2009

Drinking Water Quality Report

A Report to the Community

City of Everett
Public Works Department

Director's Message

We are pleased to provide you with our annual drinking water quality report. This report summarizes the findings of our 2009 drinking water quality testing program. The federal Safe Drinking Water Act requires that we provide you this information annually. We are happy to comply because we want you to know your water is safe to drink.

We are very proud of the first-class water system we operate. In 2009, our water filtration plant processed more than 19.9 billion gallons of drinking water. That means, on average, about 55 million gallons of water was treated and delivered each day to water systems throughout the Everett water service area–an area comprising about 80 percent of the homes and businesses in Snohomish County.

We have tried to make this report easy to understand. If you have questions, please contact us at 425-257-8800 and ask to speak to a water quality specialist. You can also obtain more information about our water system online at: www.ci.everett.wa.us/pw.

Dave Davis,

Public Works director

May 2010

Drinking Water Source

Your drinking water comes from Spada Reservoir, located about 30 miles east of Everett at the headwaters of the Sultan River. Spada Reservoir was created in 1964 through a partnership between the City of Everett and the Snohomish County PUD as part of the Jackson Hydroelectric Project. This 50-billion-gallon reservoir serves as a collection point for rain and snowmelt from the Cascade Mountains.

Spada Reservoir is located in the Sultan Basin Watershed, an area covering more than 80 square miles. A watershed is a geographic area where all precipitation drains into a single body of water. The Sultan Basin Watershed is one of the wettest watersheds in the continental United States. The average rainfall there is about 165 inches—five times the rainfall in Everett.

To protect the naturally pristine water in Spada Reservoir, water quality in the Sultan Basin Watershed is carefully monitored. The watershed is patrolled and human activities are limited to minimize the impact on water quality. While there have been no threats to the City's water supply system, we continue to evaluate and adjust our security measures as necessary.

Drinking Water Treatment

From Spada Reservoir, our water travels through a pipeline to Chaplain Reservoir. This is where the City's water treatment facility is located. Chaplain Reservoir holds about 4.5 billion gallons of water and, on average, nearly 55 million gallons of water is treated each day at the water treatment facility.

Your drinking water is treated with advanced filtration and disinfection. First, agents are added to the water that cause particles to coagulate. Next, the water passes through large filters to remove the particles. These particles can include sediment and natural materials as well as viruses, bacteria and other disease-causing organisms. Finally, hypochlorite solution is added to the water to eliminate any organisms that were not removed by the filtration process.

During the treatment process, polymers are added as part of the filtration process, fluoride is added for dental health purposes and sodium carbonate is added to adjust the pH level of water so it is less corrosive on pipes and plumbing fixtures. These additives are carefully monitored, and the water is continually tested to make sure it is safe to drink.

Information From EPA

In order to ensure that tap water is safe to drink, 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 Environmental Protection Agency'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. Immuno-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. EPA/CDC guidelines on appropriate means to lessen risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

Detected Regulated Contaminants

Parameter	Major Source	Units	EPA Regulations		Everett Water Results		
			Ideal Level/Goal (MCLG)	Maximum Allowable (MCL)	Range or Other	Average Value or Highest Result	Comply?
Nitrate	Erosion of natural deposits, animal waste	ppm	10	10	0.049-0.120	0.087	Yes
Total Coliform Bacteria	Naturally present in the environment	% Positive	0	5% Positive per Month	0-0.8%	0.8%	Yes
Total coliform bacteria monitoring is used to track microbial quality in the water distribution system. Everett collects 120-125 samples per month. Not more than 5 percent of the monthly total can be positive for total coliforms. Total coliform was detected once in 2009.							
Fluoride	Dental health additive	ppm	2	4	0.78 - 1.1	0.94	Yes
Fluoride is added to your water in carefully controlled levels for dental health.							
Residual Disinfectant Level (free chlorine)	Added as a drinking water disinfectant	ppm	4.0 (MRDLG)	4.0 (MRDL)	0.2-1.0	0.6	Yes
Haloacetic Acids (5)	By-product of drinking water chlorination	ppb	N/A	60	18.1-41.6	26.0	Yes
Total Trihalomethanes	By-product of drinking water chlorination	ppb	N/A	80	22.3-34.2	29.4	Yes
Haloacetic acids and trihalomethanes form as by-products of the chlorination process that is used to kill or inactivate disease-causing microbes. The results reported here are from the four locations monitored to determine compliance with current regulations.							
Turbidity	Soil erosion	NTU	N/A	TT	100%	0.08	Yes
Turbidity is a measure of the amount of particulates in water in Nephelometric Turbidity Units (NTU). Particulates in water can include bacteria, viruses and protozoans that can cause disease. Turbidity measurements are used to determine the effectiveness of the treatment processes used to remove these particulates. The values reported are the lowest monthly percentage of samples that met the turbidity limit and the highest single filtered water turbidity measurement obtained for the year. In 2009 no filtered water turbidity results were above the EPA 0.3 NTU limit so the lowest percentage was 100%.							

Detected Unregulated Contaminants

Parameter	Units	Ideal Level/Goal (MCLG)	Everett Water Results	
			Range Detected	Average Value
Bromodichloromethane	ppb	0	1.0-1.7	1.4
Chloroform (trichloromethane)	ppb	70	21.3-32.6	28.0
Dichloroacetic Acid	ppb	0	4.2-16.1	10.3
Trichloroacetic Acid	ppb	300	10.7-25.5	15.7
These substances are disinfection by-products which must be monitored to determine compliance with the USEPA Stage 1 Disinfection By-products Rule.				

Drinking Water Treatment Notice

On Tuesday, Sept. 1, 2009, the City of Everett drinking water treatment plant exceeded the maximum filter flow rate approved by the State Department of Health. The incident occurred while a study was being conducted to determine the hydraulic characteristics of a new water storage facility at the plant. Water was allowed to flow through several filters above state authorized rates for approximately one hour, increasing the risk that insufficiently treated water could have entered the water system. During the event, filtered water quality remained in compliance with all drinking water standards. The State Department of Health determined there was no significant threat to public health and that a public health advisory was not needed. State and federal regulations require that a statement regarding this violation be included in this report along with the following mandatory language: *"Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."*

Lead and Copper

Parameter	Major Source	Units	EPA Regulations		Everett Water Results		
			Ideal Level/Goal (MCLG)	Action Level (AL)	90th Percentile Level	Homes Exceeding the AL	Comply?
Copper	Plumbing, erosion of natural deposits	ppm	1.3	1.3	0.188	None	Yes
Lead	Plumbing, erosion of natural deposits	ppb	0	15	3	2 of 108 (1.9%)	Yes

USEPA and state regulations require Everett and the systems it supplies to monitor for the presence of lead and copper at household taps in their combined service area every three years. The above data was collected in 2009. The next round of required sampling will be conducted in the summer of 2012. The 90th% level is the highest result obtained in 90 percent of the samples collected when the results are ranked in order from lowest to highest. The results for water tested before it enters household plumbing were even lower. This indicates that there is virtually no lead or copper in the water, but household plumbing may contribute to the presence of lead and copper at the tap.

Voluntary Information

Parameter	Units	Everett Water Results	
		Range Detected	Average Value
Alkalinity[3]	ppm	12.2-29.0	17.5
Aluminum[3]	ppb	0.008-0.050	0.016
Arsenic[4]	ppb	ND[1]	ND[1]
Calcium Hardness[3]	ppm[2]	7.1-12.0	8.9
pH[3]	s.u.	6.8-9.1	8.0
Sodium[4]	ppm	6.2-7.1	6.8
Total Hardness[2,3]	ppm[2]	9.1-13.3	11.3

[1] ND = Not detected.

[2] Hardness and alkalinity units are in ppm as $CaCO_3$ (calcium carbonate equivalent units).

[3] Results are from samples collected from 26 locations in Everett's distribution system.

[4] Sodium and Arsenic are monitored at the treatment plant effluent.

Cryptosporidium:

Cryptosporidium is a one-celled intestinal parasite that if ingested may cause diarrhea, fever and other gastrointestinal distress. It can be found in all of Washington's rivers, streams, and lakes and comes from animal or human wastes deposited in the watershed. *Cryptosporidium* is resistant to chlorine, but is removed by effective filtration and sedimentation treatment such as that used by Everett. It can also be inactivated by certain types of alternate disinfection processes such as ozonation and UV light contactors. In 2009, Everett tested the source water at the plant intakes for *Cryptosporidium* oocysts on a weekly basis through the month of April, and on a monthly basis from May through December. No oocysts were detected In the 26 samples collected.

Treatment Polymers:

During water treatment, polymer coagulants are added to improve coagulation and filtration that remove particulates from water. The particulates that are removed can include viruses, bacteria and other disease causing organisms. The USEPA sets limits on the type and amount of polymer that a water system can add to the water. In addition to the EPA limits, the State of Washington also requires that all polymers used be certified safe for potable water use by an independent testing organization (NSF International). During treatment, Everett adds only NSF approved polymers and the levels used are far below the safe limits set by USEPA.

Important Terms:

- Maximum Contaminant Level Goal (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 (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 water treatment technology.
- Maximum Residual Disinfectant Level (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.
- Maximum Residual Disinfectant Level Goal (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.
- Treatment Technique (TT) – A required process and performance criteria intended to reduce the level of a contaminant in drinking water.
- Action Level (AL) – The concentration of a contaminant, which, if exceeded, triggers a treatment or other requirements which a water system must follow.
- Parts per million (ppm)/ parts per billion (ppb) – A part per million means that one part of a particular contaminant is present for every million parts of water. Similarly, parts per billion indicate the amount of a contaminant per billion parts of water.
- Not Applicable (N/A) – Means EPA has not established MCLGs for these substances.

Water Conservation Report

In November 2007, the City of Everett adopted a water conservation savings goal in compliance with the state water use efficiency requirements. Our goal is to save 1.97 million gallons of water a day (MGD) by the end of 2012. These savings are based on a six-year regional water conservation plan (2007-2012) that was collaboratively developed with the regional water systems served by Everett.

The plan calls for spending about $600,000 a year on regional water conservation activities through 2012. This includes youth education, indoor and outdoor water conservation kits and rebates for water efficient clothes washers and toilets. The City is required to report on the progress of this program annually to the state and the customers we serve.

In 2009, 700 water conservation workshops were conducted in classrooms throughout Snohomish County, reaching more than 18,000 students. More than 4,800 clothes washer rebates and 500 toilet rebates were issued. Participating water systems also distributed 180,000 lawn water calendars, 4,300 indoor conservation kits and 5,500 outdoor conservation kits. And, under a new program, 690 low-flow spray nozzles and 2,600 faucet aerators were installed in commercial kitchen facilities.

These 2009 activities achieved an estimated savings of 1.04 MGD, surpassing the 2009 savings goal of 0.83 MGD. This brings the cumulative savings for 2007 through 2009 to 1.73 MGD – 120 percent of our three-year goal (1.43 MGD) and 88 percent of the six-year goal (1.97 MGD).

General Information

All water sources (both tap water and bottled water) contain impurities. As water flows 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 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 and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm 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 be the result of oil and gas production and mining activities.

Next Steps

For more information about drinking water quality, please contact:

City of Everett Water Quality Office:

Phone: 425-257-8800

Website: www.ci.everett.wa.us/pw

Environmental Protection Agency (EPA):

Phone: 1-800-426-4791

Website: www.epa.gov/safewater

State Department of Health (DOH):

Phone: 1-800-521-0323

Website: www.doh.wa.gov/ehp/dw/

To get involved in decisions affecting your drinking water, attend and comment at Everett City Council meetings, every Wednesday in the Council Chambers at 3002 Wetmore Ave. Meetings begin at 6:30 p.m., except the meeting on the fourth Wednesday of each month which is at 12:30 p.m. Agendas are available on the City's website at www.ci.everett.wa.us.

City of Everett Elected Officials:

Mayor:
Ray Stephanson

City Council:
President Paul Roberts, Shannon Affholter, Ron Gipson, Arlan Hatloe, Jeff Moore, Drew Nielsen and Brenda Stonecipher

City of Everett
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Partnership for Safe Water

The Partnership for Safe Water is a voluntary cooperative effort supported by more than 200 water utilities, the USEPA, the American Water Works Association and other prominent drinking water organizations in the United States. The goal of the Partnership program is for participating utilities to use a continuous improvement process developed by the Partnership members.

The program strives to help drinking water utilities optimize their treatment plants to produce drinking water of a higher quality than is required by the regulations. To participate, each treatment plant must demonstrate that it can consistently meet the Partnership water quality standards at one of four levels.

Since the City of Everett began participating in this program, it has met the second highest level of performance standards set by the Partnership in 10 of the past 11 years. Recently the City has renewed its commitment to continuously improving performance at the Everett Water Filtration Plant and has been working to incorporate some of the Partnership's tools into a new improvement program that is being developed at the plant.

The City of Everett will continue participation in this cooperative effort to strive for excellence. As the new program to improve operations and water quality at the treatment plant is implemented, the Utility hopes to qualify at the highest Partnership level in the future. We believe this is the best way to insure our customers will always have the highest quality drinking water possible.

Contributors: Editor: Greg Moore • Water Quality Specialist: Mark Weeks • Layout & Design: Libby Allen, Allengraphics