PORTLAND WATER BUREAU

CUSTOMER GUIDE TO Water Quality and Pressure

YOUR GUIDE TO:

- The basics of water quality and pressure.
- Troubleshooting common water quality and pressure concerns.
- Plumbing and water heater maintenance tips.
- Lead in home plumbing and how to reduce your exposure.
- Water filters, backflow prevention, emergency water storage, and water efficiency tips.

Table of Contents

CONTACT US

Water Quality Line

For information on water quality or pressure, lead in water testing, or to report a water quality or pressure concern, please contact:

503-823-7525

WBWaterLine@portlandoregon.gov

8:30 a.m.–4:30 p.m., Monday–Friday

Interpretation available

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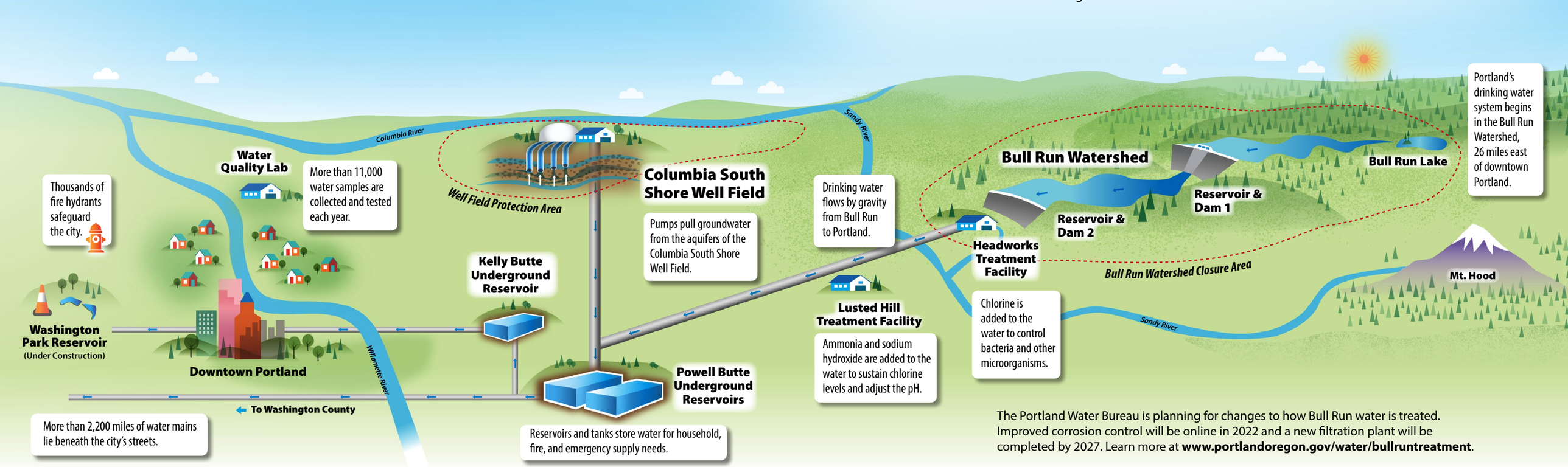


Portland's Water System: Two Sources of Water

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.

The Bull Run Watershed

- A protected surface water supply located in the Mt. Hood National Forest 26 miles from Portland.
- Two reservoirs in the watershed store nearly 10 billion gallons of drinking water.
- The watershed receives 135 inches of snow and rain each year.

The Columbia South Shore Well Field

- A protected groundwater supply located on the south shore of the Columbia River.
- The well field provides high-quality drinking water from 26 active wells located in three different aquifers.
- The well field is used as a supplement to, or as an alternative to, Bull Run water.

Three-Step Treatment Process:

1 Disinfection:
Chlorine is added at the source to disinfect the water.

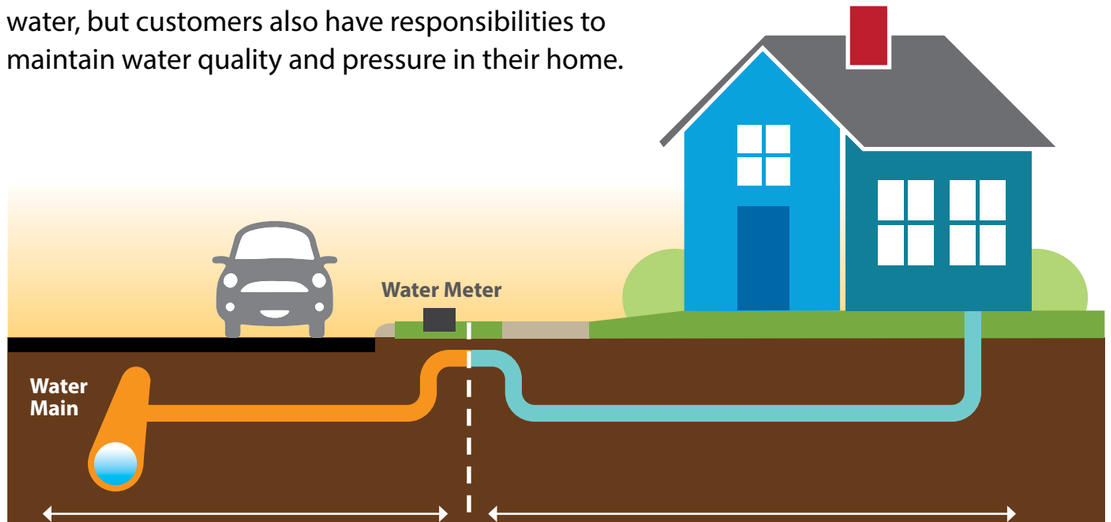
2 Chloramination/Disinfectant Stabilization:
Ammonia is added, which bonds with chlorine to form chloramines. Chloramines are a disinfectant that stays in water longer than chlorine alone.

3 pH Adjustment:
Sodium hydroxide is added to increase the pH of the water to reduce corrosion of lead and copper from home and building plumbing systems.

The Portland Water Bureau is planning for changes to how Bull Run water is treated. Improved corrosion control will be online in 2022 and a new filtration plant will be completed by 2027. Learn more at **www.portlandoregon.gov/water/bullruntreatment**.

Water Quality Is a Shared Responsibility

The Portland Water Bureau performs the majority of the work to ensure you receive safe and reliable drinking water, but customers also have responsibilities to maintain water quality and pressure in their home.



City's Responsibility

- Protect two sources of drinking water, the Bull Run Watershed and the Columbia South Shore Well Field.
- Treat drinking water to control microbial pathogens and adjust the pH to reduce corrosion.
- Maintain water pressure in the distribution system and deliver water to customers' water meters.
- Test drinking water throughout the distribution system to ensure it meets water quality standards.
- Maintain and repair all pipes, pumps, and other drinking water infrastructure, including water meters.
- Track and respond to water quality and pressure complaints.

Customer's Responsibility

- Maintain and repair all plumbing on the customer's side of the water meter.
- Protect your family from lead in your home's plumbing *(see page 7)*.
- Report water quality or pressure issues to the Water Quality Line.
- Address water quality and pressure issues that are caused by home plumbing *(see pages 5-13)*.
- Maintain and replace water filters and water heaters *(see pages 14 and 15)*.
- Prevent backflow contamination from hoses and irrigation systems *(see page 16)*.
- Store emergency water for planned or unplanned service disruptions *(see page 17)*.
- Install water-efficient devices and repair leaks *(see page 18)*.

Easy Ways You Can Maintain Drinking Water Quality

Test your water (for free) to determine if lead is present in your home's plumbing.

The water you receive from the Portland Water Bureau does not have elevated lead levels, but if lead is present in your home plumbing, it may dissolve into your water. Free lead-in-water test kits can be ordered at **www.leadline.org** or **503-988-4000**. See page 7 for more information on lead in home plumbing.

Do not use hot tap water for cooking, drinking, or making baby formula.

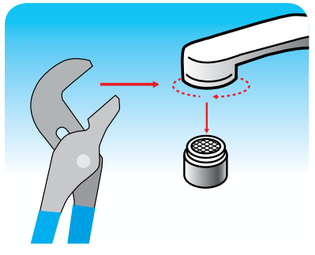
If lead and other metals are present in your plumbing, hot water dissolves them more easily into your drinking water. Always use cold water for cooking, drinking, and making baby formula. Heat water as needed on the stove or in the microwave.

Flush cold-water faucets before using for cooking, drinking, or making baby formula.

If a faucet has not been used for several hours or longer, run the water for 30 seconds to 2 minutes (or until the water feels cooler) before using the water for cooking or drinking. This will improve water quality by bringing in fresh water, and reduce lead levels if it is present in your home's plumbing.

Replace water filter cartridges.

Water filters are an option if you like the taste of filtered water, or if you have rusty water or lead caused by your home's plumbing. Always replace water filters according to the manufacturer's guidelines, as unmaintained water filters can harbor bacteria or release contaminants.



Clean faucet screens.

At the tip of most faucets you will find an aerator screen. This screen blends air into the water, which cuts down on water use. But it can also trap sediments and metals from your pipes and hot water tank. This can impact water quality and may block water flow. Routinely clean screens and replace them as needed. Twist off to remove. You may need a wrench to loosen the aerator.

Water Quality FAQs

How do I know my water is safe to drink?
The Portland Water Bureau treats and tests your water to ensure it meets state and federal drinking water standards. We continuously test drinking water throughout the distribution system for pH, chlorine, bacteria, and other water quality parameters. Call the Water Quality Line with questions or concerns, or view water quality reports online at **www.portlandoregon.gov/water/reports**.

Can the plumbing in my home impact my water quality?
Yes. Older iron plumbing can impact the taste and color of your drinking water, but it is not harmful to your health. If lead is present in your plumbing, it could dissolve into your drinking water. Lead is a health concern, especially for young children. If you are concerned about the impact of your home's plumbing on your water quality, call the Water Quality Line for more information at **503-823-7525**.

How do I determine what my pipes are made of?
Examine any exposed pipes in your basement or crawlspace, or pipes at the wall underneath sinks. Copper pipes are the color of a copper penny. Plastic pipes are typically a white or clear plastic. Galvanized iron pipes are a dull silver-gray color, and are common in older homes. Lead pipes, while also silver-gray, are not commonly found in Portland. Lead pipes are soft and scratch easily with a coin.

How can I get my water tested?
To request a free lead-in-water test kit, contact the LeadLine at **503-988-4000** or visit **www.leadline.org**. Testing for other metals is available upon request by calling the Water Quality Line directly at **503-823-7525**.

Does the Portland Water Bureau add fluoride to drinking water?
No. The Portland Water Bureau does not add fluoride to the water, but fluoride is a naturally occurring trace element found in Portland's source water.

What is the pH of Portland's water?
The pH of Portland's drinking water typically ranges between 7.5 and 8.5. Learn more about measuring pH at **www.portlandoregon.gov/water/ph**.

Is it safe to use tap water in my fish tank?
The Portland Water Bureau uses chlorine and ammonia to disinfect Portland's water in a process called chloramination. Chloramines can be lethal to fish, so check with a local pet store for tips on how to keep your fish safe. Learn more about chloramine at **www.portlandoregon.gov/water/chloramine**.

For more FAQs, visit **www.portlandoregon.gov/water/wqfaq**.

Lead in Home Plumbing

4 Things to Know About Lead in Drinking Water

1. Exposure to lead can harm your child's health.
Exposure to lead can cause slowed growth, and development and learning problems in children. Pregnant people and their developing babies are also vulnerable to lead.

2. Your home's plumbing may contain lead.
The main source of lead in water is home plumbing. Homes built or plumbed between 1970 and 1985 may have lead solder in their plumbing. Homes built before 2014 may have brass plumbing parts that contain lead.

3. Lead in water is most harmful to formula-fed infants.
Formula-fed infants drink a lot of water relative to their body size. When mixing formula, use cold, fresh water. Never use water from the hot water tap.

4. Drinking water is <u>not</u> a common source of lead.
Lead paint and dust in homes built before 1950 is the most common source of lead poisoning in the Portland area.

3 Things You Can Do to Protect Your Family from Lead

1. Test the children and pregnant people in your family for lead.
Testing your child's blood is the only way to know if they have been exposed to lead. Ask your health care provider about lead testing. The LeadLine provides free screening for children under 6 and pregnant people.

2. Test your water for lead for FREE.
Free testing is available in Portland and for customers of many Portland-area water providers. Order your free test kit from the LeadLine: **www.leadline.org** or **503-988-4000**.

3. Use cold, fresh water for drinking, cooking, or mixing baby formula.
- Run cold water for 30 seconds to 2 minutes, or until it feels colder, before using to flush lead out.
- Do not use water from the hot water tap—hot water may contain more lead.
- You may also consider using a filter. Check whether it removes lead; not all filters do.

LeadLine: <u>www.leadline.org</u> or 503-988-4000

Identifying the Source of Discolored Water

Discolored water, or particles in water, may be caused by your home plumbing. Answer the following questions to help identify the source of the problem.

Is the cold water, hot water, or both discolored?

Cold only, or both hot and cold water

Hot water only, cold is normal

Your water heater may need to be flushed or serviced, or sediment inside the tank is stirred up temporarily. Copper or iron pipes after the water heater can also contribute color. See page 15 for information on water heater maintenance.

Is the water discolored at all faucets, including the toilet?

Yes, discolored water is present at all locations, including toilets

No, the color or particles are only present at one or a few locations, but not all

This indicates a potential issue with the plumbing in specific locations in your home, as the discoloration is not present at all cold-water sources in the home.

Does the discoloration clear after running the water for 1-2 minutes?

No, running water does not resolve discolored water

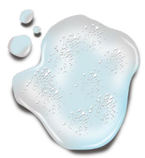
See chart on page 9

Yes, the discoloration clears quickly after running the water

This indicates a potential issue with the plumbing in your home, as the color resolved when you brought in fresh water from the water main. For some homes with older plumbing, discoloration in the first flush of water may occur frequently.

Troubleshoot specific colors on page 9.

Troubleshooting Specific Types of Discolored Water

Types of Discolored Water	How to Address Discolored Water
 **Yellow, brown, red, or orange**	**Color is frequently seen when water is first turned on, but it clears after running the water.** This is due to old iron plumbing inside your home. Flush your faucet as needed to bring in fresh water from the water main, purchase a water filter, or consider pipe replacement. Contact the Water Quality Line and ask for a water test kit that includes testing for iron. Iron is an essential nutrient, and is not a health risk.
	Color does not clear after flushing cold water faucet. This is typically due to hydrant flushing or work on the water system that stirred up harmless sediment inside the water mains in your neighborhood. Wait 30 minutes and run your water again for 2 minutes. It may take a few hours to clear depending on the cause. Limit hot water use and avoid doing light-colored laundry. Clean aerator screens if they clog with sediment. Report discolored water to the Water Quality Line. Visit **www.portlandoregon.gov/water/waterworks** to see if crews are working in your area.
 **Blue or green**	This is caused by new copper plumbing or existing copper plumbing that is corroding. Flush your faucet as needed to bring in fresh, uncolored water from the water main. Contact the Water Quality Line and ask for a water test kit that includes testing for copper. Copper is an essential nutrient, but it can be harmful in large doses.
Black or grey	Rubber may be breaking down in plumbing gaskets or carbon pieces are leaking out of household water filters. Replace as needed. Iron or manganese may be releasing from old corroded pipes. Contact the Water Quality Line and ask for a water test kit that includes testing for iron and manganese. Iron is not a health risk, but higher levels of manganese may pose a health risk.
 **White or milky**	Fill a glass of water and wait 3 minutes. If the water clears from the bottom to the top, it is just tiny, harmless air bubbles which can occur due to water temperature fluctuations or higher concentrations of air in the water. If hard white particles remain, or you find them clogging your aerator screens, this is due to the plastic dip tube failing inside the water heater or mineral buildup inside the tank. Place the particles in vinegar and wait a few hours—plastic from the dip tube won't dissolve. Your water heater may need maintenance or repair. See page 15 to learn more.
 **Pink or grey stains or slime**	This is caused by bacteria on surfaces in your home that grow in moist environments. The bacteria commonly form small colonies in sink drains, create rings around toilet bowls, or appear on surfaces in the shower. These "biofilms" are like plaque that forms on your teeth, and regular cleaning of toilets, sinks and other surfaces is required to keep them under control. Control humidity in your home and ensure proper ventilation in bathrooms with showers. Mold can also grow in these humid locations.

Questions? **Contact the Water Quality Line:** → **WBWaterLine@portlandoregon.gov** or **503-823-7525** (M-F 8:30am–4:30pm)

Identifying the Source of Taste or Odor Issues

Tastes or odors may be caused by your home plumbing.
Answer the following questions to help identify the source of the problem.

Is the taste/odor with the cold water, hot water, or both?

Cold only, or both hot and cold water

Hot water only, cold is normal

The taste/odor is due to the water heater or hot water plumbing in your home. Your water heater may need to be flushed or serviced. See page 15 for information on water heater maintenance.

Does the taste/odor remain if you take a glass of water outside or into another room?

Yes, the taste/odor remains in the water

No, the taste/odor disappears when I move away from the sink.

This indicates a sink drain odor issue. The drain trap or garbage disposal may need cleaning. If a drain odor persists, there could be a sewer issue in your home or on your street. Call City of Portland Environmental Services at **503-823-7740** for more information.

Is the taste/odor at all locations inside and outside your home?

Yes, the taste/odor is at all faucets inside and outside my home

No, the taste/odor is only present at one faucet or a few, but not all faucets

Your plumbing is the likely source of the taste or odor issue.

- Remove and clean faucet aerators or screens.
- Flush faucets to bring in fresh water from the water main. For some homes with older plumbing, the first flush of water may have an off taste/odor.

Does the taste/odor clear after running the water for 1-2 minutes?

No, running water does not resolve the taste/odor

See chart on page 11

Yes, the taste/odor clears after running the water

Troubleshoot specific tastes/odors on page 11.

Troubleshooting Specific Tastes or Odors in Drinking Water

Taste/Odor Issue	How to Address the Issue
Chlorine or pool taste/odor	Some people are more sensitive to chlorine taste/odor than others. Your drinking water is treated with chlorine and ammonia to form chloramines, a stable disinfectant, that you may be able to smell. Chlorine levels can fluctuate due to water age, water temperature, and other factors. You can filter your water or add slices of lemon to reduce chlorine taste/odor. Chlorine can also interact with organic material, such as sediment in the water main, creating taste/odor issues. Call the Water Quality Line if the issue persists.
Earthy or musty taste/odor	Remove and clean aerator screens, and flush faucets to see if the taste/odor clears. If the taste/odor persists in all cold-water faucets, even after running the water for a few minutes, report the issue to the Water Quality Line.
Sulfur or rotten egg taste/odor	Typically caused by water heater issues or bacteria in sink drains. Clean your drains. If the smell is with the hot water only, you may need to service the water heater. See page 15 for information on water heater maintenance.
Mineral taste/odor	Some people may notice a mineral taste when our groundwater source is being used. Bull Run surface water has low mineral content, and groundwater from the Columbia South Shore Well Field has higher dissolved mineral content. Bull Run water is our primary water source, and groundwater is only used as needed, often just one week per year. Call the Water Quality Line for more information.
Metallic or bitter taste	Metallic or bitter tastes are often due to old iron pipes inside homes. Remove and clean aerator screens, and flush faucets for 1-2 minutes to see if the taste/odor clears. Call the Water Quality Line to request a free metals test kit or to report a taste/odor issue that does not clear after flushing your faucets.
Fishy, fruity, sweet, floral, or grassy taste/odor	Seasonal changes in algae populations and other organic matter can cause taste/odor changes in drinking water. Bull Run surface water is unfiltered, and harmless algae populations increase in the summer. Changes in algae populations are monitored by Water Bureau staff. Home water filters can address taste and odor issues. Call the Water Quality Line if the issue persists.
Chemical or other tastes/odors	If your water smells like something not on this list, call the Water Quality Line. Staff can help determine if the taste/odor is due to your home plumbing or a change in water quality in the distribution system.

Questions? **Contact the Water Quality Line:** → **WBWaterLine@portlandoregon.gov** or **503-823-7525** (M-F 8:30am-4:30pm)

Water Pressure and Flow FAQ

What is the difference between flow rate and water pressure?

Flow rate is the amount of water coming out of a faucet or hose over a certain time period, and is often measured in gallons per minute. Pressure is the amount of force that is put on the water to make it move from one place to another, and is measured in pounds per square inch (psi).

Sometimes customers may experience what seems like low pressure, but in fact the problem is low flow. Low flow can be caused by a clogged faucet, old corroded pipes, or other plumbing restrictions, even when water pressure is normal. Low pressure can be caused by a leak in your home's plumbing or a water service disruption in your neighborhood.

What determines my water pressure?

For most customers, the difference in elevation between a city water tank and their home is what determines water pressure (see graphic below). This is why water tanks are higher than surrounding homes.

Does everyone in Portland receive the same water pressure?

No. Water pressure varies across town, and even on the same street (see graphic below). The Portland Water Bureau manages the system to keep most homes between 40 and 80 psi, but some homes receive lower or higher pressure. The Portland Water Bureau cannot adjust water pressure at individual homes.

What is the water pressure at my home?

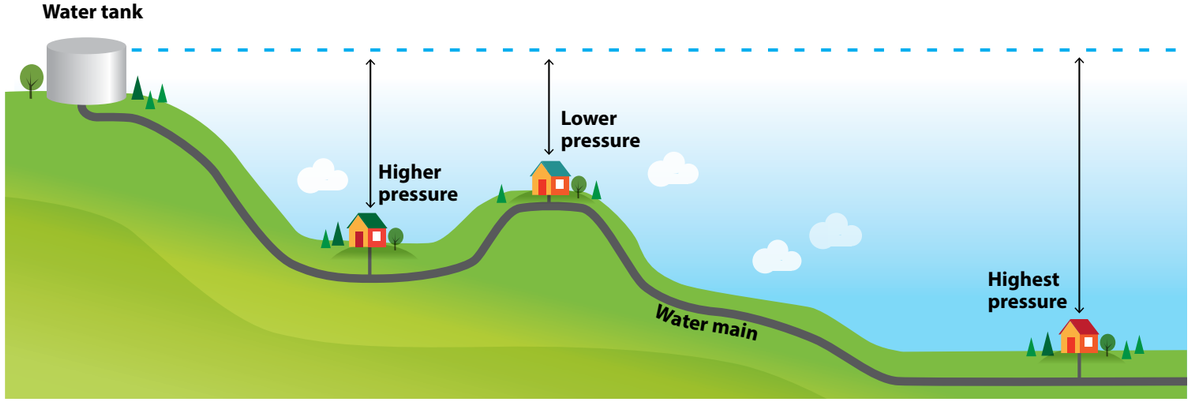
Call the Water Quality Line and staff can look up the estimated static water pressure range for your home. You can also buy an inexpensive pressure gauge at a hardware store to check pressure in real time at your house.

My water pressure is too low. What should I do?

Follow the troubleshooting steps on page 13. Most low water pressure complaints are caused by issues in the customer's home plumbing. If your home plumbing is causing low pressure or flow, the property owner is responsible for fixing the problem. If you live at a location that receives lower than 40 psi, you may choose to install a booster pump to increase pressure. If there is a low pressure issue in your neighborhood, Water Bureau staff will investigate and resolve the problem.

My water pressure is too high. What should I do?

Call the Water Quality Line to report the issue. If needed, Water Bureau staff can verify pressure at your meter. If water pressure is found to be out of normal range, Water Bureau staff will investigate and resolve the problem. If pressure is found to be within range, pressure is considered normal and cannot be reduced by the Water Bureau. You may need to install (or repair) a pressure reduction valve (PRV) to reduce pressure. PRVs are required by plumbing code if your home receives higher than 80 psi.



Troubleshooting Water Pressure and Flow Issues

Pressure or flow problems may be caused by your home plumbing.
Answer the following questions to help identify the source of the problem.

Is the water pressure issue with hot or cold water?

Both hot and cold water, or **cold only**.

Hot water only, cold is normal

Examine your water heater for leaks or other failures. Clean hot water faucet screens (aerators) and showerheads. Call a plumber or your property manager if you cannot address the problem. See page 15 for information on water heater maintenance.

Is the water pressure issue at all faucets inside and outside your home?

Yes, all faucets have the same issue.

See chart below

No, some faucets are normal

This indicates a plumbing issue at one or more (but not all) faucets in your home. Remove any filters or faucet screens (aerators) and check for blockages. Ensure that all valves inside the home are open. Listen for running water sounds that may indicate a leak. If you have older galvanized plumbing you may have restricted flow from pipe corrosion. Call a plumber or your property manager if you cannot address the problem.

Pressure/ Flow Issue	How to Address the Issue
Pressure/flow is reduced at all faucets, including outside hose spigots	There could be several causes for this. Remove and clean aerator screens to see if flow improves. If you have a pressure reducing valve (PRV) or whole house filter, check to ensure it is still operational. If older galvanized plumbing is present in your home, you may have restricted flow from corrosion. Check for visible leaks inside and outside the home and check your meter's leak detector (see page 18). If you are in an apartment or condo building, report the issue to your property manager. Call the Water Quality Line if you cannot determine the cause.
No water at all faucets, 0% flow	Check all faucets including those in the lowest level of your home. If you are completely out of water at all faucets, check your front door for a shut-off notice and look outside to see if crews are working nearby. Call the Water Quality Line if you cannot determine the cause. If you are in a multi-family property, you should also notify your property manager.
Pressure fluctuates throughout the day or year	Pressure fluctuations are normal and are based on seasonal or daily changes in water use. In residential neighborhoods, daily peak use is before and after normal business hours and seasonal peaks occur during the summer irrigation season. During these peak use periods you may experience lower water pressure than at night or in the winter.
High water pressure	While rare, a temporary spike in water pressure can occur if there is an issue in the water distribution system. You may also have a failed pressure reduction valve inside your home. Report high water pressure to the Water Quality Line.

Questions? Contact the Water Quality Line: → **WBWaterLine@portlandoregon.gov** or **503-823-7525** (M-F 8:30am-4:30pm)

Home Water Filtration

Do I need to filter my drinking water?

Not necessarily. The Portland Water Bureau delivers high-quality water that meets or exceeds all state and federal drinking water quality standards. Home filtration is typically not required, unless you have a taste preference, health condition, or a water quality issue caused by your home plumbing, such as the addition of lead from home plumbing.

What issues can a home water filter address?

- **Lead removal.** Lead in household plumbing can dissolve into drinking water when it sits in the pipes for several hours. A lead-certified filter will remove lead.
- **Taste and odor preference.** Some customers prefer the taste and smell of filtered water, or they may have old iron pipes in their home that impact the taste of their water.
- **Chlorine sensitivity.** Customers with a chloramine (chlorine + ammonia) sensitivity may prefer to filter their drinking or shower water. Learn more about chloramines at **www.portlandoregon.gov/water/chloramines**.
- ***Cryptosporidium* oocyst removal.** The Portland Water Bureau does not currently treat for *Cryptosporidium*. Customers who are immune compromised may be advised by their health care provider to filter their water to remove *Cryptosporidium* oocysts.

What should I know before purchasing a home water filter or treatment device?

- There are many filters to choose from. These include pour-through pitchers/carafes, faucet mount filters, counter top or under sink filters, showerhead filters, and refrigerator filters. A point-of-use filter, such as at the kitchen sink, is preferable to a whole house filter.
- Not all filters are the same. Read the packaging carefully and only purchase NSF/ANSI certified filters. The filter should specifically list the contaminants you wish to reduce.
- Filters require maintenance. If filters are not replaced according to the manufacturer's guidelines, you run the risk of it no longer performing as designed. Unmaintained filters can also harbor bacteria. Many filters have a device that indicates when to change the filter.

Are there alternatives to filtration?

Yes. If you have lead in your plumbing, run your water for 30 seconds to 2 minutes to flush the lead out if the water has not been used for several hours or overnight. Flushing your faucet will also address taste and odor issues if you have older iron pipes. To remove chlorine taste and odor, add slices of lemon to a pitcher of water, as the ascorbic acid (vitamin C) will help dechlorinate the water. Boiling water can also reduce chlorine levels; however, you should not boil water to remove lead. Bringing water to a rolling boil for 1 minute will also kill *Cryptosporidium* oocysts.

Where can I find more information on water filters?

Visit **www.portlandoregon.gov/water/filter** or call the Water Quality Line. The National Sanitation Foundation also has an online home water treatment guide at **www.nsf.org/consumer-resources/water-quality**.

Water Heater Maintenance

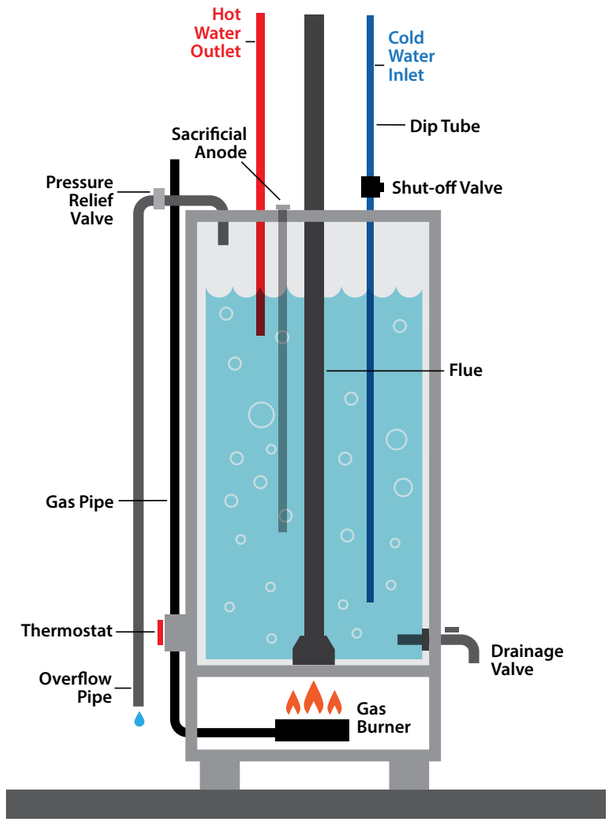
Common Problems

- **White plastic particles in water:**
  The dip tube is breaking down inside the tank.
- **Rust-colored water or tank is leaking:**
  Sacrificial anode no longer works, which leads to tank corrosion or failure. Hot water pipes can also corrode faster than cold water pipes, leading to rust-colored water.
- **Brown or green tinted water:**
  You may need to flush sediment from your hot water tank, or your hot water pipes may be tinting your water.
- **Water is no longer hot:**
  Check your tank for leaks, and ensure the heating element is operational. You may need to have your water heater serviced or replaced.
- **Hot water pressure is suddenly low:**
  Check your tank for leaks, and clean out aerator screens on faucets. Pipe or tank corrosion may be restricting the flow of water.
- **Pressure relief valve is leaking:**
  The valve may need to be replaced, or you may need an expansion tank. In rare cases, there could be a pressure surge in the water system. Call the Water Quality Line for more information.

Water Heater Facts

- Tank-style water heaters keep hot water stored for use, while tankless systems only heat water as it is needed. There are gas and electric models for both.
- Most manufactures recommend flushing or maintenance of water heaters annually or every few years.
- The typical lifespan of a water heater is 10 years (tank style) to 20 years (tankless).
- The property owner is responsible for maintaining their water heater, and hiring a plumber may be required.

Water Tank Anatomy (gas-heated model)



Safety Precautions

Setting the thermostat: Depending on who you ask, the optimal temperature setting on water heaters ranges from 115°F to 140°F. A temperature of 115-120°F can reduce the risk of scalding (burning your skin) and save energy, while a temperature of 135-140°F can prevent the growth of harmful bacteria, such as *Legionella*, but can cause scalding. If you set the temperature between 135-140°F, be sure to have a plumber install anti-scalding devices.

Maintenance safety: Always turn off the heating elements before doing maintenance on your water heater. Call a plumber for assistance if you are not comfortable doing it yourself.

Questions? Contact the Water Quality Line: → **WBWaterLine@portlandoregon.gov** or **503-823-7525** (M-F 8:30am-4:30pm)

Backflow Prevention

What is Backflow?

Backflow is a preventable source of drinking water contamination in homes and businesses. If there is a pressure loss or reversal in the water system, backflow can happen when non-potable water flows backwards into the potable water supply.

- **Potable water** = the clean, safe drinking water served to your home.
- **Non-potable water** = water in swimming pools, hot tubs, cleaning buckets, hose or irrigation lines, fire sprinkler systems, water-using dental or medical devices, or inside industrial facilities.

Basic Backflow Example

Imagine drinking water from a glass through a straw. Instead of swallowing the water, you push it back through the straw and into the glass. Gross! This is exactly how backflow contamination happens: Used or non-potable water is pushed or pulled back into the supply of clean drinking water.

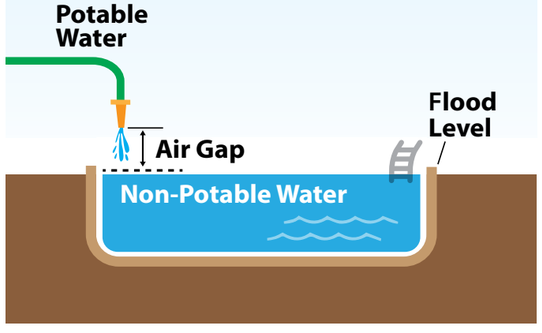
Luckily, backflow contamination is preventable, and backflow prevention devices are required for some water customers, including those with residential irrigation systems.

Ways to Prevent Backflow Contamination

Air Gap

An air gap removes the direct connection between the potable water supply and non-potable water. Hoses or pipes do not extend into non-potable fluids.

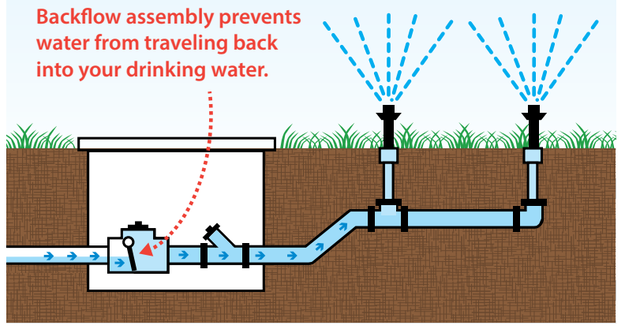
Example: When adding water to a swimming pool, don't put the hose into the water. Maintain a gap of air to prevent pool water from flowing backwards into your home plumbing.



Backflow Assemblies

Backflow assemblies are valves on pipes or plumbing fixtures that prevents water from flowing backwards. Backflow assemblies require annual testing to ensure continued safety.

Example: If you have an irrigation system in your yard, you are required to have a backflow assembly. This prevents the water in your irrigation systems from flowing backwards into your home plumbing.



Contact the Backflow Department:

Records: **503-823-3256** Lead Inspector: **503-823-7480**
www.portlandoregon.gov/water/crossconnection

Emergency Water Storage

While rare, water service outages and disruptions can occur and you need to be prepared for them.

Just like you should keep a flashlight in your home if the power goes out, you need to store water for emergencies.

- A water main break on your street could cause you to unexpectedly be without water until repairs are made.
- Fire hydrant flushing or firefighting activity in your neighborhood could cause your water to be temporarily discolored for a few hours or longer.
- A large earthquake may cause significant damage to the drinking water system, causing water service outages and disruptions for weeks or months while repairs are made.

How much water does your family need?

It depends on the number of people in your home. A 3-day supply is the minimum recommended, but this will not prepare you for catastrophic events. Ideally you should prepare for the worst-case scenario, which is one gallon per person per day for 14 days.

#of People	3-Day supply	14-Day supply
	3 gallons	14 gallons
	6 gallons	28 gallons
	9 gallons	42 gallons
	12 gallons	56 gallons

And don't forget about water for pets!

Emergency Water Tips

- Every time you go to the grocery store, buy 1 gallon of water until you have reached your 14-day supply.
- Multiple 1 to 5-gallon containers of water are better than one large 55-gallon drum, as your water source could become damaged or contaminated in an earthquake.
- If you are tight on storage space, spread the water out around your home: in the garage, kitchen cabinets, closets, under the bed. Stackable water containers can conserve space.
- In addition to storing water, you may wish to add an emergency water filter, a bottle of unscented bleach, or a pot for boiling water to your emergency kit. In the case of an emergency, you may need these items to treat water if its quality is questionable.
- Water heater tanks can provide an additional supply of emergency water. Make sure your water heater is strapped to the wall so that it doesn't fall over during an earthquake. This water is best used for cleaning or washing, and not drinking.

For additional water storage tips, including how to properly sanitize and fill your own water containers, visit **www.regionalh2o.org/storing-water-emergency**.

Are you prepared? Learn more about 14-day emergency preparedness at **www.portlandoregon.gov/pbem/prepare.**

Be informed.
Sign up for public alerts today.
PublicAlerts
www.publicalerts.org

Use Water Efficiently

Save Water and Money

Fix plumbing leaks. On average, leaks account for about 13% of indoor water use. Toilet leaks are especially common. Leaks can also cause low water pressure. See below for leak detection tips.

Order free conservation devices for your home. The Portland Water Bureau provides free showerheads, faucet aerators, toilet leak detection tablets, and other water-saving devices.

Replacing a toilet? Get a rebate. When you purchase a WaterSense-labeled toilet and recycle your old one, you can apply for a $50 rebate.

Practice water-efficient landscaping. Save water and have a beautiful yard with water-saving irrigation devices, drought tolerant plants, and other water-efficient landscaping techniques.

Check Your Home for Leaks

Step 1. Stop using water. Turn off all water inside and outside the house. Make sure the dishwasher and other appliances are not running.

Step 2. Locate your water meter. It is typically located in the ground near the sidewalk or street.

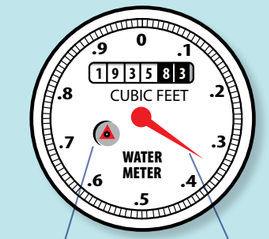
Step 3. Watch the meter. You may have a leak if the leak detection dial or the meter sweep hand is moving. If neither is moving, note the position of the sweep hand, stop using water for several hours, and check the meter again. If it has moved, you may have a slow leak.

Step 4. If the meter indicates a leak, determine if it is inside your house or underground between the meter and your house.

- Locate the main water shutoff valve inside your home, basement or garage. Turn off the main water supply to your house.
- Turn on a faucet inside the house to test your shutoff valve. If water stops flowing from the faucet after a few seconds, the shut-off valve is working.
- If the shutoff valve is working, check the meter again. If the meter is still moving, you may an underground leak in the main line from the meter to your house. If the meter is no longer moving, you may have a leak after the main shutoff valve. Common leak locations include toilets, faucets, appliances, garden hoses, and irrigation systems.

For more information on finding and fixing leaks:
www.portlandoregon.gov/water/leaks

Water Meter



The leak detection dial measures a small amount of water. The meter sweep hand measures one cubic foot or 7.48 gallons for every rotation.

Contact the Water Efficiency Department:

Questions? Call **503-823-4527** or email **conserve@portlandoregon.gov**
www.portlandoregon.gov/water/conservation

Additional Resources

Drinking Water Quality Resources and Reports

Drinking Water Quality Homepage: **www.portlandoregon.gov/water/waterquality**
Water Quality Reports: **www.portlandoregon.gov/water/reports**
Water Quality FAQ: **www.portlandoregon.gov/water/wqfaq**
Water Quality in Residential Homes: **www.portlandoregon.gov/water/wqhome**

Resources for Reducing Lead Exposure

Information on Lead in Drinking Water: **www.portlandoregon.gov/water/lead**
Multnomah County LeadLine, for information on all sources of lead: **503-988-4000** or **www.leadline.org**

Sewer and Stormwater Resources

The Bureau of Environmental Services is responsible for sewer and stormwater management.
Main website: **www.portlandoregon.gov/bes**
Report an illegal spill or pollution: **503-823-5547**
Report a clogged stormwater drain, sewer backup, or sewer odor: **503-823-1700**

Portland Water Bureau
1120 SW Fifth Ave., Room 600
Portland, OR 97204

Questions? We're Here to Help

WATER QUALITY
For questions regarding drinking water quality or water pressure.
503-823-7525 | WBWaterLine@portlandoregon.gov
8:30am – 4:30pm, Monday – Friday

CUSTOMER SERVICE
For bill payment, account setup, or water use inquiries.
503-823-7770 | PWBCustomerService@portlandoregon.gov
8am – 5pm, Monday – Friday

EMERGENCY LINE
For reporting drinking water system emergencies, including main breaks.
503-823-4874 | 24 hours, 7 days a week

WATER EFFICIENCY
For water conservation information and tools.
503-823-4527 | conserve@portlandoregon.gov
8am – 5pm, Monday – Friday

CENTRAL INFORMATION LINE
For general information about Water Bureau projects, programs, and public meetings.
503-823-7404 | 8am – 5pm, Monday – Friday

Please contact us for translation or interpretation, or for accommodations for people with disabilities.

More information · Más información
Дополнительная информация · Thêm thông tin
欲了解更多信息 · Mai multe informații
Macluumaad dheeri ah · Подробиці
Tichikin Poraus · अधिक सूचना

www.portlandoregon.gov/water/access
503-823-7525 (TTY 503-823-6868)

01/2019