

ANNUAL WATER QUALITY REPORT

Water testing performed in 2008



City of Duvall

PWS ID#: 207508



YOUR DRINKING WATER

MEETING THE CHALLENGE

We are pleased to provide you with our annual Water Quality Report. This edition covers all testing completed from January 1 through December 31, 2008. Why are we sending this information to you? The federal Safe Water Drinking Act requires water systems to provide their customers with annual reports on the quality of their drinking water. We are happy to comply because we support your right to know about the water you drink.



The City of Duvall operates a first-class water system. We are proud of the system, and we welcome this opportunity to tell you about it. We want you to know where your drinking water comes from and how it is treated. More importantly, we want you to know your water is safe to drink and meets or exceeds all government standards. This information allows people, particularly those with special health needs, to make informed decisions about their drinking water.

We have tried to make this report easy to understand. However, drinking water quality is a complex issue and some of the information is technical. Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

INFORMATION FROM THE EPA

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) 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 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 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-compromised people such as people with cancer undergoing chemotherapy, people 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 or the Safe Drinking Water Hotline at 1 . 8 0 0 . 4 2 6 . 4 7 9 1 o r a t www.epa.gov/safewater/lead.

DRINKING WATER SOURCE

Seattle Public Utilities (SPU) provides many cities and water districts with water to supply their customers. The City of Duvall purchases all of its water from SPU. SPU has a large water main located south of the city limits in the Tolt Pipeline corridor. The City only receives water from the **Tolt Water Supply**, not the Cedar Water Supply.

Two transmission mains connect the City distribution system to the SPU supply system. A two mile long, ten-inch water main extends from the SPU pipeline to the intersection of Third Avenue and Stephens Street. A second twelve-inch transmission main connects to the SPU pipeline where it crosses Big Rock Road and extends to our large storage tank off of Big Rock Road. The water system consists of over thirty-five miles of water mains, a 2.2 million gallon storage tank, a 0.5 million gallon storage tank, and fifteen pressure reducing stations. The type of materials being used for the transmission main consists of Asbestos Cement, PVC, and Ductile Iron. Currently there are 2,257 service connections to the City transmission system.



SUBSTANCES THAT COULD BE IN 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, 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 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.

For more information about contaminants and potential health effects call the U.S. EPA's Safe Drinking Water Hotline at 1.800.426.4791.

CONTAMINATION FROM CROSS-CONNECTIONS

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (restaurant dishwashers, boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. 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 fairly routine occurrences (main breaks, heavy water demand) causing contaminants to be sucked out from the equipment and into the drinking water line (back-siphonage).

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. Garden hoses that are left lying on the ground may be contaminated by fertilizers, organic waste, or garden chemicals. Improperly installed 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. For more information, review the Cross-Connection Control Manual from the U.S. EPA's website at www.epa.gov/safewater/crossconnection.html. You can also call the Safe Drinking Water Hotline at 1.800.426.4791.



COMMUNITY PARTICIPATION

You are invited to participate in our public City Council meetings and voice any concerns you have about your drinking water. The City Council meets the 2nd and 4th Thursdays of each month at 7:00 p.m. in the meeting room at the Duvall Fire Station, 15600 - 1st Avenue, Duvall.



WATER TREATMENT PROCESS

The Tolt facility treatment process consists of a series of steps. The first step is Ozonation which is adding ozone gas, a powerful disinfectant that destroys cryptosporidium, giardia, bacteria, and viruses and aids the filtration process. This is followed by coagulation and flocculation (gently stirring the water with small doses of chemicals to bring small particles together to form large particles that can be more easily filtered), filtration (removing the suspended solids by passing the water through a 6-foot deep bed of anthracite), chlorination (adding a secondary disinfectant to provide continued protection in the distribution system against microbial contamination), fluoridation (adding fluoride which helps prevent tooth decay), and corrosion control (adding minerals, which increase the pH and alkalinity, to help reduce corrosion in building plumbing systems). All of these processes are monitored continuously at the facility, which is staffed twenty-four hours a day. To learn more about the Tolt Treatment Facility, see SPU's website at http://www.seattle.gov/util/About_SPU/Water_System/Water_Sources_& Treatment/Tolt_Treatment_Facility/index.asp or call their water quality information telephone at 206.615.0827.



TAP VS. BOTTLED

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water.

The FDA is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the EPA for community tap water. For instance, the high mineral content of some bottled waters make them unsuitable for babies and young children. Furthermore, the FDA completely exempts bottled water that is packaged and sold within the same state, which accounts for about 70% of all bottled water sold in the United States.

People spend 10,000 times more money per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their website at www.nrdc.org/water/drinking/bw/exesum.asp.

LEAD AND DRINKING WATER

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 thirty seconds to two minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline, 1.800.426.4791.

Based on the fact that there are older homes located in Duvall we feel it is important to pass along lead education material and welcome any calls you may have regarding lead in your drinking water. You may also visit this website, <http://www.epa.gov/opptintr/lead/pubs/leadinfo.htm>, for information regarding lead.

LEAD AND COPPER MONITORING RESULTS (TOLT WSA)					
Parameter and Units	MCLG	Action Level+	2008 Results*	Homes Exceeding Action Level	Source
Lead, ppb	0	15	12	4 of 51	Corrosion of household plumbing systems
Copper, ppm	1.3	1.3	0.20	0 of 51	

* 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.

SEATTLE PUBLIC UTILITIES
CEDAR AND TOLT WATER QUALITY DATA FOR 2008

		EPA's Allowable Limits		Levels in Cedar Water		Levels in Tolt Water		
Detected Compounds	Units	MCLG	MCL	Average	Range	Average	Range	Typical Sources
<i>Raw Water</i>								
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
<i>Finished Water</i>								
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 disinfection
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			20.8	11.4 - 34.2	By-products of drinking water chlorination
*Haloacetic Acids(5)	ppb	NA	60			19.1	12.5 - 25.6	
*Total Coliform	% positive samples	0	5%	Highest Month = NA Annual Average = 0				Naturally present in the environment
*Chlorine	ppm	MRDLG = 4	MRDL = 4	Average = 1.16 Range = 0.91 - 1.50				Water additive used to control microbes

**Trihalomethanes, Haloacetic Acids, Coliform, & Chlorine: test results are specifically for Duvall's water system.*

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 ex-

pected 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 2007 is 5 NTU, and for the Tolt it was 0.3 NTU. 100% of the samples from the Tolt in 2007 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 = 1ug/L = 1 microgram per liter.*

1 ppm = 1000 ppb

SAMPLING RESULTS

During the past year SPU and the City of Duvall have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table shows results for both the Cedar and Tolt Watersheds. Please remember that the city only purchase water from SPU's **Tolt** Watershed.



CRYPTOSPORIDIUM

For the Cedar, Crypto was detected in 1 out of 3 samples collected. For the **Tolt**, Crypto was detected in 0 of the 4 samples collected in 2008.

2008 ANNUAL ANALYSIS OF CEDAR & TOLT WATER SUPPLIES				
Distribution Water Quality (unless otherwise noted)				
Samples Collected: June 3, 2008 (unless otherwise noted)				
Cedar Distribution = South of the ship canal & lower elevations North of ship canal.		Tolt Distribution = Higher elevations North of the ship canal.		
Water Quality Parameter	State Dept. of Health Maximum Contaminant Level	CEDAR	TOLT	Minimum Reporting Level
Primary Standards*	MCL			
Antimony	6 ug/L	ND	ND	1.0
Arsenic	10 ug/L	ND	ND	0.5
Asbestos \$	7 million fibers/L (>10um long)	ND (1995)	ND (1995)	0.2
Barium	2000 ug/L	2.1	2.0	0.2
Beryllium	4 ug/L	ND	ND	0.2
Bromate #	10 ug/L	ND (6/04/08)	0.8 (6/10/08)	0.5
Cadmium	5 ug/L	ND	ND	0.5
Chromium	100 ug/L	ND	ND	0.5
Cyanide	200 ug/L	ND	ND	10
Fluoride	4 mg/L	1.00	1.07	0.10
Haloacetic Acids(5), Total ~	60 ug/L	17	32	1.0
Mercury	2 ug/L	ND	ND	0.2
Nickel	100 ug/L	ND	ND	0.5
Nitrate-Nitrogen	10 mg/L	ND	0.136	0.01
Nitrite-Nitrogen	1 mg/L	ND	ND	0.002
Selenium	50 ug/L	ND	ND	0.5
Thallium	2 ug/L	ND	ND	0.2
Trihalomethanes, Total~	80 ug/L	26	41	0.5
Turbidity #	5 NTU for Cedar/ 0.30 NTU for Tolt	0.32	0.21	0.05
Secondary Standards**	SMCL			
Aluminum	50 - 200 ug/L	9.3	31	1.0
Chloride	250 mg/L	5.0	3.0	0.5
Color	15 std. units	ND	ND	5.0
Fluoride	2 mg/L	1.00	1.07	0.10
Iron	300 ug/L	75	49	6
Manganese	50 ug/L	3.8	0.9	0.5
pH, range **	6.5 - 8.5 pH units	7.94 - 8.41	8.27 - 8.72	NA
Silver	100 ug/L	ND	ND	0.5
Solids, Total Dissolved	500 mg/L	61.5	41.0	5.0
Specific Conductance	700 umhos/cm	102	64.4	5.0
Sulfate	250 mg/L	1.1	1.5	1.0
Zinc	5000 ug/L	0.6	ND	0.5
Other Parameters	Units			
Alkalinity, Total (as CaCO ₃)	mg/L	30.6	19.0	2.0
Bromide	ug/L	ND	ND	5
Calcium, (as CaCO ₃)	mg/L	28.0	26.5	2.0
Copper, Source water	ug/L	1.7	0.8	0.5
Hardness, (as CaCO ₃)	mg/L	39.7	28.0	2.0
Hardness, (as CaCO ₃)	grains/gal.	2.29	1.62	0.1
Lead, Source water	ug/L	ND	ND	0.5
Magnesium	mg/L	2.87	0.37	0.01
Oxygen, Dissolved	mg/L	11.5	16.9	0.5
Phosphate, soluble-reactive	ug/L	15	3	2
Potassium	mg/L	0.50	0.12	0.02
Silica, Reactive	mg/L	9.7	5.8	1.0
Sodium	mg/L	4.63	1.04	0.08
Temperature, normal annual range	deg. C.	4 - 25	4 - 25	NA
Total Organic Carbon #	mg/L	1.13	0.90	0.20
Residential Survey @	Action Level	Combined System		
2007 Lead	15 ug/L	6.0		1.0
Reduced Monitoring				
2007 Copper	1300 ug/L	140		1.0
Reduced Monitoring				

Primary and Secondary Standards were measured at the intake to the distribution system after treatment.

* Health stds.: Supplier subject to public notification.

** Aesthetic stds.: Supplier not subject to public notification.

~ Average of the last 4 quarters testing, through 6/08.

ND = Not Detected at or above the Minimum Reporting Level

@ Measured at 90th percentile of overnight standing residential samples from homes with copper pipes and lead solder.

++ January-June 2008, 10-90th percentile

\$ Test results 12/15/95 - To be analyzed in 2009.

As measured at treatment plant.

1 ppm = 1 mg/L = 1000 ug/L

Seattle Public Utilities Water Quality Laboratory, 800 S. Stacy St., Seattle 98134 (206) 684-7834

http://www.seattle.gov/util/About_SPU/Water_System/Water_Quality/index.asp

WATERSHED PROTECTION

Watershed protection is the first line of defense in protecting the naturally pristine water of the Tolt River. The watershed is patrolled on a regular basis. Access is restricted to sensitive areas of the watershed, and human activities are managed to minimize potential impacts on water quality. We also work with other jurisdictions and agencies to establish and maintain land-use policies that minimize the potential water quality impacts from human activities in the watershed.



WATER CONSERVATION INFORMATION

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 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 every time;
- Turn off the tap when brushing your teeth;
- Fill your clothes washer to capacity. It saves water and electricity to run full loads;
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year;
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Wait for a few min-

utes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons or \$320 a year;

- 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.
- Use soaker hoses and drip irrigation verses spray style systems. Fifty percent of water evaporates when sprayed.

Please visit the Saving Water Partnership website, of which Duvall is a member, at <http://www.savingwater.org> for more ways to conserve. Cutting back on water use is good for the environment, wildlife, and our future. And it can lower your water bills, too!

WATER USE EFFICIENCY PROGRAM

Over the course of this last year city staff has been busy updating our Water Conservation Plan. In 2003 the State of Washington passed the Municipal Water Supply - Efficiency Requirements Act, often referred to as the Municipal Water Law. This Act directed the Department of Health (DOH) to design and adopt a rule that establishes water use efficiency requirements for all municipal water suppliers. The DOH adopted the Water Use Efficiency Rule which became effective January 22, 2007. This rule directs all municipal suppliers to develop a Water Use Efficiency program that includes water use efficiency goals and measures to be implemented in order to reach the goals set forth. Municipal water suppliers with 1,000 connections or more must have their initial goals set through a public process by January 22, 2008.

A Water Use Efficiency Program must include both supply and demand efficiencies. Water supply efficiency means increasing a municipal water system's transmission, storage, and delivery potential through activities that may include system wide water audits, documenting authorized uses, conducting leak surveys and repairs on meters, distribution lines, storage facilities, and valves. Water demand efficiency means minimizing the water used by the municipal water system's customers through purveyor sponsored activities that may include distributing water saving devices, providing rebates or incentives to promote water efficient technologies or by providing water audits to homes, business, or landscapes.

For more information, questions, or to request a copy of the City of Duvall Water Conservation Plan, please contact the Public Works Department at 425.788.3434.

WATERSENSE

WaterSense, a partnership program sponsored by the U.S. Environmental Protection Agency, makes it easy for citizens to save water and protect the environment. Look for the WaterSense label to choose quality, water-efficient products. Many products are available, and don't require a change in your lifestyle. For more information visit the WaterSense website at <http://epa.gov/watersense>.



NORTHWEST YARD AND GARDEN CARE RESOURCES

- A native plant guide is available on-line: <http://green.kingcounty.gov/gonative/index.aspx>;
- Rain barrel resources and information: <http://www.kingcounty.gov/environment/stewardship/nw-yard-and-garden/rain-barrels.aspx>;
- Master Gardener's Information: <http://king.wsu.edu/gardening/>.



LOOKING INTO THE FUTURE

Thank you for helping us continue providing your family with clean, quality water this year. This has been a community effort. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. Last year's improvements included updating computer controls for the water system, reconstructing mainlines and providing improved flow and water quality in the system. The City has completed installing and is using the Radio-Read meter reading system. Thank you for your understanding and support. Due to recent events throughout the nation, we have heightened the security of our water supply network and tried to limit the access to the system for your protection.

We at the City of Duvall work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water supply, which is the heart of our community, our way of life, and our children's future.

For more information on this report, or any questions relating to your drinking water, please call the Public Works Department at 425.788.3434.



INFORMATION FOR YOUR REVIEW

The City has on file for customer review, our November 2004 Water Comprehensive Plan, water quality test results, a Cross-Connection Control Plan, Development Design Standards, and the Water Shortage Response Plan. The City will be updating the Water Comprehensive Plan in 2010. We will begin the updates in 2009 so please feel free to send the Public Works Department any comments or ideas.

The City is pleased to report that our drinking water is safe and meets all federal and state requirements.



Small Town. Real Life.

Public Works Dept.
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ECRWSS