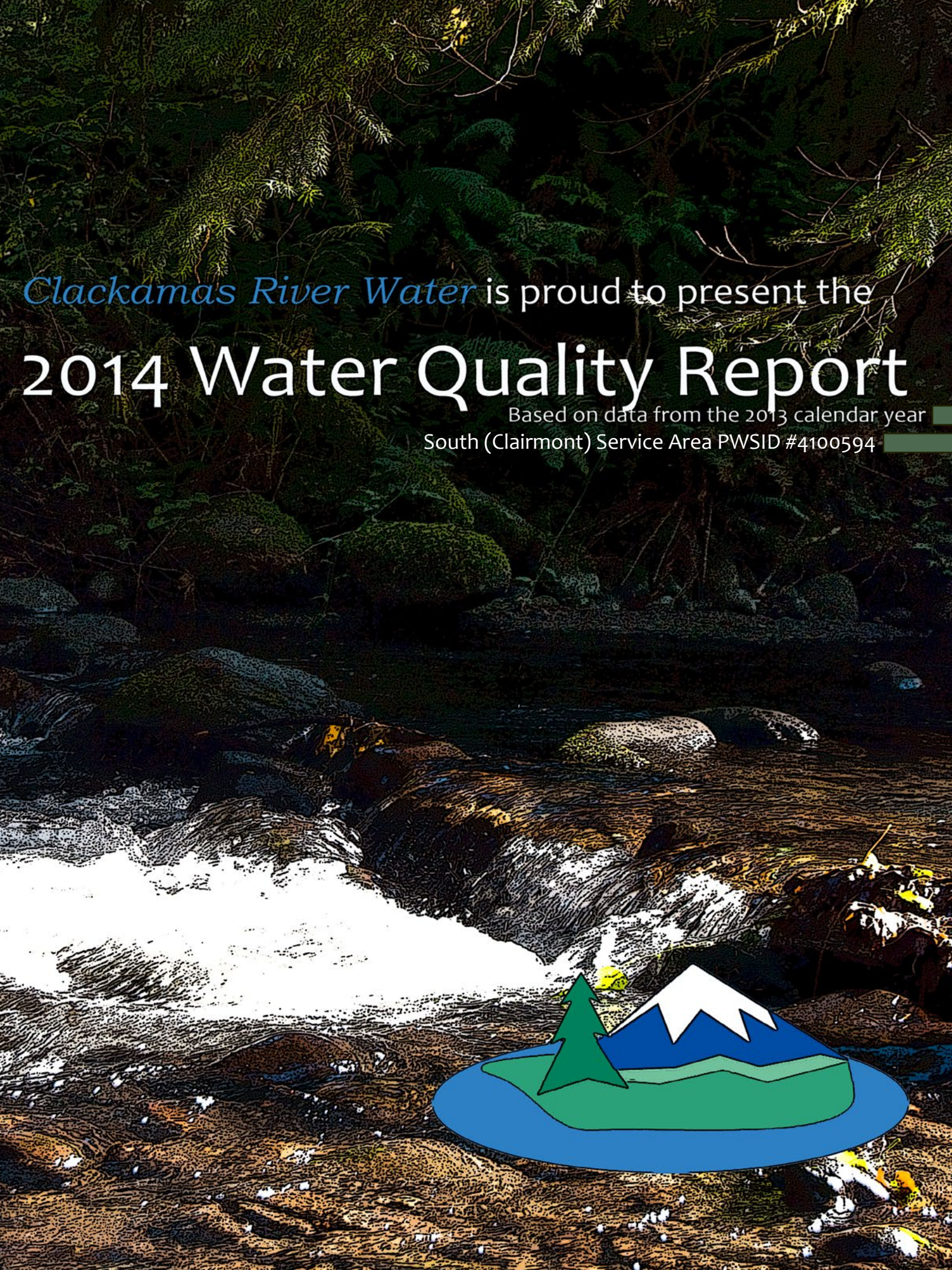
Clackamas River Water is proud to present the

2014 Water Quality Report

Based on data from the 2013 calendar year

South (Clairmont) Service Area PWSID #4100594



Welcome

Clackamas River Water (CRW) is pleased to welcome you to our 2014 Water Quality Report. The report provides you with an easy to follow overview of our water. We hope that you will take a minute to review this report and learn more about your drinking water.

CELEBRATING 50 YEARS

We're turning 50! CRW is celebrating 50 years of providing high quality, safe drinking water for our customers.

Which service area am I in?

Clackamas River Water has two service areas.

If your home or business is north of the Clackamas River you are in our North (Clackamas) Service Area. This service area encompasses parts of unincorporated Clackamas County, Milwaukee, Clackamas, and Portland. Customers in the North Service Area receive water that is treated by Clackamas River Water's water treatment plant.

If your home or business is south of the Clackamas River you are in our South (Clairmont) Service Area. This service area encompasses parts of unincorporated Clackamas County and Oregon City. Customers in the South Service Area receive water that is treated by South Fork Water Board but serviced by Clackamas River Water.

This report covers water quality for the South (Clairmont) Service Area.

North (Clackamas) Service Area

South (Clairmont) Service Area

Our Source

The Clackamas River begins at an elevation of 4,909 feet on the western slopes of the Cascade Range in the Mt. Hood National Forest. Forty seven miles of the river are federally protected as part of the National Wild and Scenic Rivers System.

The Clackamas River Watershed drains nearly 940 square miles of forests, mountain meadows, agricultural land, suburban neighborhoods, and light industrial areas before meeting with the Willamette River. More than 300,000 Oregonians rely on the Clackamas River for high quality drinking water, hydroelectric power, and outdoor recreation.

CRW is committed to maintaining and protecting the Clackamas River and maintains a vigorous watershed management and monitoring program. CRW also participates as a member of the Clackamas River Water Providers (CRWP), a coalition of drinking water providers committed to promoting the health and sustainability of the Clackamas River Watershed by identifying, mitigating, and preventing ecosystem degradation to ensure the delivery of high quality drinking water to the community. For more information about the CRWP visit the CRWP Website by **clicking here**.

Source Water Assessment

A source water assessment of the Clackamas River Basin was completed in 2003 by the Oregon Department of Environmental Quality (DEQ) and reported under the requirements and guidelines of the Federal Safe Drinking Water Act. The assessment identifies potential sources of contamination within the watershed allowing water providers, businesses, and individuals in the Clackamas River Basin to begin developing strategies to protect the source of their drinking water. **Click here to view a summary of the assessment**.

Did you know that the Clackamas River is the only source of water for thousands of residents in Clackamas County?

A healthy watershed equals a clean river, lowering the cost of drinking water treatment and providing you with a pure, simple product. Clackamas River Water takes watershed protection seriously. Read on to learn more about what we're doing to make sure your water is clean, safe, and reliable.

PROTECTING OUR MOST PRECIOUS RESOURCE- WATER

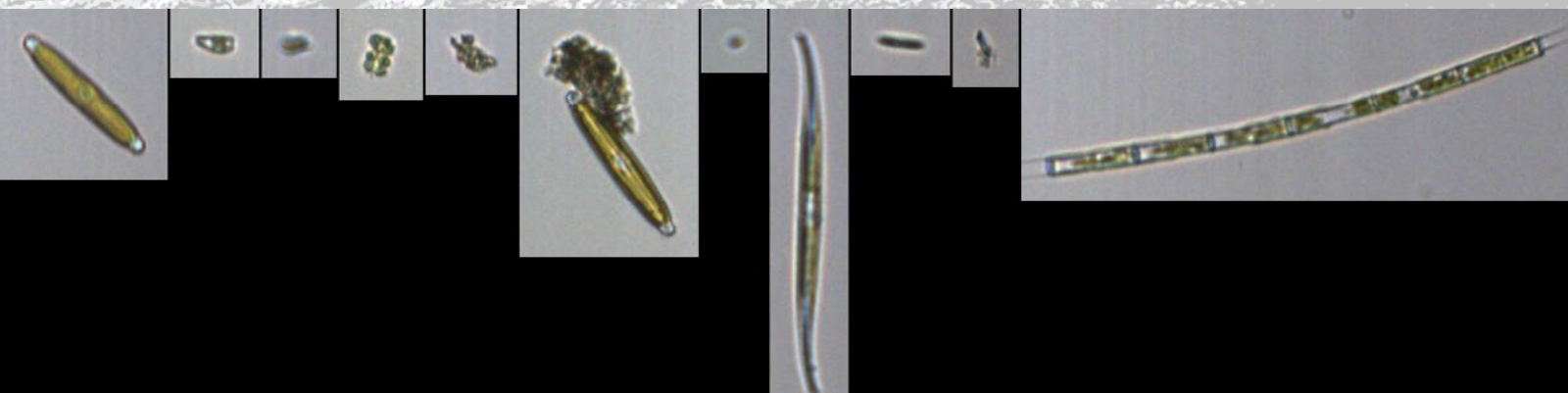
Microbial Source Tracking

CRW has teamed up with the CRWP and Clackamas Community College (CCC) to investigate sources of microbial pollution in the Clackamas River Watershed. CRW staff will be training CCC Water Environment Technology students in molecular microbial source tracking, matching fecal DNA to its source (human, cow, horse, etc.). Think of it as microbial forensics! This project will help CRW and CRWP target areas in the watershed for mitigation with the ultimate goal of reducing *E. coli* pollution in the river. This project is funded by a DEQ 319 Grant for non-point source pollution and is scheduled to run through 2015.

A CCC Intern collects microbial source tracking samples

Algae Monitoring

What's causing that late summer taste and odor event? Do upstream blue-green algae blooms reach our drinking water intakes? We're checking it out! In September 2013 CRW purchased a FlowCAM, which is a combination flow cytometer (cell counter), microscope, and camera. Water Quality staff is now tracking and monitoring algal species in an effort to understand seasonal fluctuations in algal communities that can affect the taste and smell of your water. It also gives CRW the ability to rapidly detect toxin producing and invasive species before they become a problem.



Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice from health care providers. Environmental Protection Agency (EPA) and Center for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791 or online at http://water.epa.gov/drink/hotline.

To ensure that tap water is safe to drink the US EPA prescribes regulations limiting 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.

The sources of drinking water contamination (for both tap 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.

According to the EPA, drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses any health risk.

Substances that may be in Drinking Water

Microbial contaminants include viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic contaminants include salts and metals, which can be naturally-occurring or result from urban storm-water runoff, industrial or domestic waste discharges, oil and gas productions, mining, or farming.

Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm-water run-off, and residential use.

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

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

Definitions

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 MCLGs as feasible using the best available treatment technology.

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.

Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants.

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

Turbidity: A measure of cloudiness caused by suspended particles in the water.

Nephlometric Turbidity Unity (NTU): A measurement of water turbidity.

Parts per million (ppm): One part of a substance in one million parts of water.

Parts per billion (ppb): One part of a substance in one billion parts of water.

Water Quality Results for 2013- CRW South (Clairmont) Service Area, PWSID #4100594

Substance (units)	Goal (MCLG)*	Highest Level Allowed (MCL)*	Highest Level Detected	Range Low - High	Source of Substance	Violation ?
Regulated at the Treatment Plant						
Turbidity * (Turbidity Units)	Not Applicable	0.3 Treatment Technique *	0.22	0.02 - 0.22	Soil runoff	No
Regulated in the Distribution System						
Total Coliform (positive samples/month)	0	5% positive samples per month	2%	0 - 2%	Naturally present in the environment	No
Total Trihalomethanes (ppb) *	Not Applicable	80	45.0 (Average Result)	25.9 - 66.2	By-product of drinking water disinfection.	No
Haloacetic Acids (ppb)*	Not Applicable	60	32.0 (Average Result)	24.2 - 42.8	By-product of drinking water disinfection.	No
Nitrate (ppm)*	10	10	0.7	NA	Runoff from fertilizer use; Leaching from septic tanks; sewage; Erosion of natural deposits	No
Chlorine (ppm)*	MRDLG*=4	MRDL*=4	1.12	0.14 - 1.12	Water additive used to control bacteria.	No
Unregulated contaminants						
Sodium (ppm)*	NA	NA	7.1	NA	Natural deposits and soda ash	NA

Footnotes and Explanations

*Indicated that the term is defined in the "Definitions" section.
+Last sampled 10/30/2012
NA: Not Applicable
ND: None Detected
The data presented are from the most recent testing done in accordance with regulations.

Third Unregulated Contaminant Monitoring Rule (UCMR3)

What is UCMR3?

Under the 1996 amendments to the federal Safe Drinking Water Act, the U.S. Environmental Protection Agency is required once every five years to issue a new list of up to 30 unregulated contaminants for which public water systems must monitor. The intent of this rule is to provide baseline occurrence data that the EPA can combine with toxicological research to make decisions about potential future drinking water regulations. We are currently going through the third round of this contaminant testing.

The Third Unregulated Contaminant Monitoring Rule was signed by former EPA Administrator Lisa P. Jackson on April 16, 2012. The EPA, the states, laboratories and public water systems are all participating in the testing for UCMR3 in various ways. The testing occurs between January 2013 and December 2015.

Learn more at: http://www.drinktap.org/home/water-information/water-quality/ucmr3

The contaminants being monitored being monitered by CRW under UCMR3 include:

Seven Volatile Organic Compounds

- trichloropropane
- butadiene
- chloromethane (methyl chloride)
- dichloroethane
- bromomethane (methyl bromide)
- chlorodifluoromethane (HCFC-22
- bromochloromethane (halon 1011)

One Synthetic Organic Compound

- dioxane

Six Metals

- vanadium
- molybdenum
- cobalt
- strontium
- chromium
- chromium 6 (hexavalent chromium)

Six Perfluorinated Compounds

- perfluorooctanesulfonic acid (PFOS)
- perfluorooctanoic acid (PFOA)
- perfluorononanoic acid (PFNA)
- perfluorohexanesulfonic acid (PFHxS)
- perfluoroheptanoic acid (PFHpA)
- perfluorobutanesulfonic acid (PFBS)

One Oxyhalide Anion

- chlorate

Out of the chemicals tested for only 5 metals and chlorate were detected. All were at levels below the EPA current reference concentrations..

Substance (units)	Level Detected	Source of Substance
Tested for at the Entry Point to the Distribution System		
Chromium (ppb)	0.27	Naturally present in the environment
Strontium (ppb)	35.6	Naturally present in the environment
Vanadium (ppb)	0.26	Mineral and fossil fuel deposits
Chromium 6 (ppb)	0.23	One of the chemical forms of chromium
Chlorate (ppb)	61.0	By-product of the drinking water disinfection process
Tested for in Distribution System		
Chromium (ppb)	0.25	Naturally present in the environment
Strontium (ppb)	38.4	Naturally present in the environment
Vanadium (ppb)	2.0	Mineral and fossil fuel deposits
Chromium 6 (ppb)	0.27	One of the chemical forms of chromium
Chlorate (ppb)	54.0	By-product of the drinking water disinfection process

THE FOLLOWING SUBSTANCES WERE TESTED FOR BUT NOT DETECTED IN CRW'S DRINKING WATER:

Inorganic Chemicals

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Copper
Iron
Lead
Manganese
Mercury
Nickel
Selenium
Silver
Thallium
Zinc

Synthetic Organic Compounds

2 4 5 TP
2 4 D
Alachlor
Atrazine
Benzo a pyrene
Bis 2 ethylhexyl adipate
Bis 2 ethylhexyl phthalate
Carbofuran
Chlordane
Dalapon
Dibromochloropropane
Dinoseb
Diquat
Endothall
Endrin
Ethylene dibromide
Glyphosate
Hepatchlor
Heptahlor Epoxide
Hexachlorobenzene
Hexachlorocylcopentadiene
Lindane
Methoxychlor
Oxamyl
Pentachlorophenol
Picloram
Polychlorinated biphenyls
Simazine
Toxaphene

Volatile Organic Compounds

1 1 1 Trichloroethane
1 1 2 Trichloroethane
1 1 Dichloroethylene
1 2 4 Trichlorobenzene
1 2 Dichloroethane
1 2 Dichloropropane
Benzene
Bromoform
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
cis 1 2 Dichloroethylene
Ethylbenzene
Methylene chloride
O Dichlorobenzene
P Dichlorobenzene
Styrene
T 1 2 Dichloroethylene
Tetrachloroethylene
Toluene
Trichloroethylene
Vinyl chloride
Xylenes

Unregulated Synthetic Organic Compounds

3 Hydroxycarbofuran
Aldicarb
Aldicarb sulfone
Aldicarb sulfoxide
Aldrin
Baygon
Butachlor
Carbaryl
Dicamba
Dieldrin
Methiocarb
Methomyl
Metolachlor
Metribuzin
Propachlor

Unregulated Volatile Organic Compounds

1 1 1 2 Tetrachloroethane
1 1 2 2 Tetrachloroethane
1 1 Dichloroethane
1 1 Dichloropropene
1 2 3 Trichlorobenzene
1 2 4 Trimethylbenzene
1 3 5 Trimethylbenzene
1 3 Dichloropropane
2 2 Dichloropropane
Bromobenzene
Bromochloromethane
Bromomethane
Chloroethane
Chloromethane
cis 1 3 Dichloropropene
Dibromomethane
Dichlorodifluoromethane
Hexachlorobutadiene
Isopropylbenzene
m Dichlorobenzene
Methyl tert butyl ether
n Butylbenzene
n Propylbenzene
Napthalene
o Chlorotoluene
p Chlorotoluene
p Isopropyltoluene
sec Butylbenzene
tert Butylbenzene
trans 1 3 Dichloropropene
Trichlorofluoromethane

Cryptosporidium and Giardia are microscopic parasites that can cause gastrointestinal illness if untreated water is consumed. Clackamas River Water uses filtrations and chlorine to control these organisms and conducts routine monitoring to ensure our control practices are effective.

In 2013 Cryptosporidium and Giardia were NOT detected in the finished drinking water.

OUR DATA IS NOW ONLINE.

CHECK IT OUT!

LEAD IN DRINKING WATER

Clackamas River Water does not detect measurable levels of lead in our source water and has no lead service connections. The main sources of lead contamination in drinking water are from components associated with your home plumbing system. These include lead solder used to join copper pipes and brass or chrome plated plumbing fixtures.

Elevated levels of lead are most likely to be found in homes built prior to 1985 when lead-based solder was still being used in home construction. If your home contains lead-based solder you are considered a "high risk" home for lead exposure through drinking water.

Lead can cause serious health problems if too much enters your body from drinking water. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of the body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Water Testing

Routinely 30 to 60 homes known to contain lead plumbing components are monitored in the CRW's service areas. These houses represent a worst-case scenario for lead in water. Samples are collected after the water has been standing in the household plumbing for more than 6 hours.

A Lead and Copper Rule exceedance for lead occurs when more than 10 percent of these homes exceed the lead action level of 15 parts per billion. In the most recent round of testing conducted by Clackamas River Water 3 out of 60 homes (5%) exceeded the lead action level.

Corrosion Treatment

Clackamas River Water's corrosion control treatment focused on switching from a blend of well water and surface water to pure surface water. Monitoring results have shown this adjustment to be effective in reducing lead exposure in drinking water.

Lead and Copper Sampling Results

Substance (units)	Goal (MCLG)*	Highest Level Allowed (MCL)*	Highest Level Detected	Range Low - High	Source of Substance	Violation ?	Number of Homes Over AL
Copper (ppm)*	1.3	1.3 Action Level *	0.09 at the 90th percentile	ND - 0.17	Corrosion of household plumbing systems.	No	0 of 60 homes over AL
Lead (ppb) *	0	15 Action Level *	8 at the 90th percentile	ND - 95	Corrosion of household plumbing systems.	No	3 of 60 homes over AL

Tips to reduce possible lead exposure in drinking water

- Run the cold water tap for 30 seconds to two minutes before using it for drinking or cooking. The longer water resides in your home's plumbing, the more lead it may contain.
- Use only cold water for preparing baby formula, cooking and drinking. More lead dissolves in hot water than cold.
- Do not cook with or drink water from the hot water tap. If you need hot water, draw water from the cold tap and heat if for cooking.
- Periodically remove loose debris from the faucet screens at all the taps used for drinking water.
- Identify and replace lead solder with a solder approved for use in drinking water. Lead solder looks dull gray, and when scratched with a key looks shiny.
- Have a licensed electrician check the wiring to see if grounding wires from your homes electrical system are attached to your pipes. Do not attempt to change the wiring yourself.
- In-line water filtration systems fitted with a carbon-type filter may greatly improve the removal of lead. Be sure to change your filter according to the manufacturer's recommendations.

For more information visit: http://water.epa.gov/drink/info/lead/

CONSERVATION TIPS AND RESOURCES

We think of the Pacific Northwest as a place with an abundance of water. With an average rainfall about 37 inches per year it's hard to think otherwise! As our demand for water grows over the next few decades long-term water supply issues and the environmental and political factors that impact them will become increasingly more important to us. Your actions today can help us prepare for the future! Here are some simple and cost effective changes that you can make to reduce your household's water consumption, while at the same time, saving you money, time, and energy.

LEAK DETECTION & REPAIR

Leaks can waste hundreds of gallons of water per month! Develop a leak detection strategy to help lower your property's water/sewer bills and help conserve water.

Two potentially low cost, simple repair examples:

- Toilets are one of the most likely places to find a leak. They are often easy to detect and repair. Annually test your toilets for leaks by using dye tablets or food coloring. Many toilet leaks can be fixed by a do-it-yourself plumber, and repair parts are relatively inexpensive to purchase ($5-20).
- Leaky faucets are often caused by faulty washers that don't allow your faucet to shut off completely. Replacing faulty washers is an easy and inexpensive (less than $1) way to save water and money.

Source: The Regional Water Providers Consortium

Does your lawn have a drinking problem?

- Adjust your sprinklers so that they're watering your lawn and garden, and not the street or sidewalk.
- Water early in the morning (before 10a.m) or later in the evening (after 6 p.m.) when temperatures are cooler and evaporation is minimized.
- Set it, but don't forget it! Whether you have a manual or automatic system, be sure to adjust your watering schedules throughout the irrigation season.
- Water established lawns about 1 inch per week (a bit more during hot, dry weather). Find out how much to water this week with the Weekly Watering Number.
- Inspect your overall irrigation system for leaks, broken lines or blockage in the lines. A well maintained system will save you money, water, and time.

Clackamas River Water is a proud member of the Regional Water Providers Consortium

COMMUNITY PARTICIPATION

The Clackamas River Water Board of Commissioners encourages you to participate in decisions that may affect the quality of your drinking water. You can present your comments through the CRW website at www.crwater.com or come in person to the monthly meetings of the Board of Commissioners. Meetings are held on the second Thursday of each month at 6:00 PM at 16770 SE 82nd Drive in Clackamas, Oregon. All meetings are announced to the public in accordance with public meetings law.

For information on upcoming meetings visit: http://www.crwater.com/public-meeting-notices

Drinking water regulations require CRW to provide this information to customers each year — it's the law. Most of the language is required by the EPA to make sure that our ratepayers know what is in their drinking water. CRW has tried to make this complex information readable and produce this report at a low cost. The report was designed in-house by CRW staff. By switching to an online format of delivery CRW saved our ratepayers over $2000.

For a print copy, or if you have any questions about this report, contact Dr. Suzanne DeLorenzo at 503-722-9241 or sdelorenzo@crwater.com.

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