

YOUR  
ANNUAL

# WATER QUALITY REPORT

*Water testing performed in 2008*



PWS ID#: 536405

## 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 providing 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.

As your water utility, it is our goal to meet your need for a clean, plentiful supply of drinking water at a reasonable cost.

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

## Where Does My Water Come From?

The City of Mercer Island receives its water supply from Seattle Public Utilities (SPU). Our primary water source from SPU is the Cedar River Watershed with the Tolt River's South Fork providing an alternate supply. SPU's uninhabited watersheds are supplied by the melting snow pack in the Cascade Mountains with supplements from our annual rainfall totals.

Each watershed is closed to unauthorized access and is carefully managed to supply clean, pristine drinking water to more than 1.4 million people in the greater Seattle area. The rainfall and snowmelt collected in the Cedar and Tolt rivers meets or surpasses all federal standards for drinking water. Water samples are tested every day for a wide variety of substances.

To learn more about the watersheds and treatment facilities on the Internet, go to the Seattle Public Utilities Web site at [www.seattle.gov/util/About\\_SPU/Water\\_System/Water\\_Sources\\_&\\_Treatment/index.asp](http://www.seattle.gov/util/About_SPU/Water_System/Water_Sources_&_Treatment/index.asp).

Washington's Source Water Assessment Plan (SWAP) is now available from the Department of Health (DOH) Web site at <http://www.doh.wa.gov/ehp/dw/default.htm>. This plan is conducted by DOH Office of Drinking Water (ODW) and is an assessment of the delineated area around their listed sources through which contaminants, if present, could migrate and reach our source water. By default, the DOH assigns a susceptibility rating of "high" for all surface water sources.

## 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.

## Water Loss

Mercer Island takes its water seriously. During 2008 we purchased 777.67 million gallons of water from Seattle Public Utilities, of which our records indicate that we sold 697 million gallons. These figures represent 10 percent of unaccounted for water that we remain vigilant in identifying. Efforts that we have made to reduce this percentage include installing more accurate water metering for our larger water users and also for services that jointly serve domestic and fire protection needs as well as a diligent fire hydrant inspection program that helped us identify hidden leaks. We also meter all of our water main flushing usage during our annual distribution and dead end water main flushing program.

In addition we could use your help too! If you see or suspicion a water leak, call us. If you notice a truck connected to a fire hydrant that clearly isn't a City vehicle, or if you see a hose connected to a hydrant and there is no meter attached, call us.

## Community Participation

You are invited to participate in our public forum and share your comments about your drinking water. The Utility Board meets at 7 p.m. on the second Tuesday of most months, in the City Council Chambers at City Hall located at 9611 SE 36th Street, Mercer Island, WA. You can find meeting and contact information on the City of Mercer Island Web site at [www.mercergov.org/CCBIndex.asp](http://www.mercergov.org/CCBIndex.asp).

For more information about this report, or for any questions related to your drinking water, please contact the City of Mercer Island Maintenance Department at (206) 275-7608. This 2008 report, indicating water testing done in 2008, is also available on the City Web site at [www.mercergov.org/files/cmiwater2008.pdf](http://www.mercergov.org/files/cmiwater2008.pdf).

## 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.

### PHARMACEUTICAL COMPOUNDS

The American Water Works Association reported the following comments to the U.S. Senate Subcommittee:

“The first priority of the water community is protecting public health. As part of that commitment, water professionals have been researching the occurrence of personal care products and pharmaceutical compounds in drinking water supplies for more than 30 years.

“Today’s advanced technology has allowed scientists to detect more substances—at lower levels—than ever before. To date, however, research throughout the world has not demonstrated an impact on human health from pharmaceuticals in drinking water at the trace levels at which they have been found. People regularly consume or expose themselves to products containing these compounds in much higher concentrations through medicines, food and beverage, and other sources.

“The ongoing conversation about these substances should remind us of how precious our source waters are and the need to protect them. The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean.”

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

## How Is My Water Treated and Purified?

Mercer Island receives its water primarily from the Cedar River water supply via Seattle Public Utilities’ transmission system.

At SPU’s Cedar treatment facility, which was completed in 2003, the water is screened to remove debris (twigs, leaves), disinfected with chlorine to remove microbial contaminants, fluoridated for dental health protection, and adjusted with lime for pH adjusted corrosion control to minimize lead leaching in older plumbing systems. In 2004, SPU added two more steps in water treatment at this facility: ozonation for odor and taste improvements and Giardia control, and ultraviolet light (UV) disinfection to disable microbial contaminants such as chlorine resistant *Cryptosporidium*.

The Tolt water supply has ozonation, filtration, chlorination, fluoridation, pH, and alkalinity adjustment.

The introduction of fluoride into drinking water and toothpaste is viewed as one of the ten greatest accomplishments of the 20th century, according to the Centers for Disease Control and Prevention (CDC).

## Variances and Exemptions

As a consumer you are entitled to know what variances and waivers are in force with your water utility. The City of Mercer Island currently has one waiver with the Department of Health, and it concerns asbestos-cement water main piping. The Washington State Department of Health (DOH) does not require any water supplier to report on systems with less than 10 percent total asbestos-cement piping. Our waiver simply acknowledges that a very small amount of asbestos-cement pipe exists in our system. The water distribution system on Mercer Island is composed of 98 percent cast iron, ductile iron, or steel and the remaining 2 percent is asbestos-cement pipe. This is an old material that is no longer used in construction, and the small amounts of material in our system pose no threat to drinking water quality. Further, Seattle Public Utilities has not detected any naturally occurring asbestos in their watersheds.

## Water Conservation

In December 2007, Mercer Island, as a member of the 18 local utilities that comprise the regional Saving Water Partnership, adopted the six-year regional conservation goal to help protect the long-term supply of drinking water and to promote good stewardship of water resources. Mercer Island continues to actively support the goals of the Regional 1% Water Conservation Program, which were established in partnership with Seattle Public Utilities for the water supply system. In 2008, 209 island residents took advantage of the Wash Wise Resource Efficient Clothes Washers and nine more irrigation users received rebates for the installation of efficient in-ground water controllers that adjust to the weather.

### Personal Water Conservation

The conservation of water and other resources is a priority to the City of Mercer Island as reflected in Resolution 1389 which focuses on the creation of a sustainable community and our adopted budget policies for several years. You can read more about our green commitment by going to [www.mercergov.org/Page.asp?NavID=2290](http://www.mercergov.org/Page.asp?NavID=2290).

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 can 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, washing your face, or shaving.
- Check every faucet in your home for leaks. Just a slow drip can waste many gallons per day. Don't forget those outside faucets as well!

### Checking a Toilet for Leaks

Unknown water use is most often the result of a leaking toilet. Sometimes toilet leaks aren't seen or heard. 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 a good idea to check for a leaking toilet at least once a year.

The main causes of a toilet leak are either a "fill valve" that will not shut off or a bad "flapper."

#### Fill valve problem

A fill valve problem will cause water to flow over the "overflow tube," either because the water level is set too high or it won't shut the water off. If you can't adjust the water level lower or can't get the fill valve to shut off, replace the fill valve.

#### Bad flapper

If you had water run into the bowl during the dye test and the water level is not set too high, your flapper is probably leaking and it should be replaced. Flappers tend to harden more quickly when chlorine tablets are placed in the tank. If flappers aren't pliable they will not completely seat and leaks will occur.

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. Don't let that automatic ice maker fool you if it cycles during this test.

For more Mercer Island conservation information please visit our Web site at [www.mercergov.org/waterconservation](http://www.mercergov.org/waterconservation).

## What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major health concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems or fire sprinkler systems), irrigation systems that are connected to lake water, or water sources of questionable quality, such as water actuated boat lifts. 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 rare 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 or fertilizing. Garden hoses and irrigation systems can also be contaminated by pets. Improperly adjusted valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all commercial and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected with the proper type of backflow preventer. We also require that each backflow preventer is inspected and tested annually 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 [www.epa.gov/safewater/crossconnection.html](http://www.epa.gov/safewater/crossconnection.html). You can also call the Safe Drinking Water Hotline at (800) 426-4791.

## 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 residential service lines and interior plumbing. 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. You should consider using this water for indoor or outside plant watering. If you are concerned about lead in your water, you may wish to have your water tested at one of the labs listed at [www.mercergov.org/watertestinglabs](http://www.mercergov.org/watertestinglabs). 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).

With the previous low sample result levels of lead and copper within the Cedar Watershed customer user area, Mercer Island is not required to do any further sampling until the summer of 2009. The City of Mercer Island is responsible for providing high-quality drinking water, but cannot control the variety of materials used in private plumbing systems.

## Testing For Cryptosporidium

*Cryptosporidium* is a microbial parasite found in surface water throughout the United States. Although SPU's filtration process on its two restricted access watersheds removes and inactivates *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. *Cryptosporidium* testing results for 2008 at the Cedar Watershed detected *Cryptosporidium* in 1 out of 3 samples collected, and for the Tolt Watershed,

*Cryptosporidium* was detected in 0 of the 8 samples. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised 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.

## Sampling Results

During the past year Seattle Public Utilities has 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. 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. 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.

Water quality data for non-regulated parameters or secondary substances, such as fluoride, pH, alkalinity, hardness, and conductivity, is available on SPU's Web site at [http://www.seattle.gov/util/About\\_SPU/Water\\_System/Water\\_Quality/Water\\_Quality\\_Analyses/index.asp](http://www.seattle.gov/util/About_SPU/Water_System/Water_Quality/Water_Quality_Analyses/index.asp). Once you get to this Web page, select 2008 Water Quality Analysis.

### REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2008	2	2	0.0015 <sup>1</sup>	NA	No	Erosion of natural deposits
Bromate (ppb)	2008	10	0	0.05	ND–0.7	No	By-product of drinking water disinfection
Chlorine (ppm)	2008	[4]	[4]	1.03	0.21–1.48	No	Water additive used to control microbes
Total Organic Carbon (ppm)	2008	TT	NA	0.8	0.4–1.3	No	Naturally present in the environment
Turbidity <sup>2</sup> (NTU)	2008	TT	NA	0.4	0.2–2.6	No	Soil runoff

Tap water samples were collected for lead and copper analyses from homes within the regional Cedar water supply area.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2006	1.3	1.3	0.11	0/51	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2006	15	0	4.6	0/51	No	Corrosion of household plumbing systems; Erosion of natural deposits

### IDSE SAMPLING RESULTS<sup>3</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Haloacetic Acids [HAA]–IDSE Results (ppb)	2008	60	NA	26.0	17–35.3	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–IDSE Results (ppb)	2008	80	NA	24.8	14.1–35.7	By-product of drinking water disinfection

<sup>1</sup> Only one sample was taken.

<sup>2</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

<sup>3</sup> The Initial Distribution System Evaluation (IDSE) is a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs). Water systems will use results from the IDSE, in conjunction with their Stage 1 DBPR compliance monitoring data, to select compliance monitoring locations for the Stage 2 DBPR.

## 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.