



City of Tumwater
Water Quality Report
2007

It's Your
Water


Dear Water Customer:

Water plays an important role in our lives and in the environment in which we live, work, and play. The City of Tumwater takes pride in the excellent quality of our water, which we provide to more than 25,000 customers each and every day. Our Operations and Water Resources employees work diligently to provide safe, high quality water to our customers.

In 2006, we completed major upgrades to our water distribution system with the goal of reducing or eliminating coliform detections. Despite our best efforts, the city's growth and overall demands on the water system necessitate more extensive treatment. Late last year, we began planning and designing permanent disinfection systems. We'll be using the minimum amount of chlorine necessary to ensure your safety and maintain the highest quality water possible.

In 2007, the city will continue to work with local businesses and residents to preserve and protect our drinking water. With the hot summer months close at hand, I urge you to be "water smart" by conserving water and minimizing the use of hazardous materials. Together, we can meet the needs of people and the environment.

Thank you!



Ralph Osgood

Ralph Osgood
Mayor



Compliance With New Regulations Underway

Earlier this year, the Washington State Department of Health unveiled the "Water Use Efficiency Rule" that requires all municipal water suppliers to develop conservation goals, account for unused or wasted water, meter all users, and report annually on water use.

This rule helps conserve water for both the environment and future generations, and improves water system efficiency and reliability. While this rule is new, the City of Tumwater will enact its provisions seamlessly because we have been meeting the requirements of this rule for many years.

In February 2007, the Washington State Department of Ecology issued its final National Pollutant Discharge Elimination System (NPDES) permit to local jurisdictions, including the City of Tumwater.

This permit requires the city to meet minimum standards for construction site runoff; citizen education, participation, and outreach; pollution prevention; and storm water facility maintenance. Over the past few years, the city has been preparing for these new requirements and is ready to comply. Keep an eye out for NPDES news over the next year as the city expands its storm and surface water program to meet the requirements of our new permit.

Who Watches Your Water?

The U.S. Environmental Protection Agency (EPA)

sets national standards for more than 100 potential drinking water contaminants under the Safe Drinking Water Act. Visit the EPA's drinking water web site, www.epa.gov/safewater, or call the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

The Washington State Department of Health

enforces national and state health standards. Contact the Southwest Regional Drinking Water Office at 360-236-3030.

The Washington State Department of Ecology

enforces national and state environmental standards. To report a spill, call 1-800-OILS-911. For general information, contact the Southwest Region Office at 360-407-6300.

The Tumwater Public Works Department

operates the water system, conducts water quality testing, and protects the city's water supply. Contact Steve Craig, Utility Operations Supervisor, at 360-754-4150.

Customers provide insight on water quality.

Your questions, concerns, and observations are valuable to us. To learn more about current water quality issues and decision-making processes, make comments, or ask questions, contact Dan Smith, Water Resource Program Manager, at 360-754-4140.

Your Drinking Water

The City of Tumwater regularly tests your water supply for more than 100 different substances. In 2006, overall drinking water quality in Tumwater was excellent, and our water supply currently meets and exceeds all drinking water standards!

Instances of Chemical or Bacteriologic Detections

Nitrates – Routine testing for nitrates, a chemical compound commonly found in residential areas using septic tanks and in agricultural areas with livestock or using fertilizers, revealed levels of nitrates well below the Maximum Contaminant Level Goal (MCLG) of 10 ppm. Reducing the use of fertilizer and properly maintaining septic tanks helps lower nitrate levels.

Bacteria – The city conducts sampling for bacterial presence throughout the water system 30 times each month. In 2006, the city upgraded the water distribution system to help reduce the potential for coliform detections. The project has been effective for the management of the water system, however

coliform detections late in the year suggested more intensive disinfection measures would be needed. For more information, please read article on page 5.

Radionuclides – Every three years, the city is required to sample the groundwater for radionuclides, radioactive substances found in the soil originating from the decay of natural and man-made substances. In 2006, the city detected trace amounts of these particles at levels far below the Environmental Protection Agency's (EPA) level of concern for drinking water. These low levels are commonly associated with the breakdown of natural materials in the soil.

What We Look For in Your Water

- Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic analytes, such as salts and metals, can occur naturally in soils or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of residential and agricultural sources, can easily infiltrate into the groundwater if over-applied or used incorrectly.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gas stations, dry cleaners, urban storm water runoff, and septic systems.
- Radioactive contaminants that are naturally occurring or the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the EPA and Washington State Department of Health regulate the maximum allowable amount of certain substances in water provided by public water systems. The U.S. Food and Drug

Administration and the Washington State Department of Agriculture regulations establish limits for contaminants in bottled water, which provide the same level of protection.



Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some substances. The presence of a contaminant does not necessarily indicate that water poses a health risk. For more information about contaminants and potential health effects, call the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune

system-compromised persons, such as those undergoing chemotherapy for cancer, 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.

The EPA and Centers for Disease Control and Prevention guidelines on appropriate ways to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

Water Quality Table

Your drinking water comes from wells located throughout the city and the immediate vicinity. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals as well as substances left by animals or

humans. Because Tumwater's soils are very sandy in most areas, contaminants may travel quickly and easily through groundwater to city wells. Contaminants that may threaten human health are regulated.

	ALLOWED LEVEL (MCL)	IDEAL GOAL (MCLG)	AMOUNT DETECTED	SAMPLE DATE	MCL VIOLATION	TYPICAL SOURCE OF CONTAMINATION
TOTAL COLIFORM BACTERIA	1 positive sample/month	0	5 positive samples	August 2006	Non-acute MCL violation	Contamination from mammals
NITRATE AS NITROGEN	10 ppm	10 ppm	0.59 - 1.74 ppm	2006	No	Runoff from fertilizer use; leaching from septic tanks, sewage; manure; erosion from natural deposits
RADIUM 228	50 pCi/L	n/a	1.3 - 2.2 pCi/L	2006	No	Decay of natural and man-made deposits in soil

Definitions

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water, below which there is no known risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

Micro Siemens per Centimeter ($\mu\text{S}/\text{cm}$): A measure of electrical conductance.

Non-Acute Violation: An exceedence of state regulations that poses a possible or less than immediate risk to human health.

Nephelometric Turbidity Units (NTU): A measure of water clarity.

Parts Per Million (ppm): Parts per million is equivalent to milligrams per liter (mg/L). One ppm is approximately equal to 1 drop in 22 gallons of water.

Picocuries Per Liter (pCi/L): A measure of radioactivity due to the decay of natural and man-made deposits in the soil. The EPA considers 50 pCi/L to be the level of concern for beta particles.

Frequently Asked Questions

Q. Does Tumwater fluoridate our water?

A. No.

Q. Does Tumwater chlorinate our water?

A. Yes. Routine testing found coliform bacteria in our water system, so chlorine has been added to the water system since September 2006. Although the coliform bacteria was not hazardous in itself, its presence indicates a potential problem. Chlorination has been done to assure the protection of public health, now and into the future.

Q. What precautions should customers take regarding chlorine?

A. Customers with home dialysis systems should recognize that chlorine is present in the water and prepare filter systems accordingly. Chlorine may also have an adverse

effect on fish and aquatic life. People with fish tanks can remove chlorine by filling a bucket or pitcher and leaving the water out for 1 or 2 days, or purchase a dechlorination agent from a pet store.

Q. Is Tumwater's water considered to be "hard" or "soft"?

A. The water in Tumwater is considered to be on the soft side, which is preferable for washing and cleaning.

Q. How much sodium is there in our water? Why is this a concern?

A. Sodium in drinking water is a concern for people who watch their sodium intake for health reasons. The EPA recommends no more than 20 ppm of sodium in drinking water; our water averages just 4.7 ppm.

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Tumwater Continues Disinfection Upgrades

Coliform is an indicator bacterium that shows conditions are suitable for the growth of potentially hazardous bacteria. When coliform was detected in the city's water system in 2005, efforts were undertaken to identify the source and the system was retrofitted with chlorination equipment to reduce the potential for coliform growth.

Despite those efforts, in 2006 the presence of coliform bacteria in the drinking water system was again detected at different locations, causing a non-acute MCL violation. A non-acute MCL violation occurs when two or more water samples taken during a month test positive for the presence of coliform bacteria. **No fecal coliform or E.coli have been found in the water system.**

In coordination with the Washington State Department of Health, the city again began disinfecting the water system with chlorine last September and entered into a voluntary agreement to continue disinfection on a permanent basis.

This agreement requires the city to have permanent facilities installed by 2009. These facilities will ensure all drinking water is treated and continues to be the highest quality possible. The city is working carefully to design a system that provides the right balance between treatment needs and aesthetic quality. The planning and design phase, which will include the selected treatment strategy, will be complete by the end of this year.

For more information on this project, contact Dan Smith at 360-754-4140.

Water Wisely This Summer

As summer temperatures rise, water consumption increases. Average water use on a summer day is 2½ to 3 times greater than on an average winter day. In the summer, up to 70 percent of your water bill is due to outdoor use. Over-watering is the number one waste of water during the summer and the leading cause of disease and insect problems for plants. Follow the tips below to water wisely this summer.



- **Mulch to retain moisture.** Mulch keeps roots cool, retains soil moisture, and reduces weed growth.
- **Mow it high and let it lie.** Set mowing height for 2-3 inches. Roots will stay shaded and will grow deeper, becoming more water efficient.
- **Water wisely.** Most lawns require about 1 inch per week in the drier months, July and August, and less in late spring and early fall. Use an empty tuna can or rain gauge to measure how much water your lawn is getting, including rain.
- **Mimic a slow, soaking rain.** Water your lawn slowly, deeply, and infrequently to moisten the root zone. Turn off your sprinkler at the first sign of saturation, allowing water to soak in.
- **Water early or late so it won't evaporate.** As much as 30 percent of water can be lost to evaporation by watering your lawn during the hottest part of the day.
- **Water efficiently.** Use soaker hoses and drip irrigation for trees, shrubs, and planting beds.
- **Choose the right plant for the right place.** Pick plants adapted to our dry summers and wet winters. Look for native plants or "Common Sense Gardening" plant signs at local nurseries. Group plants with similar water needs and water appropriately. Before watering, dig around in the soil to determine when watering is needed.
- **Let rain do the work.** If you use an in-ground, automatic irrigation system, install a rain sensor to shut off your system when it rains. Adjust irrigation timers to match seasonal wet and dry patterns.
- **Concrete won't grow.** Adjust sprinklers and hoses so that driveways, sidewalks, and streets don't get watered too. Avoid watering on windy days.

Save Water & \$\$\$ at Home

Tumwater water customers are eligible to receive two FREE shut-off spray nozzles for hoses, two rain gauges, indoor water-saving kits, and a rebate on the purchase of up to six rain barrels. Stop by the Public Works Department in City Hall weekdays from 8am-5pm and pick up the items.

"Water Smart Technology" Conservation Rebate Program

The City of Tumwater, in collaboration with the LOTT Wastewater Alliance, offers rebates of up to 75 percent of the installed costs of commercial, industrial, or institutional systems, equipment, appliances, or fixtures that save water and send less wastewater down the drain. By reducing the amount of water used and sent to the wastewater treatment plant, the customer saves money – and construction of new wastewater treatment facilities or development of new sources of water supply can be deferred.

Need a New Washing Machine?

Residential sewer customers can receive a \$100 rebate when purchasing an approved water-efficient washing machine. Rebates are also available for commercial customers providing coin-operated units for multi-family developments and laundromats.

For more information about the water conservation program and rebates, contact Dan Smith at 360-754-4140.

New Storm Drain Markers Help Protect Water



The City of Tumwater has a new colorful way to help protect your drinking water – and all of our water resources – from pollution. Markers are being affixed to storm drains around the city to remind residents about the dangers of dumping substances into

them. Since all of Tumwater's drinking water comes from local groundwater, preventing pollution is an important first step in protecting our drinking water supply.

Each time it rains, water washes over streets, driveways, and yards, picking up pollutants and flowing into storm drains. This runoff may contain motor oil, antifreeze, yard clippings, pet waste, litter, lawn chemicals, or other toxins, which can pollute our streams, lakes, and groundwater. Debris can also clog pipes and cause flooding.

Sometimes hazardous or toxic substances are dumped directly into storm drains by people who don't realize that dumping pollutes our waterways and is illegal.

Contrary to popular belief, most storm drains are not connected to treatment systems. Storm water typically flows

untreated directly into our waterways or travels to storm water ponds, where some pollutants settle out before the water flows into a nearby water body or into the ground.

You can help prevent pollution of our waters by following these tips:

- Do not dump any substance down a storm drain
- Properly dispose of hazardous waste and recycle used motor oil
- Keep yard waste, dirt, and trash off the street
- Clean up and dispose of your pet's waste
- Wash your car at a car wash facility

Community members are invited to help spread the word about storm water pollution by volunteering to affix the new storm water markers to our storm drains. This project makes a great neighborhood, school, scout troop, or church activity. The city supplies all materials and instruction needed for the project. To sign up for a marking project in your neighborhood, call Debbie Smith, Water Resources Educator, at 360-754-4148.

Join the Team – Help Protect Our Local Streams

Tumwater Stream Team volunteers help protect and enhance the water resources, associated habitats and wildlife within the City of Tumwater through citizen education and action. In 2006, Stream Team volunteers planted native trees and shrubs along the Deschutes River and Percival Creek, monitored local water quality, and educated area residents about water quality issues. To "join the team," or for information about upcoming events, call Debbie Smith, Water Resources Educator, at 360-754-4148.



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Frequently Asked Questions

Q. What is the conductivity of our water and why does it matter?

A. Conductivity is a measure of how well water can transmit electricity, and is affected by the presence of ions (for example, chloride, nitrate, and sulfate). The conductivity of water found in the ground and in waterways depends on the types of rock and soil through which the water flows, picking up small amounts of dissolved solids as it passes over or through an area. Generally, water with high conductivity does not taste very pleasant, and it may leave a white film on dishes. The goal for most water systems is to maintain a conductivity level of less than 700 $\mu\text{S}/\text{cm}$; our water averages approximately 128 $\mu\text{S}/\text{cm}$.

Q. What should the water pressure be in a residence?

A. Between 40 and 80 psi. Over 80 psi, a pressure-reducing valve is recommended.

Q. What is *turbid* water? How much *turbidity* is okay?

A. *Turbidity* is a technical word describing the cloudiness of water. Sediments and organic matter lead to higher turbidity; high flows through pipes can also pick up more particles than usual, causing higher turbidity. Higher turbidity levels can cause problems in disinfecting water, and so it poses a risk to public health. Generally, turbidity above 1 NTU is cause for higher levels of disinfection; Tumwater's water has an average turbidity of 0.90 NTU.