



**PORT ANGELES COMPOSITE  
FAIRVIEW / BLUFFS WATER DISTRICT  
WATER QUALITY REPORT FOR 2010  
(DOH #432960)**

Dear Water Customer:

We are pleased to provide you with this year's Annual Water Quality Report. We want to keep you informed about the excellent water and services you have been receiving over the past year. Our goal is and always has been, to provide to you a safe and dependable supply of drinking water. *Informed customers are our best allies in maintaining safe drinking water!*

We encourage public interest and participation in our community's decisions affecting drinking water. Regular meetings with the District's Board of Commissioners are held each Monday at our Port Angeles office (2431 Highway 101 East) at 1:30 p.m. The public is welcome. You may also learn more about PUD #1 of Clallam County by contacting our website at [www.clallampud.net](http://www.clallampud.net), or by calling 360-452-9771 or toll free at 1-800-542-7859.

**WATER SYSTEM INFORMATION**

**Water Source and Treatment:** This water system is primarily supplied water from the Morse Creek Treatment Plant. Your drinking water is treated with advanced membrane-filtration technology and disinfection. Water passes through 0.1 micron membrane filters that remove any particles. These particles can include sediment and natural materials as well as viruses, bacteria and other disease-causing organisms. Occasionally, chemicals are added to this process that helps the particles to coagulate.

During the treatment process, aluminum sulfate is added to aid in the filtration process. Citric acid and sodium hydroxide are added to adjust the pH level of the water which aids in filtration and to make the water less corrosive on pipe and plumbing fixtures. These additives are carefully monitored, and the water is continually tested to make sure it is safe to drink. Finally, chlorine is added to provide disinfection to the water throughout the distribution system.

The lower Fairview and Bluffs area (below 410-foot elevation) may be supplied water service from the Morse Creek Treatment Plant or from the Bluffs Well. The Bluffs Well is mainly used as a back-up source during the winter months when turbidity is high in Morse Creek and for peak demand periods during summer months.

A third water source for the Fairview area is the Township Line Road Well, which is available as an emergency back-up source.

Finished water is pumped to a 300,000-gallon reservoir and a 200,000-gallon reservoir. From each of these reservoirs, potable water and fire flow is available based on system demand.

Water quality testing and monitoring of this water system(s) is completed daily by certified District personnel. *We are pleased to report that the water provided by the District meets or exceeds established water quality standards.*

**Water Quality Data:** During the past year we have taken numerous water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic and/or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state allows 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 date the sample was taken. All monitoring results of regulated and unregulated contaminants are available at our Port Angeles office.

**Water Quality Data Table Definitions:**

*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 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 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.

*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 contamination.

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

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

*Variances and Exemptions:* State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

**Key to the Water Quality Data Table:**

AL	= Action Level	NA / ND	= Not Applicable / Not Detectable
MCL	= Maximum Contaminant Level	pCi/L	= picocuries per liter (a measure of radioactivity)
MCLG	= Maximum Contaminant Level Goal	ppm	= parts per million, or milligrams per liter (mg/l)
MFL	= million fibers per liter	ppb	= parts per billion, or micrograms per liter (µg/l)
mrem/year	= millirems per year (a measure of radiation absorbed by the body)	ppt	= parts per trillion, or nanograms per liter
NTU	= Nephelometric Turbidity Units	ppq	= parts per quadrillion, or picograms per liter
		TT	= Treatment Technique
		uS/cm	= Microsiemens per centimeter

**Regulated Water Quality Data Table:**

Contaminant	Sample Date	Unit	MCL	MCLG	Detected Level	Range	Violation	Major Sources
<b>FAIRVIEW/MORSE CREEK TREATMENT PLANT WATER SOURCE: Microbiological Contaminants</b>								
Turbidity (Highest daily measurement)	1/13/10	---	TT (NTU)	NA	0.03	NA	NO	Soil runoff.
Turbidity (Lowest monthly percentage)	9/10	---	TT (% = <0.3 NTU)	NA	100%	NA	NO	Soil runoff.
<b>FAIRVIEW/MORSE CREEK TREATMENT PLANT AND BLUFFS WELL: Disinfection Byproducts (DBPs)</b>								
Total Trihalomethanes (Fairview)	Quarterly	ppb	80	NA	26.8 Avg	0 - 80	NO	Byproduct of drinking water chlorination.
Halo-Acetic Acids (Fairview)	Quarterly	ppb	60	NA	22.8 Avg	0 - 60	NO	Byproduct of drinking water chlorination.

Contaminant	Sample Date	Unit	MCL	MCLG	Detected Level	Range	Violation	Major Sources
Total Organic Carbons (Fairview)	Monthly	ppm	8	NA	1.09 Avg	0-8	NO	Naturally present in the environment.
Total Trihalomethanes (Bluffs)	Quarterly	ppb	80	NA	20.0 Avg	0 - 80	NO	Byproduct of drinking water chlorination.
Halo-Acetic Acids (Bluffs)	Quarterly	ppb	60	NA	18.1 Avg	0 - 60	NO	Byproduct of drinking water chlorination.
<b>FAIRVIEW/MORSE CREEK TREATMENT PLANT AND BLUFFS WELL: Inorganic Contaminants</b>								
Nitrate (Bluffs)	9/7/10	ppm	10	10	0.67	0 - 10	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Lead	8/6/08	ppb	AL=15	0	2	NA	NO	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	8/6/08	ppm	AL=1.3	1.3	0.049	NA	NO	Corrosion of household plumbing systems; erosion of natural deposits.
Radium 228	7/12/10	pCi/l	5	0	1.68	NA	NO	Erosion of natural deposits.
<b>BLUFFS WELL: Secondary Substances</b>								
Electrical Conductivity	Bi-Annual	uS/cm	700	NA	315 Avg	0-700	NO	Measure of the ability of a material or dissolved solids to convey an electric current.
Chloride	Bi-Annual	ppm	250	NA	9.7 Avg	NA	NO	Weathering of various rocks and soil.
Hardness	Bi-Annual	mg/l	NA	NA	117.7 Avg	NA	NO	Weathering of various rocks and soil.

**Water Quality Table Footnotes:** If you have questions about the potential health effects of Lead or Copper in drinking water, please visit the DOH website at <http://www.doh.wa.gov/ehp/dw/> and select a contaminant for detailed information.

*Turbidity* does not present any risk to your health. We monitor turbidity, which is a measure of the cloudiness of the water, because it is a good indicator that our filtration system is functioning properly. Even with a higher detected daily level, turbidity performance is considered satisfactory if a minimum of 95% of the daily turbidity samples for the month are less than 0.3 NTU.

*Total Organic Carbons (TOCs)* can react with chlorine to form compounds known as disinfection by-products (DBPs). The most common DBPs are Trihalomethanes and Haloacetic acids. The District started monthly monitoring of TOCs in March 2010 to see if this system is eligible for reduced monitoring of DBPs in the future.

**Other Test Results:**

*Chlorine Residual:* Chlorine is used as a disinfectant in the water treatment process, and should be detectable in at least 95% of the samples taken each month. All of the samples taken for this water system showed a Chlorine residual.

**Total Coliform Bacteria:** Zero Coliform Bacteria were detected in the monthly samples collected. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present.

**Hardness:** Calcium and Magnesium are naturally occurring minerals in groundwater. These minerals are measured to determine water hardness. Hardness interferes with the sudsing action of soap. According to the U.S. Geological Survey, the scale of hardness is: 0-55 mg/l = Soft; 55-100 mg/l = Slightly Hard; 100-200 mg/l = Moderately Hard; >200 = Very Hard.

Hardness for this system varies according to water source. Samples taken from the Bluffs Well in 2010 showed an average of 117.7 mg/l. Appliance manufacturers convert this number into Grains per Gallon by dividing it by 17.1 (e.g., 117.7 mg/l / 17.1 = 6.9 Grains per Gallon). The sample taken from the Fairview TP in 2008 showed 58.6 mg/l (or 3.43 Grains per Gallon).

**Fluoride:** The District does not add fluoride to this water system. Fluoride is a natural substance found in varying degrees in almost all water supplies. Fluoride was not detected in this water system during the last inorganic test completed.

**Additional Health Information:** The Environmental Protection Agency (EPA) regulates the amount of certain contaminants in the water that is provided by public water systems. However, Food and Drug Administration (FDA) regulations were established to limit the 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 (1.800.426.4791).

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.

**Source Water Assessment:** The DOH has completed a source water assessment for this system. All surface waters in Washington, as with Morse Creek, are given a susceptibility rating of high, regardless of whether contaminants have been detected or whether there are any sources of contaminants in the watershed or runoff areas to the river or creek.

The susceptibility rating for wells largely depends on the amount or depth of the confining layer over the well. The Bluffs Well has a susceptibility rating of moderate; while the Township Line Road Wells have ratings of low to moderate. A copy of the reports can be found on the DOH website:  
<http://www4.doh.wa.gov/dw/swap/app/login.cfm?app=maps>.

Contaminants that may be present in source water include:

- (A) *Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) *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.
- (C) *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.
- (D) *Organic chemical contaminants*, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.

(E) *Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than is the general population. Immuno-compromised 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 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 the risk of infection by *Cryptosporidium* are available from the EPA's Safe Drinking Water Hotline (1.800.426.4791).

**Variations and Exemptions:** Under a waiver granted in January 2002 through 2010 by the DOH, the Bluffs Well source was approved for reduced monitoring of certain inorganics (metals, minerals, natural deposits). Previous background test results from DOH indicated that these substances were either not detected or below MCL in this water source. The EPA and/or DOH grant a variance or exemption only upon finding that the variance or exemption will not result in an unreasonable risk to health.

**Partners in Conservation:** Water is essential to every dimension of life, yet less than 1 percent of the Earth's water supply is fit and available for human consumption. As demand for water continues to increase, every drop of water is becoming more important than ever before.

The DOH has adopted a rule that establishes water use efficiency (WUE) requirements for all municipal water suppliers. Water use efficiency will help us conserve water for the environment and future generations. It will also enhance public health by improving water system efficiency and reliability.

A few primary elements of this rule include improving operational efficiency; evaluating and reporting water production and usage; and reducing water leaks both on the distribution side and the customer side of the water system. The table below lists production amounts vs. purchased or authorized usage and the percentage difference of the unaccounted-for or probable system leakage. The goal is to account for a minimum of 90% of water produced.

<b>Distribution System Leakage Summary</b> (in millions of gallons: 1 cubic foot = 7.48 gallons)	
Total Water Produced – Annual Volume	120.3
Total Water Purchased and Authorized Usage – Annual Volume	110.04
Distribution Unaccounted-for or System Leakage – Percent	8.5

Together we can keep the percentage to 10% or less, and save water and money in the process! Here are some tips to work towards this goal and to be more water efficient:

- If you see an odd wet spot in a normally dry area, call the PUD.
- Someone other than the Fire Dept. or PUD using a fire hydrant, call the PUD.
- Run your washing machine and dishwasher only when they are full.
- Turn off the tap when brushing your teeth, washing, shaving, or cleaning fruits and vegetables.
- Check every faucet inside and outside your home for leaks; a slow drip can waste 15 to 20 gallons a day. Fix it and you could save up to 6,000 gallons a year.
- 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 not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you could save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Write down the numbers across the face of the meter. Then check the water meter after 30 minutes. If the numbers increased at all, you have a leak.
- For deep root and drought tolerance, water your plants deeply, but less often.
- Replace old water appliances with Energy Star appliances – get a PUD REBATE: [www.clallampud.net](http://www.clallampud.net).

- Water wasted is water lost. For more information, go to these web-sites: [www.wateruseitwisely.com](http://www.wateruseitwisely.com) and [www.h2ouse.org](http://www.h2ouse.org).

**Abbreviated Terms Used in This Report** (alphabetical order):

AIDS: Acquired Immune Deficiency Syndrome	FDA: Food and Drug Administration
CDC: Centers for Disease Control	HIV: Human Immuno-Deficiency Virus
DBP: Disinfection Byproducts	MGD: Million Gallons per Day
DOH: (Washington State) Department of Health	TOC: Total Organic Carbons
EPA: Environmental Protection Agency	WUE: Water Use Efficiency

No matter how we grow, we continually strive to fulfill our mission:

***Providing reliable, efficient, safe, and low cost utility services in a financially and environmentally responsible manner.***

For more information or questions regarding this report, please call PUD #1 of Clallam County at 360.565.3254.