

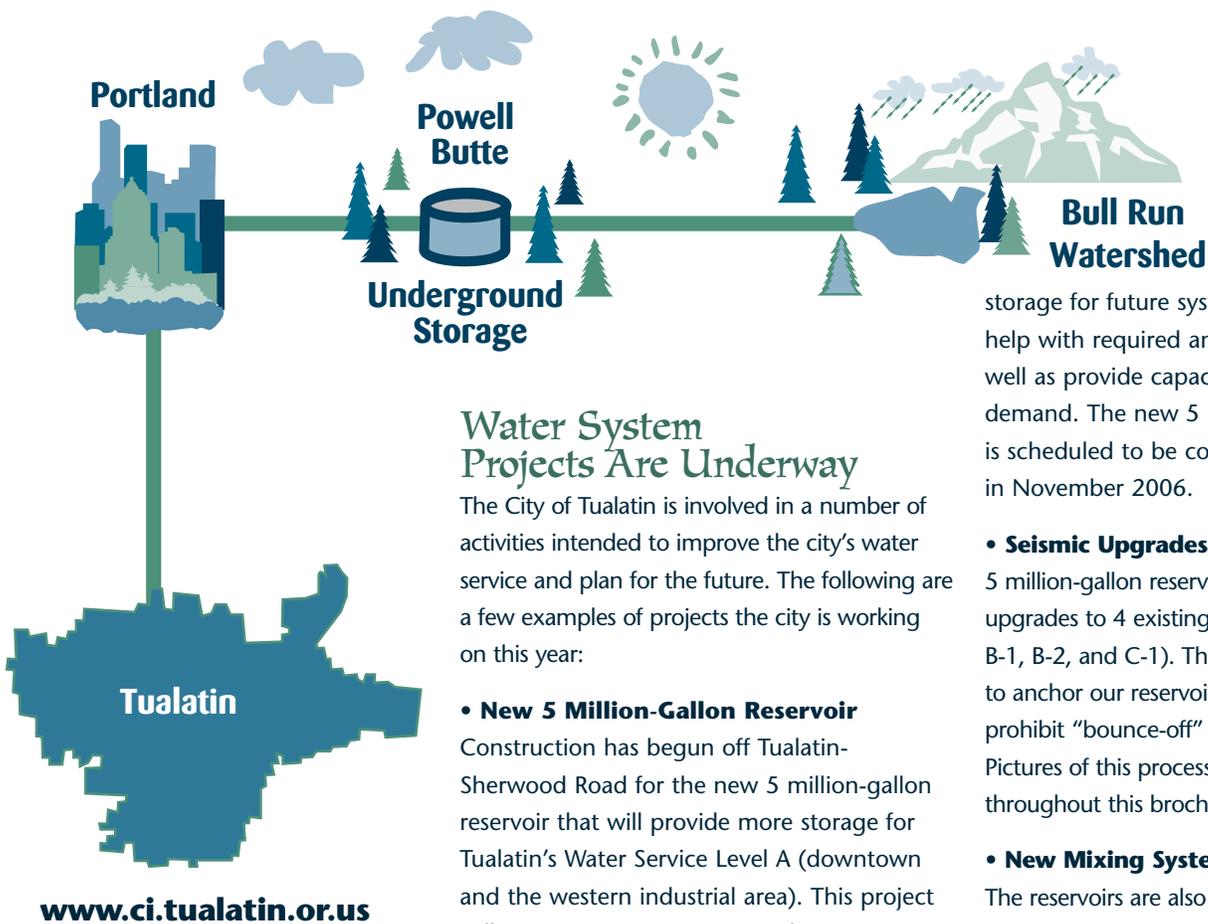
Results meet or surpass state and federal drinking standards.



WATER *quality* 2005



City of Tualatin, Oregon



www.ci.tualatin.or.us

Water System Projects Are Underway

The City of Tualatin is involved in a number of activities intended to improve the city's water service and plan for the future. The following are a few examples of projects the city is working on this year:

- New 5 Million-Gallon Reservoir**
 Construction has begun off Tualatin-Sherwood Road for the new 5 million-gallon reservoir that will provide more storage for Tualatin's Water Service Level A (downtown and the western industrial area). This project will increase current storage volumes to meet regulatory requirements and provide some

storage for future system growth. It will also help with required and future fire flows, as well as provide capacity for peak hour demand. The new 5 million-gallon reservoir is scheduled to be completed and in service in November 2006.

- Seismic Upgrades** Included with the new 5 million-gallon reservoir will be seismic upgrades to 4 existing steel reservoirs (A-1, B-1, B-2, and C-1). The upgrades are designed to anchor our reservoirs to their foundations to prohibit "bounce-off" during an earthquake. Pictures of this process are included throughout this brochure.

- New Mixing Systems for Reservoirs**
 The reservoirs are also being retrofitted with a mixing system to help improve circulation and water quality.



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YOUR DRINKING WATER 2005

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Public Water System #4100906

The Key Message

The City of Tualatin is dedicated to delivering high-quality water that meets or surpasses all federal and state drinking water standards.

Este documento contiene información importante y la persona que lo reciba debe pedir que alguien se lo traduzca.

your drinking water

Safe, reliable drinking water is a basic life necessity.

The City of Tualatin is proud to deliver excellent water to more than 25,464 people every day. We think it is important for our customers to understand where their water comes from, how safe it is, and what actions we take to ensure its continuing high quality. In accordance with federal guidelines, this report provides the information you need to know about the water you drink.

Where Our Water Comes From

The City of Tualatin supplies water to residents who live within the city limits. We do not own the water source. We buy our water from the City of Portland Bureau of Water Works.

Portland's Water Sources

The Bull Run Watershed is a surface water supply located in the Mt. Hood National Forest. A geological ridge separates the watershed from Mt. Hood. Current regulations allow Portland to meet federal drinking water standards without filtering this high-quality water supply. The watershed has an area of 102 square miles, and typically receives 80-170 inches of rainfall a year. The heaviest rains occur from late fall through spring. Two reservoirs store water for use year-round, particularly during the dry summer months.

The watershed is reserved solely for producing drinking water. Federal laws restrict human entry. No recreational, residential, or industrial uses occur within its boundaries. The Portland Water Bureau carefully monitors water quality and quantity. The Oregon Department of Human Services - Drinking Water Program regularly inspects the watershed and related treatment and distribution facilities.

The Water Bureau has completed a Source Water Assessment for the Bull Run water supply to comply with the 1996 Safe Drinking Water Act amendments. The only known contaminants of concern for the Bull Run water supply are naturally-occurring microbial contaminants such as *Giardia lamblia*, *Cryptosporidium*, fecal coliform bacteria, and total coliform bacteria. These organisms are found in virtually all freshwater ecosystems and are present in the Bull Run supply at very low levels. The Bull Run supply complies with all applicable state and federal regulations for source water, including the 1989 Surface Water Treatment Rule filtration-avoidance criteria. The Source Water Assessment report is available at www.portlandonline.com/water and by calling 503-823-7404.

The Columbia South Shore Well Field provides high quality water from production wells located in four different aquifers. The well fields were not used in 2005.



Drinking Water Treatment

The Water Bureau treats Portland's water with chloramination. This process starts with chlorine to disinfect the water. Next, the city adds ammonia to ensure that disinfection remains adequate throughout the distribution system.

The city also adds sodium hydroxide to increase the pH of the water to reduce corrosion of plumbing systems. This treatment helps control lead and copper levels at customers' taps, should these metals be present in the customers' home plumbing.

Water Testing

The Portland Water Bureau, along with the City of Tualatin, monitors for approximately 200 regulated and unregulated contaminants in drinking water, including pesticides and radioactive contaminants. All monitoring data in this report are from 2005 unless otherwise indicated. *If a health related contaminant is not listed in this report, the Water Bureau did not detect it in Bull Run drinking water.*

EPA's View On Drinking Water Contaminants

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 (EPA) Safe Drinking Water Hotline at 800-426-4791 or at www.epa.gov/safewater/.

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.

Contaminants in Drinking Water Sources May Include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from wildlife or septic systems.
- **Inorganic contaminants**, such as salts and metals, which can occur naturally or result from urban stormwater runoff, industrial or domestic wastewater discharges, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as farming, urban stormwater runoff, and home or business use.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can occur naturally.



our mission statement

"Provide safe water to our customers in a sufficient quantity and quality to meet their needs in a responsible and professional way."

Results of Monitoring for Regulated Contaminants

SOURCE WATER - BULL RUN WATERSHED

Regulated Contaminant	Minimum Detected	Maximum Detected	Maximum Contaminant Level (MCL) or Treatment	Maximum Contaminant Level Goal (MCLG)	Source of Contaminant
Turbidity	0.22 NTU	1.47 NTU	5 NTU	Not Applicable	Erosion-nat. deposits
Giardia	Not detected	One sample of 50 liters had 5 cyst	Treatment technique required: Disinfection to inactivate 99.9% of the cysts	Not Applicable	Animal wastes
Total Coliform Bacteria	Not detected	1 sample had 17 colonies. (100% had 100 or fewer bacterial colonies per 100 milliliters of water.)	At least 90% of samples (last 6 mos.) must have 100 or fewer bacterial colonies per 100 milliliters of water	Not Applicable	Through-out environment
Fecal Coliform Bacteria	Not detected	2 samples had 5 colonies. (100% had 20 or fewer bacterial colonies per 100 milliliters of water.)	At least 90% of samples (last 6 mos.) must have 20 or fewer bacterial colonies per 100 milliliters of water	Not Applicable	Animal wastes

Maximum Residual Disinfectant Level or MRDL - 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.

Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.

Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Part Per Million - One part per million corresponds to one penny in \$10,000 or approximately one minute in two years. One part per million is equal to 1000 parts per billion.

Part Per Billion - One part per billion corresponds to one penny in \$10,000,000 or approximately one minute in 2000 years.

Notes on Regulated Contaminants

Turbidity - Bull Run is an unfiltered surface water supply. Rules for public water systems have strict standards for unfiltered surface water supplies. Turbidity levels in unfiltered water must not exceed 5 NTU (Nephelometric Turbidity Units). The typical cause of turbidity is tiny particles of sediment in the water during storm events. During large storm events, the Water Bureau may shut down the Bull Run system and serve water from the Columbia South Shore Well Field. Turbidity can interfere with disinfection and provide a medium for microbial growth.

Giardia - Wildlife in the watershed may be hosts to Giardia lamblia, the organism that causes giardiasis. Chlorine is effective in inactivating Giardia.

Total Coliform Bacteria - Total coliform bacteria are naturally present in the environment. Their presence is an indicator that other potentially harmful bacteria may be present. The Water Bureau uses chlorine to control these bacteria. Total coliform samples are collected from both the source water and the distribution system.

Fecal Coliform - The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes. The Water Bureau uses chlorine to control these bacteria.

Nitrate - Nitrogen - Nitrate can support microbial growth (bacteria and algae). Nitrate levels exceeding the standards can contribute to health problems.

Barium and Selenium - Metals are a group of similar elements that occur in the earth's crust. Metals (such as barium and selenium) and other minerals can dissolve into water that is in contact with soil or in groundwater aquifers.

ENTRY POINTS TO DISTRIBUTION SYSTEM

<u>NUTRIENTS</u> Nitrate Nitrogen	0.02	0.06 ppm	10 ppm	10 ppm	Erosion-nat. deposits; animal wastes
<u>METALS</u> Barium	Not detected	0.006 ppm	2 ppm	2 ppm	Erosion of natural deposits
Selenium	Not detected	2 ppb	50 ppb	50 ppm	

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Definitions

Maximum Contaminant Level Goal or MCLG - 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.

Maximum Contaminant Level or MCL - 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.

Maximum Residual Disinfectant Level Goal or MRDLG - 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.

Disinfection Byproducts - During disinfection, certain byproducts form as a result of chemical reactions between chlorine and naturally-occurring organic matter in the water. These byproducts can have negative health effects. The disinfection process is carefully controlled to remain effective, while keeping byproduct levels low. Monitoring in Portland's system detected Trihalomethanes and Haloacetic Acids, regulated disinfection byproducts.

Total Chlorine Residual - Chlorine residual is necessary to maintain disinfection throughout the distribution system. Adding ammonia to chlorine results in a more stable disinfectant and helps to minimize the formation of disinfection byproducts. Total chlorine residual is a measure of free chlorine and combined chlorine and ammonia in our distribution system.

Cryptosporidium - Cryptosporidium is a microorganism (protozoan) naturally present in bodies of surface water throughout the world. Surface water supplies are particularly vulnerable if they receive runoff or are exposed to human or animal wastes. Since wildlife inhabit the Bull Run watershed, the Water Bureau regularly monitors for Cryptosporidium and has done so for more than ten years. Occasionally, the Water Bureau finds Cryptosporidium at low levels. No Cryptosporidium oocysts were detected in water samples in 2005. The federal Environmental Protection Agency (EPA) has issued a drinking water rule establishing new national standards to further reduce the risks of illness from Cryptosporidium. These standards, as written, require additional treatment processes for unfiltered water systems such as Portland's by 2012. Because of the protected status of Portland's Bull Run source and the very low incidence of Cryptosporidium in Bull Run source water, the city has filed a legal challenge to the new federal rule seeking to establish alternative and less expensive methods of compliance. The status of this legal challenge is unresolved at this time.

Symptoms of Cryptosporidium infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks. However, immunocompromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Please read the "Special Notice for Immuno-Compromised Persons" on the next page which describes people who may be at risk. Immunocompromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested for it to cause disease and may be spread through means other than drinking water. For more information, visit www.epa.gov/safewater/crypto.html.



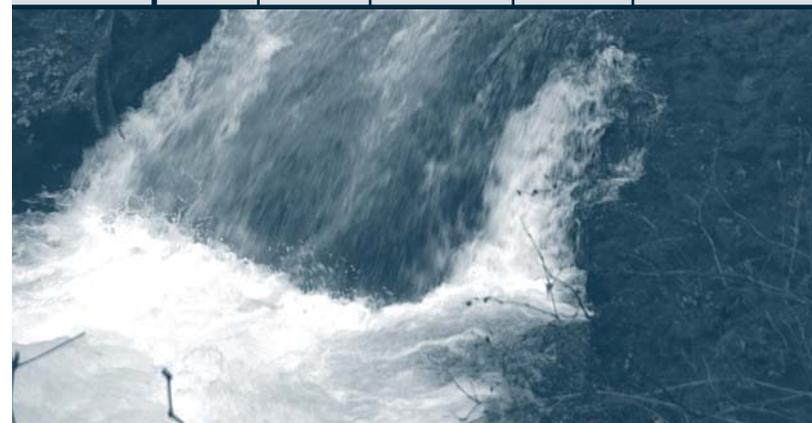
Results of Monitoring for Regulated Contaminants

TUALATIN DISTRIBUTION SYSTEM - RESERVOIRS/TANKS/MAINS

Regulated Contaminant	Minimum Detected	Maximum Detected	Maximum Contaminant Level (MCL) or Treatment Technique	Maximum Contaminant Level Goal (MCLG)	Source of Contaminant
Total Chlorine Residual	0.11	1.81	4 ppm	4 ppm	Chlorine and ammonia used to disinfect water
Asbestos Fiber* Tested in 2000	Not applicable	0.17 million fibers per liter	7 million fibers per liter >10um	zero	Asbestos cement/erosion natural deposits

DISINFECTION BYPRODUCTS TUALATIN SYSTEM

Regulated Contaminant	Minimum Detected	Maximum Detected	Maximum Contaminant Level (MCL) or Treatment Technique	Maximum Contaminant Level Goal (MCLG)	Source of Contaminant
Total Trihalomethanes Annual average/all sites	26 ppb	39 ppb	80 ppb	Not applicable	Byproduct of drinking water disinfection
Single result any one site	25 ppb	66 ppb	Not applicable	Not applicable	
Haloacetic Acids Annual average /all sites	23 ppb	42 ppb	60 ppb	Not applicable	Byproduct of drinking water disinfection
Single result any one site	18 ppb	42 ppb	Not applicable	Not applicable	





Special Notice for Immuno-Compromised Persons

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as people with cancer undergoing chemotherapy, those 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 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 You Have Any Questions about this report, please contact Mick Wilson at **503-691-3095**. You may also wish to visit the city's website at www.ci.tualatin.or.us or call the Oregon Department of Human Services Drinking Water Program at **503-731-4317** or visit their website at www.ohd.hr.state.or.us/dwp/index.cfm.

The public is invited to attend any of the regularly scheduled City Council meetings held on the second and fourth Monday at 7 pm every month. Call 503-692-2000 for meeting locations.

Frequently Asked Questions

Is my water treated by filtration?

No, Bull Run is currently not filtered. The Bull Run source meets the filtration avoidance criteria of the Surface Water Treatment Rule. The state approved Portland's compliance with these criteria in 1992.

Is there fluoride added to our drinking water?

Portland does not add fluoride to the water. No fluoride is detected in Bull Run water, but it is a naturally-occurring trace element in groundwater. The US Public Health Service and the Centers for Disease Control and Prevention (CDC) consider the fluoride levels in Portland's water sources to be lower than optimal for helping to prevent dental decay. You may want to consult with your dentist about fluoride treatment to help prevent tooth decay, especially for young children.

Is Bull Run water soft or hard?

Portland's water is very soft. Hardness of Bull Run water is typically 6-11 parts per million (approximately half of a grain of hardness per gallon). Portland's groundwater hardness is approximately 86 parts per million (about 5 grains per gallon), which is considered moderately hard.

What is the pH of Bull Run water?

In the distribution system, pH typically ranges from 7.2 to 8.2.

Are sodium levels in Portland's drinking water going to affect my health?

There is currently no drinking water standard for sodium. Sodium is an essential nutrient. At the levels found in drinking water, it is unlikely to significantly contribute to adverse health effects.

How can I get my water tested?

Call the LeadLine at 503-988-4000 for information about free lead in water testing. For more extensive testing, private laboratories can test your tap water for a fee. Not all labs are accredited to test for all contaminants. For information about accredited labs, call the Oregon Department of Human Services, Oregon Environmental Laboratory Accreditation Program at 503-229-5505 or visit www.oregon.gov/DHS/ph/orelap.

What You Should Know About Lead in Drinking Water

Lead was not detected in Portland's source water.

Exposure to lead through drinking water is possible if materials in a building's plumbing contain lead. The level of

Lead and Copper Sampling at Residential Taps

lead in water can increase when water stands in contact with lead-based solder and brass faucets containing lead.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the LeadLine (503-988-4000).

People are exposed to lead in many other ways. Dust from paint in homes built before 1978 is the most common source of exposure to lead. Other sources include soil, pottery, traditional folk medicines or cosmetics, some sports equipment such as fishing weights and ammunition, and some occupations and hobbies.

Corrosion Treatment

The Water Bureau's corrosion control treatment reduces corrosion in plumbing by increasing the pH of the water. Comparison of monitoring results with and without pH adjustment shows over 50 percent reduction in lead at the tap with pH adjustment.

The LeadLine

The Water Bureau and the City of Tualatin provide funding for the county's LeadLine, a phone line for resources about lead hazard. This program provides information about potential sources of lead in the home (including water, paint, dust, soil, pottery, and folk remedies), information on free childhood blood lead testing and lead poisoning prevention, and referrals to services to reduce lead hazards in eligible homes in the Portland metropolitan region.

Water Testing

Call the LeadLine for information about free lead in water testing. The program targets testing the water in households most at risk from lead in water, including homes of pregnant women or children age six or younger who live in houses built between 1970 and 1985.

For more information about lead hazards, lead in water testing, and childhood blood lead testing, call the **LeadLine at 503-988-4000** or visit www.leadline.org

For additional information

Oregon Department of Human Services/Drinking Water Program call 971-673-0405 or visit the website www.oregon.gov/DHS/ph/dwp

90th Percentile Values	Sites Exceeding Action Levels	Action Level (AL)*	Maximum Contaminant Level Goal (MCLG)	Source of Contaminant
COPPER 0.35	No samples exceeded	Exceeds AL if more than 10 % of homes have levels greater than 1.3 ppm	1.3	Corrosion of building plumbing systems
LEAD 12 ppb	8 of 115 samples exceeded Action Level of 15 ppb	Exceeds AL if more than 10 % of homes have levels greater than 15 ppb	zero	Corrosion of building plumbing systems

***Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water

Easy Steps to avoid possible exposure to lead from plumbing.

- 1. Never** use water from the hot water tap for making baby formula.
- 2. Use only** cold, fresh water from the cold water tap for drinking or cooking.
- 3. Avoid** using water that has been standing in the pipes. When a faucet is not used for more than six hours, run the cold water tap until the water feels noticeably colder (about 30 seconds to 2 minutes). This flushes standing water out of the pipes, replacing it with fresh water.
- 4. Use only** lead-free solder when making plumbing repairs.
- 5. Consider** using a filter. Check whether it removes lead – not all filters do. Be sure to maintain and replace a filter in accordance with the manufacturer's instructions to protect water quality.
- 6. Look for** faucets and filters which are NSF-certified to limit contaminants to acceptable drinking water levels. For more information, contact NSF International at 877-867-3435 or at www.nsf.org.