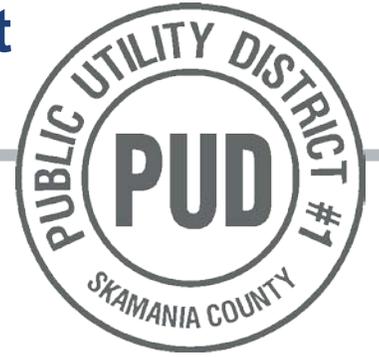


# 2016 Drinking Water Quality Report

## Carson and Underwood Water Systems



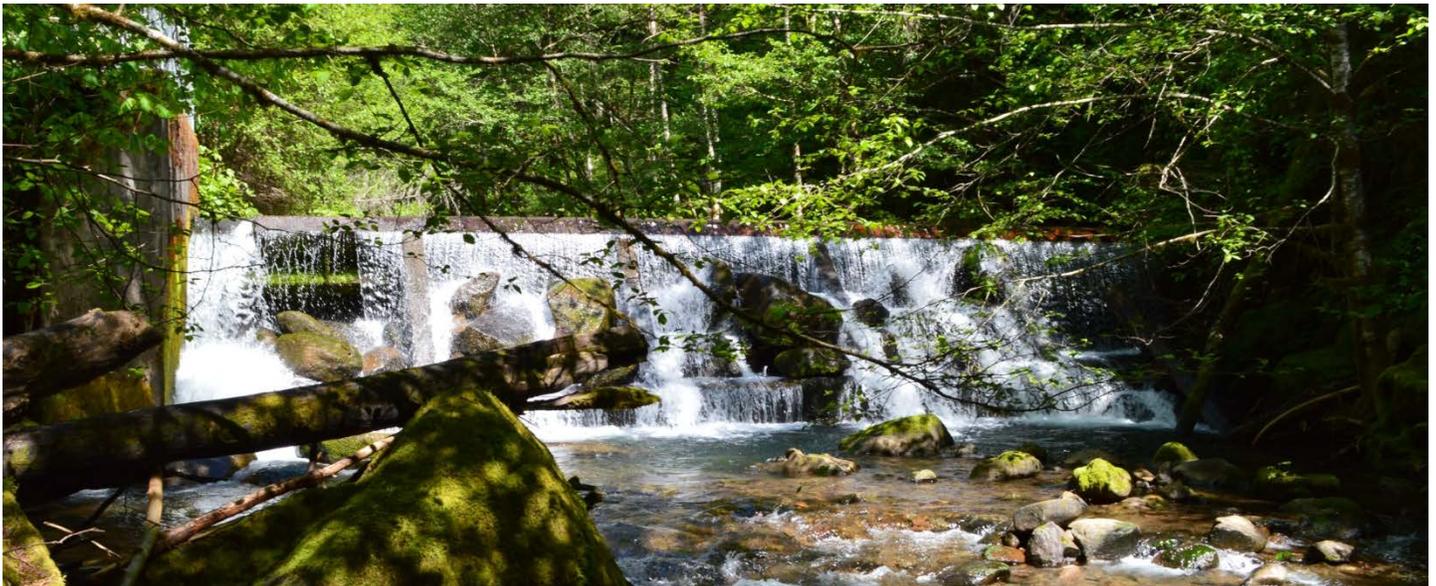
### What is this report?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

*This year, you may be reading the report online, rather than the traditional paper copy sent by mail. The Environmental Protection Agency recently changed the requirements to allow utilities to communicate this important information digitally. Customers are still able to request a paper copy by calling 509-427-5126 or emailing [info@skamaniapud.com](mailto:info@skamaniapud.com).*

### Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than 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. Environmental Protection Agency's (EPA) /Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).



Bear Creek Dam | Carson, WA

#### SPANISH (ESPAÑOL)

*Este informe contiene información muy importante sobre la calidad de su agua potable. Por favor lea este informe o comuníquese con alguien que pueda traducir la información.*

## Where does my water come from?

### CARSON

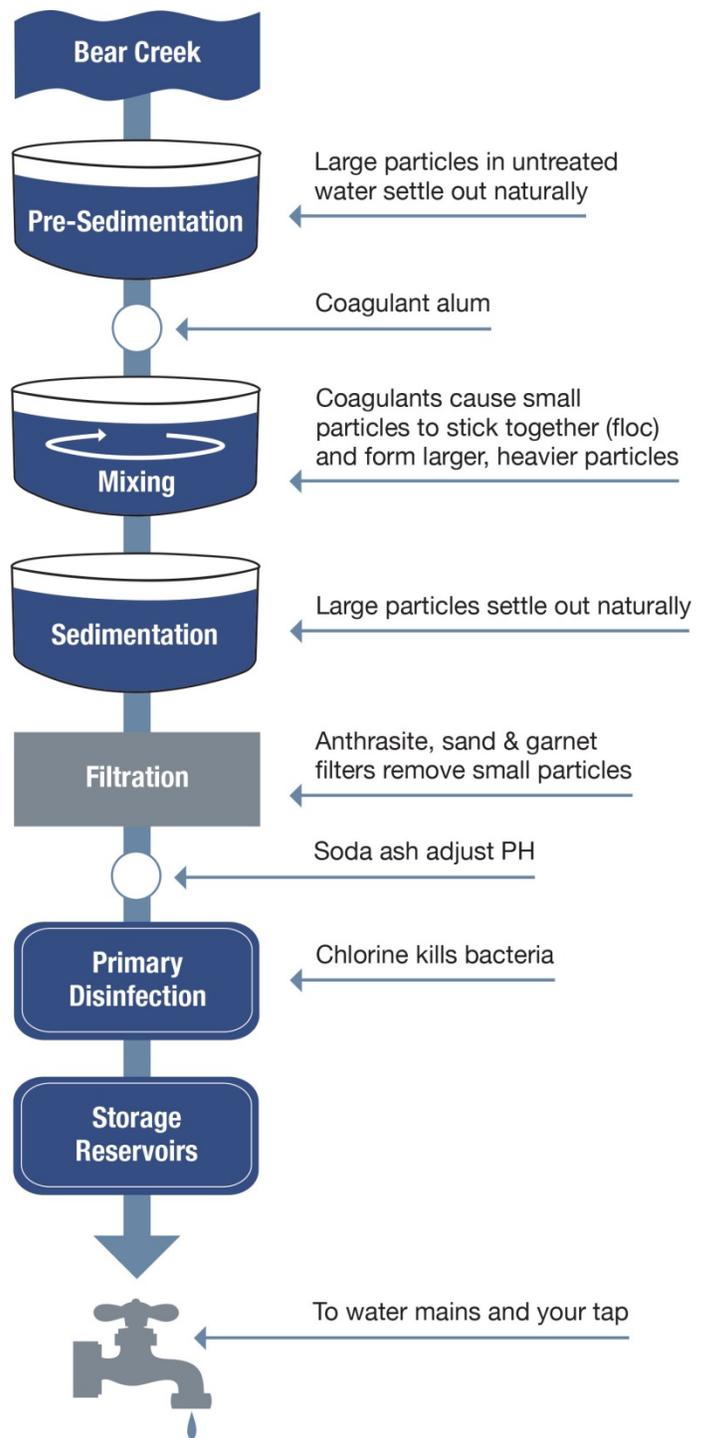
Carson Water System has two sources of water; surface water from Bear Creek and groundwater from the Industrial Site Well located north of Carson on Old State Road.

Your Bear Creek surface water is treated in a “treatment train” (a series of processes applied in a sequence) that includes coagulation, flocculation, sedimentation, filtration, and disinfection. Coagulation removes dirt and other particles suspended in the source water by adding chemicals (coagulants) to form tiny sticky particles called “floc,” which attract the dirt particles. Flocculation (the formation of larger flocs from smaller flocs) is achieved using gentle, constant mixing. The heavy particles settle naturally out of the water in a sedimentation basin. The clear water then moves to the filtration process where the water passes through anthracite, sand, and garnet that remove even smaller particles. A small amount of chlorine is used to kill bacteria and other microorganisms (viruses, cysts, etc.) that may be in the water before water is stored and distributed to homes and businesses in the community.

Your Industrial Site ground water is treated by disinfection. Disinfection involves the addition of chlorine to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

### UNDERWOOD

The Underwood system uses groundwater from Galligan Springs, Shaddox Springs, and Galligan Well located north of SR 14 at an elevation of 350 feet. The water is then pumped 925 feet to serve the community of Underwood. Like the Industrial Site, water treatment is provided by chlorination.



Source	Susceptibility Rating
Bear Creek (Carson)	High
Industrial Well (Carson)	Moderate
Galligan Springs (Underwood)	High
Galligan Well (Underwood)	Low
Shaddox Springs (Underwood)	High

## Source water assessment

Washington’s Source Water Assessment Plan (SWAP) is available at <http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/SourceWater/Assessment>. The susceptibility rating is an assessment of the delineated area around the listed water sources through which contaminants, if present, could migrate and reach our source water. By default, the DOH assigns a susceptibility rating of “high” for all springs and surface water sources.



## Substances expected to be in drinking water

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 Safe Drinking Water Hotline (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. The following substances may be present in source water (drinking water quality is determined by testing for these contaminants).

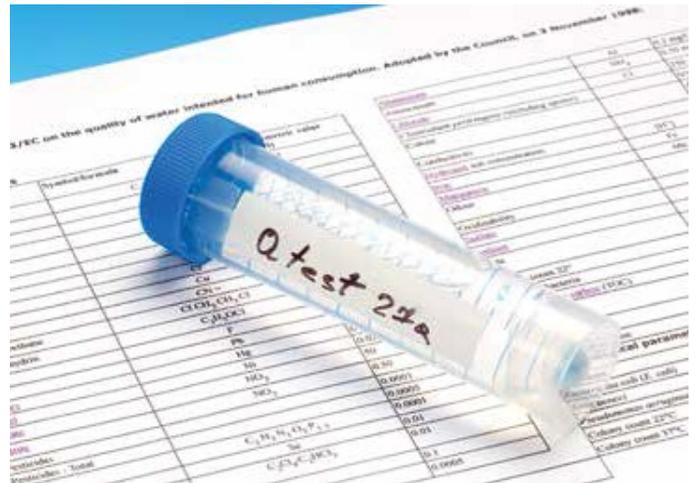
<p><b>MICROBIAL CONTAMINANTS</b> <i>such as viruses and bacteria</i></p>	<p>May come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.</p>
<p><b>INORGANIC CONTAMINANTS</b> <i>such as salts and metals</i></p>	<p>Can occur naturally or may result from urban stormwater runoff, industrial, or domestic wastewater discharges or farming.</p>
<p><b>PESTICIDES AND HERBICIDES</b></p>	<p>May come from a variety of sources such as farming, urban stormwater runoff, and homes or businesses.</p>
<p><b>ORGANIC CHEMICAL CONTAMINANTS</b> <i>including synthetic and volatile organic chemicals</i></p>	<p>By-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.</p>
<p><b>RADIOACTIVE CONTAMINANTS</b></p>	<p>Can be naturally occurring or the result of oil and gas production and mining activities.</p>

In order to ensure that tap water is safe to drink, EPA prescribes regulations that 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.

## Water quality data

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The Water Quality Table on the next page lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this

table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions.



### Abbreviation | Definition

ppm . . . . .parts per million, or milligrams per liter (mg/L)  
 ppb . . . . . parts per billion, or micrograms per liter (µg/L)  
 pCi/L . . . . . picocuries per liter (a measure of radioactivity)  
 ND . . . . .not detected

TERM	DEFINITION
<b>NTU</b>	<i>Nephelometric Turbidity Units.</i> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
<b>MCLG</b>	<i>Maximum Contaminant Level Goal:</i> 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.
<b>MCL</b>	<i>Maximum Contaminant Level:</i> 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.
<b>TT</b>	<i>Treatment Technique:</i> A required process intended to reduce the level of a contaminant in drinking water.
<b>MRDLG</b>	<i>Maximum Residual Disinfection Level Goal:</i> The level of a drinking water disinfectant below which there is no known or expected risk to health.
<b>MRDL</b>	<i>Maximum Residual Disinfectant Level:</i> The highest level of a disinfectant allowed in drinking water.
<b>MPL</b>	<i>State Assigned Maximum Permissible Level</i>

## Water Quality Table

Substance (Unit of Measure)	EPA Regulations		Carson Water System			Underwood Water System			Violation	Typical Source
	Ideal Goal (MCLG)	Highest Level Allowed (MCL)	Amount Detected	Range	Year Sampled	Amount Detected	Range	Year Sampled		
<b>Disinfectants &amp; Disinfectant By-Products</b>										
<i>(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)</i>										
Haloacetic Acids (HAA5) (ppb)	NA	60	7.1	2.1-7.1	2015	ND	NA	2015	No	By-product of drinking water chlorination
Chlorine (ppm)	MRDLG = 4	MRDL = 4	0.58	0.20-0.80	2015	0.52	0.20-0.80	2015	No	Measure of disinfectant added to water
TTHMs [Total Trihalomethanes] (ppb)	NA	80	14.2	5.78-14.22	2015	ND	NA	2015	No	By-product of drinking water disinfection
<b>Inorganic Contaminants</b>										
Arsenic (ppb)	0	10	ND	NA	2011	ND	NA	2011	No	Erosion of natural deposits; Runoff from orchards
Sodium (ppm)	NA	NA	5.64 (one sample)	NA	2011	4.61 (one sample)	NA	2011	No	Erosion of natural deposits; Leaching
Nitrate (ppm)	10	10	ND	NA	2015	1.5	0.0-1.5	2015	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.09 (one sample)	NA	2011	0.09 (one sample)	NA	2011	No	Erosion of natural deposits; Discharge from fertilizer
<b>Microbiological Contaminants</b>										
Turbidity (NTU)	NA	0.3	0.14	0.02-0.14	2015	NA	NA	NA	No	Soil runoff
<i>(Turbidity is only sampled for surface water sources. 100% of the samples were below the MCL value of 0.3. A value less than 95% constitutes a Treatment Technique (TT) violation. Any measurement in excess of 1 is a violation unless otherwise approved by the state.)</i>										
Total Coliform (positive samples/month)	0	0	1*	NA	2015	0	NA	2015	No	Naturally present in the environment
Fecal coliform/E. coli - in the distribution system (positive samples)	0	0	0	NA	2015	0	NA	2015	No	Human and animal fecal waste
<i>(*A violation occurs when a routine sample and a repeat sample, in any given month, are total coliform positive, and one is also fecal coliform or E. coli positive.)</i>										
<b>Radioactive Contaminants</b>										
Gross Alpha (pCi/L)	0	15	0.0	NA	2015	0.5	NA	2011	No	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	0.0	NA	2015	0.6	NA	2011	No	Erosion of natural deposits



Installation of a new water main | Carson, WA

## Lead in drinking water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Carson and Underwood Water Systems have never used lead service lines. Homes built before 1987 are more likely to have lead plumbing. Some faucets and certain kinds of solder could also have lead in them, even those installed recently. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

## Lead and Copper Monitoring Results

Substance (Unit of Measure)	Ideal Goal (MCLG)	Action Level	Carson (2015)			Underwood (2015)			Typical Source
			90th %	Sites Above AL / Total Sites	Violation	90th %	Sites Above AL / Total Sites	Violation	
Lead - at consumer taps (ppm)	0	0.015	<0.0010	0/10	No	0.0042	0/10	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper - at consumer taps (ppm)	1.3	1.3	0.310	0/10	No	0.150	0/10	No	Corrosion of household plumbing systems; Erosion of natural deposits

EPA and state regulations require Skamania PUD and the systems it supplies to monitor for the presence of lead and copper at household taps in their service area every 3 years. The next round of required sampling will be conducted in 2017. The 90th % level means that out of every 10 homes sampled, 9 were at or below this level.

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 you are provided, but your household plumbing may contribute to the presence of lead and copper at your tap.

## Water Use Efficiency

In 2003 the State Legislature passed the Municipal Water Law, which directed the Department of Health (DOH) to adopt a rule that establishes Water Use Efficiency (WUE) requirements for all municipal water suppliers. There were several components in the requirements of the rule. These requirements included auditing for leakage, setting WUE goals, and submitting annual reports to the State DOH.

The Skamania PUD set goals to reduce the average residential water usage by 2% over a 6 year period and reducing the peak day demand by 12 gallons per day (GPD). These goals focus on customer water use and water savings. All users are encouraged to conserve water in their daily lives.

### How do you protect and conserve water?

- Check for leaks in sprinklers, hoses, pipes and couplings. Repair leaks promptly.
- Water your lawn deeply and frequently. Generally, one inch of water a week is all your lawn needs.
- Aerate and de-thatch your lawn if water won't penetrate the soil.
- Cut it high and let it lie. Longer grass has deeper roots and better access to soil moisture (2" - 3" tall is ideal). Leaving grass clippings on the lawn is a source of nutrients and helps retain soil moisture.
- Use a shut-off nozzle on your hose for outdoor use. Park the car on the lawn while you wash to water your grass at the same time.
- Water your lawn only before 10 a.m. or after 7 p.m. when it is cooler and water is less likely to evaporate.
- Adjust sprinklers to water only what grows. Watering driveways and sidewalks is a waste.
- Think twice about fertilizing. Fertilizers force plant growth and increase the amount of water a plant needs. Only use organic or slow-release fertilizers.

## Ways we're working toward using our water efficiently

The distribution water mains in Carson and Underwood are aging, and leaks are the primary cause of unaccounted use. Last year we conducted our annual leak detection efforts in Underwood to help identify underground leaks that are not visible from the surface. This effort resulted in the identification and repair of 7 leaks in Underwood. Leak detection and repair in Carson is scheduled for July 2016. The DOH goal for unaccounted use of water is 10% or below in Carson and 20% or below in Underwood based on a three year rolling average. The current three year rolling average for unaccounted use is 31.7% in Carson and 27.4% in Underwood.

## Water System Improvements

Skamania PUD is always working to maintain and improve the Carson and Underwood Water Systems. The following is a list of just a few of the projects we have been working on this past year.

- New Carson Reservoir – Skamania PUD will be constructing a new 400,000 gallon reservoir in the Carson Water System to improve water reliability, provide added water storage and additional fire protection for the community south of the High Bridge. Construction is anticipated to start in late-summer 2016.
- Carson Test Well – Skamania PUD was awarded an \$116,600 grant from the Department of Ecology to drill and test a new test well for the Carson water system. The project will be completed by 2017.
- Carson Transmission Main Repair – The transmission main leading from the Bear Creek source was repaired and reinforced in 2015.
- School House PRV Replacement – Skamania PUD will be replacing and consolidating two existing pressure reducing valve (PRV) stations built in the 1950s with a single PRV station located at the intersection of Cook-Underwood Road and Overlook Road. The PRV station is needed to reduce the high water pressures in the distribution main to the lower water pressures needed at our customers' homes. Construction of the PRV station will occur in the summer of 2016.
- Shepard Pump Station and Reservoir – The Shepard Reservoir and Pump Station Project will construct a new water storage reservoir and new pump station to replace the existing, aging facilities that were constructed in the 1950s. The project will also increase capacity and reliability for the Underwood Water System as well as improve the water system's disinfection facilities and communication capabilities. The project is currently in the design and permitting phase with construction expected in 2017.

## pH

The pH levels typically range from 6.8 to 7.5 in Carson and 7.3 to 8.0 in Underwood.

## Water hardness

The Carson Water System water is considered soft with readings ranging between 25 and 40 ppm on the hardness scale. Underwood water is considered moderately hard with readings ranging between 60 and 80 ppm.

Hardness (ppm)	
0-60	Soft
61-120	Moderately Hard
121-180	Hard
181-up	Very Hard

## Does my drinking water contain chlorine?

Yes. Skamania PUD's water contains a trace amount of chlorine residual added as a precaution against potential contaminants that might somehow enter the system. To reduce chlorine taste or smell, use a filter or fill a pitcher with water and let it sit for awhile. The chlorine will react with the air and evaporate from the water.

## Why is sodium included on the list?

Sodium has been included on the list by EPA to provide an opportunity for more study. While high levels of salt intake may be associated with hypertension in some individuals, sodium levels in drinking water are usually low and unlikely to be a significant contribution to adverse health effects, according to the EPA. The EPA has established a recommended level of twenty parts per million for sodium as a level of concern for those consumers that may be restricted for daily sodium intake in their diets. The EPA is considering updating the guidance level for sodium and says the current one is probably low. FDA imposes quality standards for bottled water that are equivalent to EPA's drinking water standards so switching to bottled water won't solve the sodium question if that is a concern for you. Instead, EPA recommends talking with your doctor or a dietician about reducing sodium in food intake.

## Does my drinking water contain fluoride?

The Skamania PUD does not add fluoride to the Carson or Underwood drinking water. Some fluoride compounds, such as sodium fluoride and fluorosilicates, dissolve easily into ground water as it moves through gaps and pore spaces between rocks. Most water supplies contain some naturally occurring fluoride. Fluoride can also enter drinking water in discharge from fertilizer or aluminum factories.

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## Customer views welcome

There are several ways you can get involved in water quality issues. You can communicate with elected officials, participate in public hearings and attend Skamania PUD Commission meetings. Check the local newspaper for information on public meetings regarding water quality, water policies and other issues, or call us at 509-427-5126.

The Skamania PUD Board of Commissioners meets at 9:00 am on the first and third Monday of each month at Skamania PUD, 1492 Wind River Road in Carson. Board sessions are open to the public. Please check the meeting agenda on our website: [www.skamaniapud.com](http://www.skamaniapud.com).

*For more information please contact:*

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