



OREGON CITY 2018 water quality REPORT

welcome...

We are pleased to provide you with Oregon City's 2018 Annual Water Quality Report. Our drinking water continues to meet, or surpass, all state and federal standards and regulations.

Based on findings from data collected in 2017.

OREGON CITY is committed to:

- Protecting public health – providing clean, safe drinking water that complies with all state and federal regulations.
- Protecting public safety – ensuring reliable, plentiful water for fire suppression.
- Protecting the environment – providing a safe and reliable stormwater system and implementing watershed protection and restoration actions that consistently promote surface water quality and stream health.

The source of Oregon City's drinking water is the Clackamas River.



Water from the Clackamas River is made safe to drink by conventional treatment at the South Fork Water Board (SFWB) Treatment Plant, located in the Park Place area of Oregon City. The basic steps to the treatment process are:

- **Coagulation** – adding chemicals (alum and polymers) to the water that causes very small suspended particles to attract one another and form larger particles.
- **Flocculation** – gently stirring the water to bring the suspended particles together so they will form larger clumps, called floc.
- **Sedimentation** – the velocity of the water is reduced allowing gravity to settle out the floc.
- **Filtration** – any remaining particles not settled out earlier are removed as the water flows through filters made up of sand and anthracite coal.
- **Corrosion Control** – adding soda ash in order to increase the pH of the water,

making it less likely to deteriorate piping material and plumbing fixtures.

- **Disinfection** – adding sodium hypochlorite (a liquid form of chlorine that is similar to household bleach) to kill any disease-causing organisms in the water. It is important to have a small amount of chlorine remain in the water as it travels throughout the distribution system. This is called a chlorine residual.

SFWB, and by extension, Oregon City, is a member of the Regional Water Providers Consortium which is a collaborative and coordinating organization that works to improve the planning and management of municipal water supplies in the greater Portland metropolitan region. Find out more about the Consortium, its members, and its work in emergency preparedness, water conservation, and regional coordination at www.regionalh2o.org. Learn more about SFWB by visiting their website at www.sfwb.org.



Protecting Our Drinking Water Source

The Clackamas River watershed begins on the slopes of Olallie Butte near Mount Hood, and flows nearly 83 miles from its headwaters (elevation 6,000 feet) to its confluence with the Willamette River near Clackamette Park (elevation 12 feet); it encompasses 940 square miles.

Unlike the City of Portland's Bull Run watershed, the Clackamas River watershed is completely unprotected. The watershed crosses two counties and includes federal, state and private lands. It is 72% publicly owned, 25% privately owned and 3% tribally owned.

A source water assessment was completed in late 2002. The delineated drinking water protection area is occupied by a wide variety of land uses: residential/municipal, agricultural/forest, and commercial/industrial. A total of 1,127 potential contaminant sources were identified within this area that could, if improperly managed or released, impact the water quality in the watershed. To learn about contamination risks to our drinking water source go to the Source Water Assessment Report (April 15, 2003) at: <https://www.orcity.org/publicworks/source-water-assessment-report>

In 2010, the Clackamas River Water Providers (CRWP) completed a Drinking Water Protection Plan for the Clackamas River. The purpose of this plan is to provide a road map of potential strategies and programs to implement over the next decade, and beyond, to preserve the Clackamas River as a high quality drinking water source. You can read the plan and learn more about the CRWP by going to www.clackamasproviders.org.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (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.

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.

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 stormwater 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 can 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.



Henrici Reservoir (capacity 2 million gallons) is one of five reservoirs that store water for Oregon City drinking water customers.

Important Message From the EPA

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 at **1.800.426.4791**.

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. EPA/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**.

Lead & 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. South Fork Water Board and Oregon City are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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 2 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 www.epa.gov/safewater/lead.

The main source of lead in drinking water is typically from household plumbing. This is usually lead solder that was used in homes built or plumbed with copper pipes before 1985. Lead was banned for use in household plumbing construction in 1985. Lead can also be found in brass plumbing fixtures and components. Oregon City has no lead water service lines in the distribution system.

No lead is detected in Oregon City's drinking water as it leaves the treatment plant. South Fork's corrosion control strategy increases the pH of the water, making it less likely to deteriorate piping materials and plumbing fixtures. Oregon City is in compliance with all state and federal standards for both lead and copper.

What can you do to reduce your exposure to lead from drinking water?



For more
information
please

**CLICK
HERE**

- **Run the cold water faucet to flush out lead.** If water has not been used for several hours, run the cold water for 30 seconds to 2 minutes, or until it becomes cold or reaches a steady temperature, before using it for drinking or cooking.
- **Use only cold water for cooking, drinking, and preparing baby formula.** Do not use water from the hot tap to cook, drink, or make baby formula. Lead dissolves more easily into hot water.
- **Do not boil water to remove lead.** Boiling water will not reduce lead levels.
- **Consider using a filter.** Confirm the filter is approved to reduce lead. Always maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality. Contact NSF International at **1.800.673.8010** or www.nsf.org for information on performance standards for water filters.
- **Consider buying low-lead fixtures.** As of January 4, 2014 all pipes, fittings, and fixtures are required to contain less than 0.25% lead. When buying new fixtures, consumers should seek out those with the lowest lead content. Visit www.nsf.org to learn more about lead content in plumbing fixtures.
- **Regularly clean your faucet aerator.** Particles containing lead from solder or household plumbing can become trapped in your faucet aerator. Regular cleaning every few months will remove these particles and reduce your exposure to lead.

Frequently Asked Questions

I can taste and smell chlorine in the water. Why?

You may be sensitive to the taste and smell of the disinfectant. The amount of sodium hypochlorite varies throughout the distribution system, but it generally measures less than 1 part per million (ppm). This is well below the maximum residual disinfectant level, set by EPA, of 4 ppm.

Here are some suggestions for minimizing the taste and odor of chlorine:

- Fill a glass container with water and set it aside. Within an hour the chlorine will evaporate. Then cover the container and store it in the refrigerator.
- Mix the water in a blender. This will speed up the dissipation of the chlorine residual.
- Add one or two teaspoons of lemon juice to the water, then refrigerate.

About My Drinking Water

Remember that if you plan to store drinking water after the chlorine residual has been removed, treat the water as you would a perishable food. Store it in clean, airtight containers and refrigerate.

Is there fluoride in Oregon City's drinking water?

No fluoride is added to Oregon City's drinking water. Naturally-occurring fluoride in the Clackamas River is generally less than 0.10 ppm (the detection limit for fluoride analysis). Check with your dentist to see if supplemental fluoride is recommended for your family.



Find more questions and answers at:
www.orcity.org/publicworks/drinking-water-faqs

2017 monitoring RESULTS

Substance/Contaminant (Unit of Measure)	MCL (MRDL)	MCLG (MRDLG)	Oregon City Measurement or Average (Range)	Sample Date	Major Sources in Drinking Water	Violation?
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DISINFECTANT RESIDUAL, DISINFECTION BY-PRODUCTS, AND BY-PRODUCT PRECURSORS

Chlorine (ppm)	(4)	(4)	0.90 (0.22 - 1.40)	2017	Water additive used to control microbes	No
Haloacetic Acids (ppb)	60	N/A	40.1* (26.2 - 52.6)	2017	By-product of disinfection with chlorine, combined with organic matter	No
Total Trihalomethanes (ppb)	80	N/A	40.4* (25.0 - 47.9)			
Total Organic Carbon** Raw Water (ppm)	TT	-	0.67 (ND- 1.03)	2017	Naturally present in the environment	No
Total Organic Carbon** Finish Water (ppm)	TT	-	0.10 (ND - 0.62)			

MICROBIOLOGICAL CONTAMINANTS

Total Coliform Bacteria (presence/absence)	TT	N/A	N/A	2017 (40 samples each month)	Naturally present in the environment	No
E. coli (presence/absence)	***	0	0		Human and animal fecal waste	No
Turbidity **** (NTU)	TT = 0.3 in 95% of samples	-	0.08	2017	Soil runoff	No

METALS & INORGANIC CONTAMINANTS

Barium (ppm)	2	2	0.00335	2/14/17	Erosion of natural deposits; Metal refinery discharge; Drilling wastes	No
Fluoride (ppm)	4	4	0.20		Erosion; Discharge fertilizer/aluminum factories	No
Nitrate (ppm)	10	10	0.356		Fertilizer run-off; Septic; Sewage; Erosion	No
Lead (ppb) (Tier 1 homes)	AL = 15	0	90th% = 3	2015	Corrosion of household plumbing; Erosion of natural deposits	No
Copper (ppm) (Tier 1 homes)	AL = 1.3	1.3	90th% = 0.056	(Round 18)		

SECONDARY STANDARDS*****

Aluminum (ppm)	0.05 - 0.2	-	0.027	2/14/17	Erosion of natural deposits	No
Chloride (ppm)	250	-	4.9			
Sulfate (ppm)	250	-	4.3			
Total Dissolved Solids (ppm)	500	-	44.0			
Zinc (ppm)	5	-	0.053			

UNREGULATED CONTAMINANTS

Sodium (ppm)	20 (Recommended Maximum)	-	6.2	2/14/17	Erosion of natural deposits; Added during treatment (soda ash)	-
Bromodichloromethane (ppb)	-	-	1.4	7/11/17	By-product of disinfection with chlorine, combined with organic matter	-
Chloroform (ppb)	-	-	9.9			

* **Highest Locational Running Annual Average** is the highest calculated annual average at a single location. Oregon City samples for disinfection by-products quarterly, at 4 locations.

** **Total Organic Carbon (TOC)** has no health effects, however TOC provides a medium for the formation of disinfection by-products.

*** **Routine and repeat samples** are total coliform-positive and either is E. coli-positive or system fails to take repeat samples following E. coli-positive routine sample or system fails to analyze total coliform-positive repeat sample for E. coli.

**** **Turbidity is a measure of cloudiness** caused by suspended particles in the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. Turbidity is monitored continuously, every 2 hours during treatment plant operation. The value reported is the highest single measurement for the year. 100% of samples tested were below the treatment technique level of 0.3 NTU.

***** **Secondary standards have no MCLs.** Numbers listed are guidelines for contaminants that may cause aesthetic effects in drinking water such as staining of plumbing fixtures, tastes, and odors.

Monitoring For Contaminants

Our most recent test results can be seen in the data table included in this report. We are required to report only those substances that were present at detectable levels. We are allowed to monitor for some contaminants less than once per year, therefore some of the data can be more than one year old.

View all monitoring results and compliance records by visiting the Oregon Health Authority SDWIS Data Online website at <https://yourwater.oregon.gov/>.

Search by water system name or ID number:

Oregon City – OR4101511

South Fork Water Board – OR4100591

Cross Connection/Backflow Prevention Program

Oregon City water customers play a big part in helping to keep our drinking water safe by complying with the Cross Connection/Backflow Prevention Program (CC/BPP). Learn more at <http://www.orcity.org/publicworks/cross-connection-backflow-prevention-program>.



Most modern water-using fixtures and appliances such as sinks, toilets, and clothes washers have built-in backflow prevention features. Some, however, require installation of a backflow prevention device to comply with plumbing code and to protect the cross connection from backflow conditions. Common residential examples are landscape irrigation and fire sprinkler systems. For plumbing permit information contact the Oregon City Building Department at **503.722.3789** or go to <http://www.orcity.org/building>.

Riparian Health

Does a stream flow through your property? Learn what you can do to protect and improve the vegetation and trees alongside the water. A healthy riparian area has many benefits, including filtering sediment and pollutants from stormwater runoff and providing shade to cool stream water temperature. Elevated water temperature can negatively impact coldwater fish and other coldwater aquatic species.

Visit <http://conservationdistrict.org/resources/stream> for more information.



To report illegal dumping or to participate in our Catch Basin Marking & Stenciling Program call **503.657.8241**

Table Definitions

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

MCL: Maximum Contaminant Level. 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.

MCLG: Maximum Contaminant Level Goal. 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.

MRDL: Maximum Residual Disinfectant Level. 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.

MRDLG: Maximum Residual Disinfectant Level Goal. 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.

N/A: Not Applicable.

N/D: Not Detected. The results were below the laboratory reporting limit.

NTU: Nephelometric Turbidity Unit. A measurement of the water turbidity. Turbidity greater than 5 NTU is noticeable to the average person.

ppb: Parts per billion. A measure of the concentration of a substance in a given volume of water. One part per billion corresponds to one penny in \$10,000,000.

ppm: Parts per million. A measure of the concentration of a substance in a given volume of water. One part per million corresponds to one penny in \$10,000.

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

90th Percentile: The highest result found in 90% of the samples when listed in order from the lowest to the highest results.

Stormwater Management

Oregon City is one of thirteen co-permittees on the Clackamas County National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Separate Storm Sewer System (MS4) Discharge Permit (permit number 101348). Our most recent five-year permit, issued March 16, 2012 by the Oregon Department of Environmental Quality (DEQ), lists numerous programs and tasks required of the city as we work to prevent stormwater pollution and improve stream and river health.

As required by DEQ, Oregon City submitted a Permit Renewal Application on February 28, 2017. The current permit has been administratively extended until such time as DEQ issues the next one.

Learn more about our ongoing stormwater programs and read our annual reports, submitted to DEQ by November 1st each year, by going here: <http://www.orcity.org/publicworks/npdes-documents-page>



Pollution Prevention

Each of us contributes to stormwater pollution.
Each of us can take steps to reduce stormwater pollution!

Lawn and Garden Care – Skip the weed and feed. Chemicals are harmful to children and pets. Rain can wash chemicals off your lawn and into storm drains and streams.

- Use slow release fertilizers or compost to add nutrients.
- Native plants need less water and maintenance.
- Learn more here: www.oregonmetro.gov/index.cfm/go/by.web/id=24309,
<https://www.growsmartgrowsafe.org/>

Vehicle Care – Maintain your vehicles to reduce oil and fluid leaks.

- Consider using EcoBiz-certified mechanics who use environmentally safe and healthy practices. <http://ecobiz.org/>
- Use a commercial car wash or wash your vehicle on the lawn to prevent runoff of soap and grime.



Oregon City Public Works has bio-bags available for residents of Oregon City. Contact the Operations Sanitary/Stormwater Division at 503.657.8241 for more information.

Roof Treatments – Use alternatives to chemical treatment for moss and lichen removal. Typical chemical treatments contain copper, zinc, and iron sulfate metals that are harmful to our waterways and aquatic life.

- Prevent moss growth by keeping debris and leaves off the roof; sweep or use a blower to remove debris once or twice a year.
- Prune back overhanging tree branches to reduce shade and moisture – this will slow moss build-up.

Pressure Washing – be stream friendly when cleaning your home, deck, sidewalk and driveway. Pressure washing can wash away pesticides, paints, solvents, auto fluids and other wastes that pollute our rivers and streams. Use these best management practices, or BMPs, to prevent pollution from entering Oregon City's storm system and causing harm to our waterways.

- Use dry cleanup methods first; sweep, blow, or vacuum sidewalks and driveways. Place the debris in the trash.
- Soak up oil and fluids using absorbents like cat litter, sawdust, or sand. Sweep the absorbent up and discard in the trash.
- Divert the wash water to a lawn or landscaped area away from the gutter and storm drain system.
- If diversion is not possible, use one or more bio-bags to prevent wash water from flowing into the street or to protect the affected catch basin. When the job is complete, dispose of the collected debris and remove the bags.

Note: bio-bags will block debris such as moss or dirt from entering the storm system, but will not do so for petroleum-based residues or fine sediments.

2017 System Improvement Projects

Replacement of aging components in the drinking water distribution system is necessary to maintain good water quality and system reliability.

Project Name	Ductile Iron Pipe (Length in Feet)			
	Pipe Diameter	6"	8"	10"
99E Bluff Waterline Replacement				112
South End Road Waterline Replacement		57	3734	
Total (Length in Feet)		57	3734	112

Like most cities across the nation, Oregon City has aging infrastructure. In order to continue providing reliable, high quality water to our customers, a percentage of water system revenue funds capital improvement projects. These investments allow us to:



99E Bluff Waterline Replacement – before and after

- Replace old cast iron pipe with ductile iron pipe. Cast iron pipe tends to corrode over time. This corrosion builds up on the pipe interior, reducing the effective diameter and capacity of the pipe. It also contributes to discolored water that, while being safe to drink, is aesthetically unpleasing.

- Ensure reliability by replacing older, smaller diameter piping with larger diameter piping that improves fire flow as well as water quality.

- “Loop” sections of pipeline whenever possible. Eliminating dead-end lines improves water circulation so water quality and fire flow are enhanced.

Pick-Up After Your Pets

Proper disposal of pet waste helps to minimize bacteria in Oregon City’s streams. Pet waste can contain pathogens such as Giardia, E. coli, Salmonella and Campylobacter – these can cause illness in humans, especially children and the elderly.

Always pick up after your pet when on walks, avoid children’s play areas, and remember to pick up in your own yard, too!





**Oregon City
Public Works**
122 South Center St.
Oregon City, OR
97045-2935

2018 OREGON CITY water quality REPORT

Join Us

You are encouraged to participate in City decisions that may affect water quality. City Commission meetings are held at City Hall, 625 Center Street, Oregon City, the first and third Wednesday of each month, starting at 7:00 pm. Find meeting agenda information or watch archived videos of public meetings at www.orcity.org.

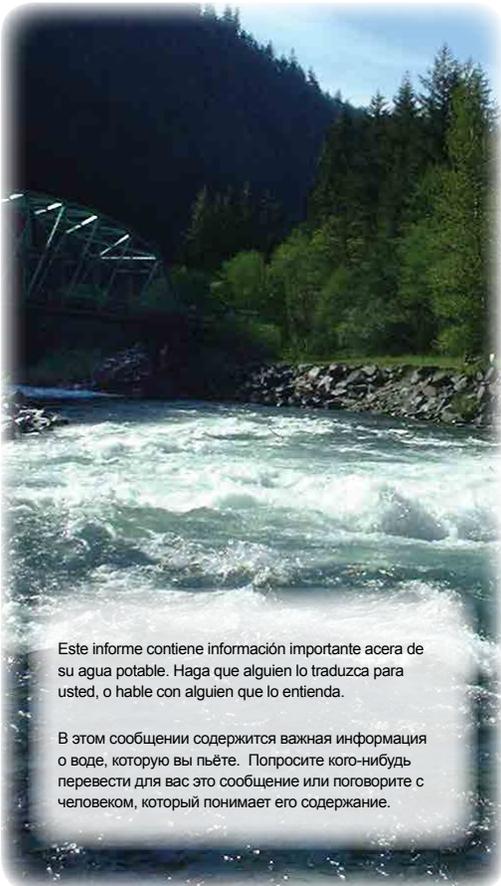
Resources

<http://theriverstartshere.org/>



- City of Oregon City: www.orcity.org
- City Hall (625 Center Street): **503.657.0891**
- Public Works Operations (122 S. Center Street): **503.657.8241**
- Questions about your utility bill: **503.657.8151**
- To report a water leak: **503.657.8241**
- OC Request!: www.orcity.org/community/oc-request-faqs-and-requests
- South Fork Water Board: www.sfwb.org
- Clackamas River Water Providers: **503.723.3511**, www.clackamasproviders.org
- Oregon Health Authority, Drinking Water Program: <http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Pages/index.aspx>
- Oregon Department of Environmental Quality: www.oregon.gov/DEQ
- Environmental Protection Agency: www.epa.gov
- EPA Safe Drinking Water Hotline: **1.800.426.4791**
- Greater Oregon City Watershed Council: **503.427.0439**, www.gocwc.org/
- Clackamas River Basin Council: **503.303.4372**, www.clackamasriver.org
- Clackamas Soil and Water Conservation District: www.conservationsdistrict.org
- Metro: www.oregonmetro.gov
- OSU Extension Service: www.extension.oregonstate.edu
- Regional Water Providers Consortium: www.regionalh2o.org

Drinking water questions or concerns: Kevin Hanks - **503.657.8241** ext 2108, khanks@orcity.org
Stormwater questions or concerns: Eric Hand - **503.657.8241** ext 2102, ehand@orcity.org



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

В этом сообщении содержится важная информация о воде, которую вы пьёте. Попросите кого-нибудь перевести для вас это сообщение или поговорите с человеком, который понимает его содержание.