

# 2018 WATER QUALITY REPORT

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PALATINE HILL WATER DISTRICT



## WHERE DOES MY WATER COME FROM?

Palatine Hill Water District purchases water from the City of Portland, who provides treated surface water from the Bull Run Watershed and groundwater from the Columbia South Shore Well Field located east of the Portland International Airport. The water is conveyed through Portland's water distribution system to Palatine Hill's main pump station on Highway 43 at Carey Lane and/or from the Upper Reservoir connection on Palatine Hill Rd. The Portland Water Bureau is also operating under a variance for the treatment requirements for *Cryptosporidium*, see The Bull Run Treatment Variance for more information.

### **Portland's Water System Established 1895**

Portland's drinking water system delivers water from two high-quality sources – the Bull Run Watershed and the Columbia South Shore Well Field – to almost one million people in Portland and surrounding communities.

### **Portland's Drinking Water Sources**

The Bull Run Watershed, Portland's protected surface water supply, is located in the Mt. Hood National Forest, 26 miles from Portland. The watershed is carefully managed to sustain and supply clean drinking water to a quarter of Oregon's population. In a typical year, the watershed receives an astounding 135 inches of precipitation (rain and snow), that flows into the Bull Run River and then into two reservoirs that store nearly 10 billion gallons of drinking water.

A Source Water Assessment completed in 2003 ( [www.portlandoregon.gov/water/sourcewaterassessment](http://www.portlandoregon.gov/water/sourcewaterassessment) or by calling 503-823-7525) identifies the only contaminants of concern as naturally occurring microbes such as *Giardia*, *Cryptosporidium*, fecal coliform bacteria, and total coliform bacteria. These organisms are found in virtually all freshwater ecosystems and may be present in the Bull Run at low levels. The Bull Run source is an unfiltered drinking water source and is currently not treated for *Cryptosporidium*. However, the Portland Water Bureau is currently working to construct a drinking water filtration plant by September 2027, see page 12 for more information.

The Columbia South Shore Well Field, Portland's protected groundwater supply, provides high-quality drinking water from 26 active wells located in three different aquifers. Located on the south shore of the Columbia River, the well field is the second largest water source in Oregon, and can produce up to 95 million gallons of water per day. The well field is used to supplement, or as an alternative to, the Bull Run supply during routine maintenance, turbidity events, emergencies, and when the bureau needs additional summer supply.

In collaboration with Gresham and Fairview, Portland works with businesses in the area to prevent hazardous material spills that could seep into the ground and impact groundwater. Portland also holds public events such as Aquifer Adventure, Cycle the Well Field, and Groundwater 101 to educate residents on how they can get involved. To learn more about the Well Field Protection Program or find upcoming events, visit [www.portlandoregon.gov/water/groundwater](http://www.portlandoregon.gov/water/groundwater) or call 503-823-7473.

## Frequently Asked Questions About Water Quality

### How does Palatine/Portland test our drinking water?

- The Portland Water Bureau monitors for over 200 regulated and unregulated contaminants in drinking water. All monitoring data in this report are from 2017. If a known health-related contaminant is not listed in this report, the Palatine/Portland Water Bureau did not detect it in drinking water.

### How is Portland's drinking water treated?

- The first step in the treatment process for Portland's drinking water is disinfection using chlorine. Next, ammonia is added to form chloramines which ensure that disinfection remains adequate throughout the distribution system.
- Finally, sodium hydroxide is added to increase the pH of the water to reduce corrosion of plumbing systems. This treatment helps control lead and copper levels at customers' taps, should these metals be present in commercial and household plumbing systems. See page 12 for upcoming treatment changes. See page 9 for more information about lead.

### Is Portland's water treated by filtration?

- No. Neither the groundwater nor the Bull Run source water is currently filtered. Groundwater is not required to be filtered. Since 1992, the Bull Run source has continued to meet the filtration avoidance criteria of the Surface
- Water Treatment Rule. However, after a series of *Cryptosporidium* detections in 2017, Portland is installing a filtration plant by 2027. See page 12 for additional information.

### Does Portland add fluoride to drinking water?

- No. The Portland Water Bureau does not add fluoride to the water. Fluoride is a naturally occurring trace element in surface and groundwater. You may want to consult with your dentist about fluoride treatment to help prevent tooth decay, especially for young children.

### Is Portland's water soft or hard?

- Portland's water is very soft. The hardness of Bull Run water is typically 3–8 parts per million (ppm), or approximately  $\frac{1}{4}$  to  $\frac{1}{2}$  a grain of hardness per gallon. For periods of time Portland may supplement the Bull Run supply with groundwater. Portland's groundwater hardness is approximately 80 ppm (about 5 grains per gallon), which is considered moderately hard.

### What is the pH of Portland's water?

- The pH of Portland's drinking water typically ranges between 7.5 and 8.5.

### How can I get my water tested?

- Contact the LeadLine at [www.leadline.org](http://www.leadline.org) or 503-988-4000 for information about free lead-in-water testing. For more extensive testing, private laboratories can test your tap water for a fee. Not all labs are accredited to test for all contaminants. For information about accredited labs, call the Oregon Health Authority, Oregon Environmental Laboratory Accreditation Program at 503-693-4100.

### What causes temporary discolored water?

- Since Portland's water is not filtered, natural sediment and organic material from the Bull Run Watershed is present in our water supply. This can sometimes be seen in the Fall as a harmless tea-colored tint. Sediment that has settled at the bottom of the water mains can be temporarily stirred up when the direction or flow of water changes due to hydrant use, nearby construction or maintenance activities, firefighting, or main breaks. Corrosion

of older pipes inside buildings can also cause rusty water after water has been sitting in the pipes for several hours. More information is available at [www.portlandoregon.gov/water/discoloredwater](http://www.portlandoregon.gov/water/discoloredwater).

More Questions? Contact the Water Quality Line: [WBWaterLine@portlandoregon.gov](mailto:WBWaterLine@portlandoregon.gov) or 503-823-7525

More FAQs: [www.portlandoregon.gov/water/FAQ](http://www.portlandoregon.gov/water/FAQ)

## What the EPA Says Can Be Found in Drinking Water

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.

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Contaminants in drinking water sources may include: microbial contaminants, such as viruses, bacteria, and protozoa from wildlife; inorganic contaminants, such as salts and metals, which are naturally occurring; pesticides and herbicides, which may come from farming, urban stormwater runoff, or home and business use; organic chemical contaminants, such as byproducts from industrial processes or the result of chlorine combining with the naturally occurring organic matter; and radioactive contaminants, such as radon, which is naturally occurring.

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 Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791 or at [www.epa.gov/safewater](http://www.epa.gov/safewater).

## Monitoring for *Cryptosporidium*

### 2017 Results of *Cryptosporidium* Monitoring at the Raw Water Intake

Number of Samples	Total Volume (L)	Detections (oocysts)
378	11,511.9	43

The Portland Water does not currently treat for *Cryptosporidium*, but is required to do so under the drinking water regulations. Portland is working to install filtration by 2027 under a compliance schedule with Oregon Health Authority. In the meantime, Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.

Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever, and stomach pain. People with healthy immune systems recover without medical treatment. According to the Center for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious

disease. Symptoms may be more severe and could lead to serious life-threatening illness. Examples of people with weakened immune systems include those with AIDS, those with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency has estimated that a small percentage of the population could experience gastrointestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their health care professional about the safety of drinking the tap water.

### **Special Notice for Immuno-Compromised Persons**

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 people 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 (EPA)/ Centers 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 800-426-4791.

### **How can I get involved?**

The Palatine Hill Water District Board of Commissioners is pleased to share the 2018 Drinking Water Quality Report with you. While this report is mandated by the federal government, the District prides itself in providing this comprehensive and accessible report.

To request additional copies of this report, please call 503-639-5096. Palatine Hill Water District works diligently to protect this essential resource, and to preserve and enhance the system that delivers water to your home or business. We urge you to take a minute to look through this report; learn about your water system and some of what goes into delivering water to your tap. If you have questions or comments about this, please call Palatine Hill Water District at 503-639-5096, or visit [www.palatinehillwaterdistrict.com](http://www.palatinehillwaterdistrict.com) to learn more.

We welcome your interest in Palatine Hill's water system.

Ron Vandehey  
Chairman

# Drinking Water Quality Report

## Contaminants Detected in 2017

Regulated Contaminant	Detected in Portland's Water		EPA Limits		Sources of Contaminant
	Minimum	Maximum	MCL or TT	MCLG	
Untreated Source Water from the Bull Run Watershed					
Turbidity (NTU)	0.20	3.06	5	N/A	Erosion of natural deposits
Fecal Coliform Bacteria (% >20 colonies/100 mL in 6 months)	ND	1.6%	10%	N/A	Animal wastes
<i>Giardia</i> (#/1L)	ND	0.27	TT	N/A	Animal wastes
Treated Drinking Water from Bull Run Watershed and Columbia South Shore Well Field Entry Points to the Distribution System					
Arsenic (ppb)	<0.50	0.94	10	0	Found in natural deposits
Barium (ppm)	0.00073	0.00975	2	2	
Copper (ppm)	<0.00050	0.00101	N/A	1.3	
Fluoride (ppm)	<0.025	0.160	4	4	
Lead (ppb)	<0.05	0.11	N/A	0	
Nitrate – Nitrogen (ppm)	0.013	0.140	10	10	Found in natural aquifer deposits; animal wastes
Treated Drinking Water from Points throughout the Distribution System of Reservoirs, Tanks and Mains					
Microbiological Contaminants					
Total Coliform Bacteria (% positive per month)	0	0%	N/A	N/A	Found throughout the environment
Disinfectant Residual					
Total Chlorine Residual Running Annual Average (ppm)	0.08	2.35	4 (MRDL)	4 (MRDLG)	Chlorine used to disinfect water
Total Chlorine Residual at Any One Site (ppm)	0.08	2.35	N/A	N/A	
Disinfection Byproducts					
Haloacetic Acids					
Running Annual Average at Any One Site (ppb)	37.8	37.8	60	N/A	Byproduct of drinking water disinfection
Single Result at Any One Site (ppb)	37.8	37.8	N/A		
Total Trihalomethanes					
Running Annual Average at Any One Site (ppb)	50.5	50.5	80	N/A	Byproduct of drinking water disinfection
Single Result at Any One Site (ppb)	50.5	50.5	N/A		
Unregulated Contaminant					
Unregulated Contaminant	Detected in Portland's Water			Sources of Contaminant	
	Minimum	Average	Maximum		
Untreated Source Water from the Bull Run Watershed and Columbia South Shore Well Field					
Radon (pCi/L)	<50	165	330	Found in natural deposits	
Sodium (ppm)	3.3	5.8	12.0		

For more detailed analyses, view our Triannual Reports at [www.portlandoregon.gov/water/triannual](http://www.portlandoregon.gov/water/triannual).

## Definitions

- **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**

Some contaminants do not have a health-based level or goal defined by the EPA.

- **NTU: Nephelometric Turbidity Units**

The unit of measurement of turbidity or cloudiness in water as measured by the amount of light passing through a sample.

- **ppm: Parts Per Million**

One part per million corresponds to one penny in \$10,000 or approximately one minute in two years. One part per million is equal to 1,000 parts per billion.

- **ppb: Parts Per Billion**

One part per billion corresponds to one penny in \$10,000,000 or approximately one minute in 2,000 years.

- **piC/L: Picocuries Per Liter**

Picocurie is a measurement of radioactivity. One picocurie is one trillion times smaller than one curie.

- **TT: Treatment Technique**

A required process intended to reduce the level of a contaminant in drinking water.

## Notes on Contaminants

### Arsenic, Barium, Copper, Fluoride and Lead

These metals are elements found in the earth's crust. They can dissolve into water that is in contact with natural deposits. At the levels found in Portland's drinking water, they are unlikely to contribute to adverse health effects. For more information, see *Reducing Exposure to Lead* on page 9.

### Disinfection Byproducts

During disinfection, certain byproducts form as a result of chemical reactions between chlorine and naturally occurring organic matter in the water. These byproducts can have negative health effects. Trihalomethanes and Haloacetic acids are regulated disinfection byproducts that have been detected in Portland's water. Adding ammonia to chlorine results in a more stable disinfectant and helps to minimize the formation of disinfection byproducts.

## **Fecal Coliform Bacteria**

As part of Portland's compliance with the filtration avoidance criteria of the Surface Water Treatment Rule, water is tested for fecal coliform bacteria before disinfectant is added. The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes. This is measured in percent of samples with more than 20 colonies in 100 milliliters of water during any six-month period. The Portland Water Bureau uses chlorine to kill these bacteria.

## ***Giardia***

Wildlife in the watershed may be hosts to *Giardia*, the organism that causes giardiasis. The treatment technique (TT) is to remove 99.9% of the organisms. The Portland Water Bureau uses chlorine to control these organisms.

## **Nitrate - Nitrogen**

Nitrate, measured as nitrogen, can support microbial growth (bacteria and algae). Nitrate levels exceeding the standards can contribute to health problems. At the levels found in Portland's drinking water, nitrate is unlikely to contribute to adverse health effects.

## **Radon**

Radon is a naturally occurring radioactive gas that cannot be seen, tasted, or smelled. Radon can be detected at very low levels in the Bull Run water supply and at varying levels in Portland's groundwater supply. Based on the historical levels of radon in groundwater combined with the limited amount of groundwater used, radon is unlikely to contribute to adverse health effects. For information about radon, call the EPA's Radon Hotline (800-SOS-RADON) or [www.epa.gov/radon](http://www.epa.gov/radon).

## **Sodium**

There is currently no drinking water standard for sodium. Sodium is an essential nutrient. At the levels found in drinking water, it is unlikely to contribute to adverse health effects.

## **Total Chlorine Residual**

Total chlorine residual is a measure of free chlorine and combined chlorine and ammonia in our distribution system. Chlorine residual is a low level of chlorine remaining in water and is designed to maintain disinfection through the entire distribution system.

## **Total Coliform Bacteria**

Coliforms are bacteria that are naturally present in the environment. They are used as an indicator that other potentially-harmful bacteria may be present. If more than 5% of samples in a month are positive for total coliforms, an investigation must be conducted to identify and correct any possible causes. The Portland Water Bureau uses chlorine to kill these bacteria.

## **Turbidity**

Turbidity is a measure of the water's clarity. Increased turbidity is typically caused by large storms that suspend organic material in the Bull Run source water. This can interfere with disinfection and provide an environment for microbial growth. Since Bull Run water is not filtered, the treatment technique (TT) is that turbidity cannot exceed 5 NTU more than 2 times in 12 months. The Portland Water Bureau shuts down the Bull Run system and serves water from the Columbia South Shore Well Field when turbidity in the Bull Run rises.

## Reducing Exposure to Lead

Lead is commonly found in a variety of places throughout our environment. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. While lead is rarely found in Portland's source waters and there are no known lead service lines in the water system, lead can be found in some homes. The Portland Water Bureau is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components in homes or buildings. In Portland, lead enters drinking water from the corrosion (wearing away) of household plumbing materials containing lead. These materials include lead-based solder used to join copper pipe — commonly used in homes built or plumbed between 1970 and 1985 — and brass components and faucets.

If present, lead at elevated levels can cause serious health problems, especially for pregnant people and young children. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

When your water has been sitting for several hours, such as overnight or after returning from work or school, 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 drinking water, you can request a free lead-in-water test from the LeadLine. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the LeadLine, 503-988-4000, [www.leadline.org](http://www.leadline.org) or the Safe Drinking Water Hotline (800) 426-4791, [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

In Portland, the most common sources of lead exposure are lead-based paint, household dust, soil, and plumbing materials. Lead is also found in other household objects such as toys, cosmetics, and pottery.

## Water Testing

Twice each year, lead and copper are tested at customers' homes that have lead solder and where levels are the highest. Testing results exceed the action level for lead when more than 10 percent of results from these homes are above 15 parts per billion. In testing conducted in October 2017, more than 10 percent of homes, 18 of 134, exceeded the lead action level. As a result of exceeding the action level, the Portland Water Bureau has been informing customers, encouraging them to follow the easy steps to reduce exposure to lead in water, and implementing corrective measures.

## Protecting Public Health

The Portland Water Bureau's Lead Hazard Reduction Program is a comprehensive approach to reduce exposure to lead. Through this program the Portland Water Bureau provides:

**Corrosion Control Treatment.** Reduces corrosion of lead in plumbing by increasing the pH of the water. This pH adjustment has reduced lead in tap water by up to 70 percent. Portland has begun the process of further improving corrosion control treatment. These improvements will be in place no later than Spring 2022. See page 6 for more information.

**Lead in Water Testing.** Provides free lead in water testing to everyone, but targets testing the water in households most at-risk from lead in water. These are homes built between 1970 and 1985.

**Education, Outreach and Testing.** Funds agencies and organizations that provide education, outreach, and testing on all sources of lead.

**Home Lead Hazard Reduction.** Supports the Portland Lead Hazard Control Program to provide grants to minimize lead paint hazards in homes.

**Lead and Copper Sampling at High-Risk Residential Water Taps**

Regulated Contaminant	Detected in Residential Water Taps		EPA Limits		Sources of Contaminant
	Fall 2017 Results	Homes Exceeding Action Level*	Action Level*	MCLG	
Lead (ppb)	17	18 out of 134 (13.4%)	15	0	Corrosion of household and commercial building plumbing systems
Copper (ppm)	0.26	0 out of 134 (0%)	1.3	1.3	

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

**Reduce your exposure to all sources of lead. Contact the LeadLine at [www.leadline.org](http://www.leadline.org) or 503-988-4000.**

- Free lead-in-water testing
- Free childhood blood lead testing
- Free lead reduction services

**Easy steps to reduce possible exposure to lead from household plumbing**

- Run your water to flush the lead out. If the water has not been used for several hours, run each tap for 30 seconds
- to 2 minutes or until it becomes colder before drinking or cooking. This flushes water which may contain lead from the pipes.
- Use cold, fresh water for cooking and preparing baby formula. Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.
- Do not boil water to remove lead. Boiling water will not reduce lead.
- Test your child for lead. Ask your physician or call the LeadLine to find out how to have your child tested for lead. A blood lead level test is the only way to know if your child is being exposed to lead.
- Test your water for lead. Contact the LeadLine at [www.leadline.org](http://www.leadline.org) or 503-988-4000 to find out how to get a FREE lead-in-water test.
- Consider using a filter. Check whether it reduces lead —not all filters do. To protect water quality, maintain and replace a filter device in accordance with the manufacturer’s instructions. For information on performance standards for water filters, contact NSF International at 800-NSF-8010 or [www.nsf.org](http://www.nsf.org).
- 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.
- Consider buying low-lead fixtures. As of January 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.

## Monitoring for *Cryptosporidium*

In March 2012, the Oregon Health Authority (OHA) issued the Portland Water Bureau a variance from the state and federal drinking water rules requiring the treatment of raw water from the Bull Run Watershed for the parasite *Cryptosporidium*. A variance is state permission not to meet a maximum contaminant level (MCL) or a treatment technique under certain conditions. OHA issued the Portland Water Bureau the treatment variance for *Cryptosporidium* based on substantial data and analyses presented in the *LT2 Treatment Variance Request for the Bull Run drinking water source*. Among the conditions of the variance was monitoring at the Bull Run raw water intake to demonstrate a level of *Cryptosporidium* that was equal

or better than what would be expected with treatment. After years of not detecting any *Cryptosporidium* at the Bull Run intake, it was detected above this level in 2017 from January through March and September through December. As a result of the January through March detections, OHA revoked the Bull Run Treatment Variance on December 18, 2018.

The Portland Water Bureau does not currently treat for *Cryptosporidium*, but is required to do so under the drinking water regulations. Now that the variance has been revoked, Portland is working to install filtration by 2027 under a compliance schedule with OHA (see page 7). In the meantime, the Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials has concluded that, at this time, customers do not need to take any additional precautions.

Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever, and stomach pain. People with healthy immune systems recover without medical treatment. According to the Centers for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious disease. Symptoms may be more severe and could lead to serious life-threatening illness. Examples of people with weakened immune systems include those with AIDS, those with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency has estimated that a small percentage of the population could experience gastrointestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their health care professional about the safety of drinking the tap water.

### 2017 Results of *Cryptosporidium* Monitoring at the Raw Water Intake

Number of Samples	Total Volume (L)	Oocysts Detected
378	11,511.9	43

## Drinking Water Treatment, Now and in the Future

The Portland Water Bureau is in the process of two major treatment improvements for Bull Run drinking water. While the Bull Run is a well-protected watershed requiring minimal treatment for drinking water, enhanced treatment will better meet current regulations, provide increased public health protection from lead in household plumbing and *Cryptosporidium*, provide more consistent water quality, and serve as an investment against future regulations.

### Corrosion Control Improvement Project

Corrosion control treatment makes the water less corrosive to building plumbing, reducing the amount of metals that can enter drinking water. This is particularly effective for reducing lead in water (see page 10). The Portland Water Bureau has been reducing lead in water by treating Bull Run water with sodium hydroxide for corrosion control since 1997. However, new evidence shows that there is no safe level of lead exposure. This led the Portland Water Bureau to install enhanced corrosion control by 2022. This will increase the alkalinity and pH of the drinking water to further reduce the amount of lead at customer taps.

More information: [www.portlandoregon.gov/water/corrosioncontrol](http://www.portlandoregon.gov/water/corrosioncontrol)

### Bull Run Filtration Project

The high-quality and well-protected nature of the Bull Run Watershed has allowed the Portland Water Bureau to qualify for a filtration exemption since 1992. However, after a series of detections for *Cryptosporidium*, Portland City Council directed the Portland Water Bureau to add filtration treatment to Bull Run drinking water. This is a major undertaking and will result in a new drinking water treatment plant for the Bull Run. The new treatment plant will be online by 2027.

In addition to providing treatment for *Cryptosporidium*, the addition of filtration will provide more consistent water quality through the distribution system, increase the reliability of the Bull Run by enabling treatment for most instances of increased turbidity, and filter algae and remove sediment from the water. Constructing a new treatment plant now is also an investment in our future by better preparing the Portland Water Bureau to meet future regulations.

More information: [www.portlandoregon.gov/water/filtration](http://www.portlandoregon.gov/water/filtration)