at the source. Then, we test the water after it's been treated by ozonation, UV, filtration and chlorine to ensure we're well within EPA standards for contaminants. Then we sample the water at dozens of distribution sites and at the reservoirs to make sure the quality is maintained. And finally, to check for lead and copper, we test at certain high-risk households. While SPU is not responsible for water quality issues connected to household pipes, we make sure the water getting to houses meets EPA standards.

Want to find out more?

Visit www.seattlewater.org

About our water

Our watersheds are a thing of beauty: two pristine, Cascade Mountain, snow-fed watersheds, with none of the development runoff, garbage, sewage, or other sources of contaminants that might impact our water's quality. The majority of our water comes from the Cedar River watershed; the rest from the Tolt River watershed. We also have three wells, used for less than one percent of our water usage.

Besides SPU's own testing, water sources are also assessed by the state Department of Health (DOH). According to DOH, all surface waters in Washington are given a susceptibility rating of "high," regardless of whether contaminants have been detected or whether there are any sources of contaminants in the watershed. The Seattle wells have been given a susceptibility rating of "low," because of the type of acquifer, depth of well, and lack of contaminant detection. Information on the source water assessments is available from the DOH website at https://fortress.wa.gov/doh/eh/dw/swap/maps/.

These results are for those aspects of water quality regulated by the government. For other water quality information, please go to www.seattlewater.org or call 206-615-0827.

Water quality monitoring data can be difficult to interpret. To make all the information fit in one table, we used many acronyms that are defined below the table. In Seattle, if you live south of Green Lake, your water probably comes from the Cedar River. Areas north of Green Lake usually receive Tolt water. Each source can provide water to other areas in Seattle if needed.

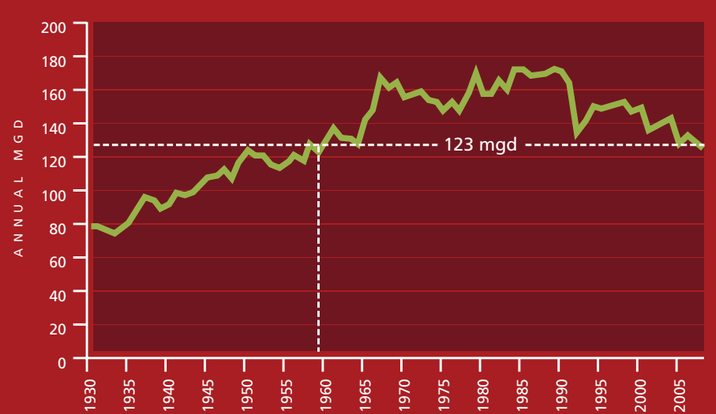
Saving water = saving money

As the charts show, we're on track with our water conservation goals. This is due to both your improving water usage habits, as well as a softer economy. A special thank you is due to apartment building owners this year, as many of them took advantage of our multifamily showerhead and high-efficiency toilet programs.

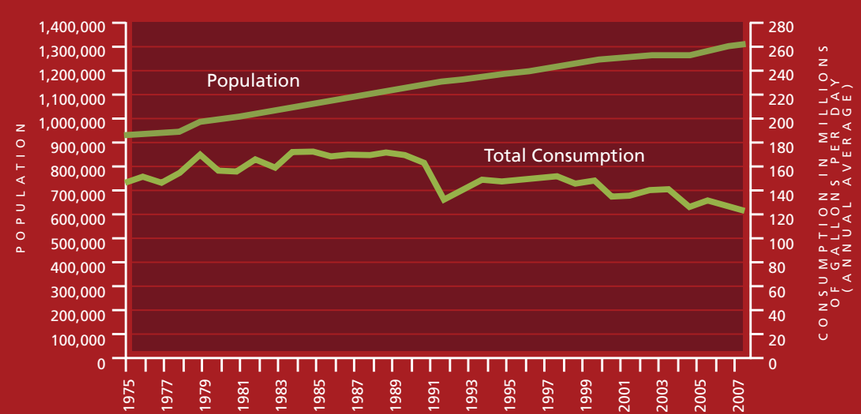
SPU supplied 45.1 billion gallons of drinking water in 2008, of which 1.5 billion gallons were lost to leakage or were otherwise unaccounted for. This represents a system wide leakage rate of 3%*, low compared with most other water utilities. And we are working to reduce it even more.

*Note that the system wide leakage rate was incorrectly reported as 7% in the copy of this report mailed out to customers..

Total Seattle Regional Water System Annual Demand in Millions of Gallons per Day: 1930-2008



Growth in Population and Water Consumption Seattle Regional Water System: 1975 - 2008



In 2008, the water conservation program achieved 0.75 million gallons per day (mgd) of annual savings. Since the program began in 2000, we have achieved an estimated 8.4 mgd toward the cumulative 2010 goal of 11 mgd.