

## Dear Skagit PUD Customer,

At Skagit PUD, we are committed to providing you the safest and most reliable drinking water possible. This report is a snapshot of the quality of water that we provided in 2009. Inside are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

For information about your drinking water, please call Skagit PUD at (360) 424-7104. We welcome your comments and suggestions. We also invite you to attend Skagit PUD commission meetings. The commissioners hold open meetings every Tuesday of the month at 4:30 p.m. in our Aqua Room located at 1415 Freeway Drive, Mount Vernon.



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## Your Drinking Water

### Where does your water come from?

FOR CUSTOMERS LIVING IN OR NEAR BURLINGTON, MOUNT Vernon, and Sedro-Woolley, your drinking water comes from Judy Reservoir, a 1.45 billion gallon reservoir located above the town of Clear Lake. Judy Reservoir is filled with water that has been diverted from four creeks in an uninhabited, nine square mile, forested area in the Cultus Mountain watershed. Water is also pumped from the Skagit River to Judy Reservoir during critical periods or when the streams run low in order to protect fish habitat.

Water is pumped from Judy Reservoir to the adjacent water treatment plant, which was placed into service in 1990. The treatment plant is staffed 24 hours per day by certified water treatment plant operators who are continually trained in the latest water treatment techniques.

The treatment process begins with primary

disinfection using chlorine dioxide. Then, agents are added to cause small particles to combine into larger clusters that can be more easily settled and filtered from the water, a process called coagulation and flocculation. The water passes through filters of anthracite and sand, removing suspended particles and impurities. After leaving the treatment plant, the pH is adjusted and the water is disinfected using chloramines. The levels of additives are monitored constantly to assure proper dosages are maintained.

The treatment plant was recently expanded to increase its process capacity to 30 million gallons of water each day. Treated water flows to the customers in the Skagit Valley by way of two major transmission pipelines that are part of the 600 miles of pipelines that serve PUD customers.

## [ sources of contaminants ]

The sources of drinking water (both tap water and bottled water) include lakes, rivers, 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 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 water 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 storm water runoff, and residential uses.

**Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

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

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 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 some 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 (1-800-426-4791) or at [www.epa.gov/safewater](http://www.epa.gov/safewater).

### Assessing your health risk

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, 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 from their health care providers about drinking water.

Environmental Protection Agency/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

## Source Water Protection

To achieve improved protection of public water supply sources and the health of Washington's citizens, the Washington State Department of Health has developed the Source Water Assessment Program (SWAP).

The SWAP program evaluates potential threats to the safety of our water supplies by assessing sources of contamination. The SWAP is designed to give you and your community more information about the source of your drinking water, and any threats to its long-term quality that we can identify and address through a pollution prevention approach.

To learn more about the SWAP, contact the Washington State Department of Health at (360) 236-3149 or visit [www.doh.wa.gov/ehp/dw](http://www.doh.wa.gov/ehp/dw).



Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.



## WATER QUALITY REPORT

*water testing performed in 2009*

Judy Reservoir Public Water System ID# 79500 E  
Fidalgo Island Public Water System ID# 00932 Y



## WATER USE EFFICIENCY UPDATE FOR 2009

CONTINUED FROM PAGE 3



barrel workshop program. Workshop participants learn how to build, set-up and maintain a rain barrel. Collecting rainwater is an easy way to conserve water—and save money on your water bill. During the drier season, when water

consumption often doubles, using collected rainwater also reduces the strain on the water supply and keeps more water available for fish and wildlife.

### 3. Reduce distribution system leakage by one percent.

Skagit PUD operates the most expansive water system in Skagit County with over 22,400 metered services, serving approximately 65,000 people. The majority of Skagit PUD's services are within the Judy Reservoir system; however, the PUD also operates seven remote water systems that we monitor for water quality.

All water services in Skagit PUD's water systems are metered. The PUD tracks high use meters to check on accuracy and our meter technicians routinely replace service meters that show signs of inaccuracy or failure.

In 2009, Skagit PUD completed a multi-year project for replacing its manual-read water meters with an automatic meter reading system. The new meters provide improved leak detection. Each one is equipped with a leak alarm that can alert the meter technician that an account may have a potential leak.

Finding water leaks can save you water, which means saving money on water and sewer bills. If ignored, a water leak could also result in costly property damage.

Please see the table on Page 3 for Skagit PUD's water system production performance for 2009.

# Water Quality Data

The tables below list all the drinking water contaminants that we detected during the 2009 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 to December 31, 2009. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

## 2009 Drinking Water Results – Regulated Contaminants

Lead and Copper	AL	MCLG	Skagit PUD Water	Number of sites found above the Action Level			Typical Source of Contaminant
Lead (ppb)	15	0	0.003	1 site out of 30 sites sampled			Corrosion of household plumbing
Copper (ppm)	1.3	1.3	0.87	None			Corrosion of household plumbing
Microbiological Contaminants	MCL (MRDL)	MCLG (MRDLG)	Skagit PUD Water	Range of Detections	Sample Date	Violation	Typical Source of Contaminant
Turbidity (NTU)	TT	n/a	0.03	0.02 - 0.04	2009	NO	Soil erosion
Total Coliform Bacteria	>5% Samples	0.0	0%	n/d	2009	NO	Naturally present in environment
Disinfection By-Products							
Trihalomethanes (ppb)	80	n/a	34.0	9.3 - 65.5	2009	NO	By-product of drinking water chlorination
Haloacetic Acids (ppb)	60	n/a	41.6	11.8 - 46.7	2009	NO	By-product of drinking water chlorination
Chlorine Residual (ppm)	4.0	4.0	0.88	0.03 - 1.65	2009	NO	Remaining chlorine from disinfection process
Inorganic Compounds							
Chloride (ppm)	250	n/a	5.3	n/d	2009	NO	Erosion of natural deposits
Sodium (ppm)	n/a	n/a	8.5	n/d	2008	NO	Erosion of natural deposits

**WAIVER.** The Washington State Department of Health has reduced the monitoring requirements for volatile organic chemicals, inorganic chemicals, and synthetic organic chemicals because the source is not at risk of contamination. The last sample collected for these contaminants were taken in December 2006 and June 2008 and were found to meet all applicable EPA and Department of Health standards.

## Water supplied by Anacortes

For those living in or near **Country Club, Port of Skagit County, Bayview,** and the **Dewey Beach** and **Similk Beach** areas of Fidalgo Island, your drinking water is produced by the Anacortes water treatment plant, whose sole source of water is the Skagit River. The Anacortes water treatment plant also uses disinfection, coagulation, and filtration to treat water. The entire Anacortes treatment process is professionally staffed and constantly monitored.

Please refer to the map to determine if you are supplied with Anacortes water. We have included information about Anacortes water quality in this report for your review.

## 2009 Drinking Water Results – Regulated Contaminants

Lead and Copper	AL	MCLG	Anacortes Water	Number of sites found above the Action Level			Typical Source of Contaminant
Lead (ppb) (2007 sample)	15	0	2.0	0 sites out of 30 sites sampled			Corrosion of household plumbing
Copper (ppm) (2007 sample)	1.3	1.3	0.05	0 sites out of 30 sites sampled			Corrosion of household plumbing
Microbiological Contaminants	MCL (MRDL)	MCLG (MRDLG)	Anacortes Water	Range of Detections	Sample Date	Violation	Typical Source of Contaminant
Turbidity (NTU)	TT	n/a	0.19	0.02 - 0.19	2009	NO	Soil erosion
Total Coliform Bacteria	>5% Samples	0.0	0%	n/d	2009	NO	Naturally present in environment
Disinfection By-Products							
Trihalomethanes (ppb)	80	n/a	28.8	18.1 - 42.2	2009	NO	By-product of drinking water chlorination
Haloacetic Acids (ppb)	60	n/a	20.2	13.9 - 29.4	2009	NO	By-product of drinking water chlorination
Chlorine Residual (ppm)	4.0	4.0	0.7	0.6 - 0.8	2009	NO	Remaining chlorine from disinfection process
Inorganic Compounds							
Nitrate (ppm)	10	10	n/d	n/d	2009	NO	Erosion of natural deposits

# Cross Connection

## Keeping contaminants out of your water



**It** IS A LOGICAL ASSUMPTION that because water is always under pressure, it can only flow in one direction. However, can it flow the opposite way from its intended direction? The answer is **yes**, and when it does it can cause disastrous results. Water will always flow toward the point of lowest pressure. If a water main in the public water system should break, or if a fire occurred and the fire department opened several hydrants, the pressure in the water mains could drop dramatically, causing a reversal of flow. The potential for this

reversal of flow is why Skagit PUD is concerned about the possibility of contaminants or pollutants being siphoned back into the water system. When the plumbing at a residence is connected to the potable water supply, and it is connected to piping carrying another fluid or gas, such as an air conditioner containing chemicals to kill algae, the contaminant could be drawn back into our water mains. A garden hose submerged into a hot tub or swimming pool, or inserted into your car's radiator to flush out antifreeze, or attached to a

fertilizer sprayer, could siphon these contaminants back into our water mains. Incidents such as these have been documented throughout the country and have happened all too often. Fortunately, back flow from a cross connection can be prevented. Skagit PUD's Cross Connections Program protects the water system from contaminants by ensuring that customers have properly installed and maintained back flow prevention devices. Call Water Quality at (360) 848-2138 for more information.

## [ GLOSSARY: Water Quality Definitions ]

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

**Haloacetic Acids.** A disinfection by-product from chlorinating water that contains natural organic matter.

**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.

**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 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 health benefits of the use of disinfectants to control microbial contaminants.

**Not Applicable (n/a).** Does not apply.

**Not Detected (n/d).** Indicates that the parameter was not detected above the Specified Reporting Limit.

**Nephelometric Turbidity Units (NTU).** A unit of measure for turbidity based on the amount of light that is reflected from the water.

**Part per million (ppm).** One part per million is equivalent to half of an aspirin tablet dissolved in a full bathtub of water (approximately 50 gallons).

**Part per billion (ppb).** One part per billion is equivalent to half of an aspirin tablet dissolved in 1,000 bathtubs of water (approximately 50,000 gallons).

**Total Coliforms.** A group of non-pathogenic

bacteria used in testing water to indicate the presence of pathogenic bacteria. They are naturally present in the environment. If coliforms were found in more samples than allowed, it would be a warning of potential problems.

**Trihalomethanes.** A disinfection by-product from chlorinating water that contains natural organic matter. The most common by-product is chloroform.

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

**Turbidity.** A measure of the cloudiness of water due to suspended particles.

# WATER USE EFFICIENCY 2009

## Skagit PUD Six-Year Water Use Efficiency Goals Update

In 2007, Skagit PUD established measurable water-saving goals for the next six years for both the supply- and demand-side of our distribution system. The goals provide a benchmark for achievement and play a significant role in defining the success of the PUD's water use efficiency program. Our water use efficiency goals and the steps we are taking to meet those goals are as follows:

**1. Reduce consumption per Equivalent Residential Units from 178 gallons per service per day to 175 gallons per service per day.**

Billing data for 2009 indicates that our Equivalent Residential Units—water use for a typical single-family residence—was 175.3 gallons per service per day, which is a 1.69 percent reduction since 2006. Skagit PUD continues to focus its public education efforts on providing customers with simple water-saving ideas to use at their home or business.

In 2009, Skagit PUD's public outreach activities included staffed informational booths at local community events, fairs and trade shows. Skagit PUD staff shared ideas on how to identify and stop common leaks, conserve water, and ways to use water more efficiently.

Five-minute shower timers and toilet leak detection kits continue to be popular water-saving items at our education booths.

A number of customers participated in our Water Meter Monitor Program. Customers have the option to buy or borrow a water meter monitor to calculate their water use and be alerted in the occurrence of a leak.

Skagit PUD is a conservation partner with the EPA's WaterSense program to help customers decrease indoor and outdoor water use through water-efficient products and simple water-saving practices.

The program encourages customers to look for WaterSense labeled products, which have been independently certified for efficiency and performance, and promotes water-saving techniques that reduce stress on water systems and the environment.

**2. Reduce the summer peak flows from 1.7 times Average Daily Demand to 1.6 times Average Daily Demand.**

During summer months, about

30 percent of a family's household water use per day is devoted to outdoor purposes. More than half of that outdoor water is used for watering lawns and gardens.

Skagit PUD's summer peak flows for 2009 were 1.62 times the average daily demand (ADD). ADD is defined as the average quantity, over a one-year period, of daily water usage in the water system. In 2009, ADD for the Judy Reservoir system was 7.5 million gallons per day (mgd). Summer peak flows were 12.2 mgd. In 2008, the summer peak flows were 1.46 times ADD. The summer of 2009 was considerably warmer and drier than 2008, and we believe this significantly contributed to the greater demand for water.

In an effort to continue to reduce summer peak flows, Skagit PUD is focusing on creating public awareness of the need to use water wisely. The PUD provides outdoor water-saving tips in each issue of our *Pipeline* newsletter. We also utilize special publication advertising, the PUD's Web site, and social media tools (Facebook and Twitter) to encourage customers to be water-wise and let their lawns go dormant in the summer.

In October, Skagit PUD introduced its rain WUE Report > [SEE PAGE 4](#)



Water System Performance 2009	
Judy Reservoir Production	2,939,198/Kgals Produced
Judy Reservoir Billed	2,729,305/Kgals Billed
% Distribution System Leakage	7.1% DSL
Alger Production	7,821/Kgals Produced
Alger Billed	6,972/Kgals Billed
% Distribution System Leakage	10.9% DSL
Cedargrove Production	9,468/Kgals Produced
Cedargrove Billed	8,215/Kgals Billed
% Distribution System Leakage	13.2% DSL
Fidalgo Island Production	55,529/Kgals Produced
Fidalgo Island Billed	55,087/Kgals Billed
% Distribution System Leakage	0.8% DSL
Marblemount Production	2,300/Kgals Produced
Marblemount Billed	1,091/Kgals Billed
% Distribution System Leakage	52.6% DSL (Faulty meter)
Potlatch Beach Production	576/Kgals Produced
Potlatch Beach Billed	575/Kgals Billed
% Distribution System Leakage	0.2% DSL
Rockport Production	3,854/Kgals Produced
Rockport Billed	3,308/Kgals Billed
% Distribution System Leakage	14.2% DSL
Skagit View Village Production	3,824/Kgals Produced
Skagit View Village Billed	3,600/Kgals Billed
% Distribution System Leakage	5.9% DSL

Numbers calculated in thousands of gallons.

The chart above reports each system's water production performance for 2009. All water that is not authorized consumption is considered distribution system leakage (DSL). Some examples of water use considered leakage include: water main breaks, theft, meter inaccuracies, meter reading errors, data collection and calculation errors.