



Gateway to the Redwoods

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Water Quality Self-Diagnostic Tool

Troubleshoot Your Water Quality

This tool will aid you with the most common water quality issues and solutions. If you would rather speak to a City representative, please call (707) 459-4601. Please be aware that a response will be provided the following business day.

As a reminder: City employees are experienced water professionals, not medically trained staff. If you are experiencing any symptoms of illness, the City recommends that you contact your personal physician.

Basic Understandings

Below are basic considerations that will help you with troubleshooting a water quality issue.

- Does the problem occur with some or all inside taps?
- Do you observe the same conditions at the outside faucets (hose bib)?
- Does it occur with just the cold water, the hot water, or both?
- Does it occur only when you first turn on the water or does it occur continuously?
- When did you first notice the issue?
- Are your neighbors experiencing the same issue?
- Do you know what type of pipes you have (i.e., copper, galvanized iron)?
- Do you have any in-home water treatment devices (i.e., water softener, reverse osmosis system, whole house filtration system, point-of-use activated carbon filter)? If not in use, is it still connected to your internal plumbing?

Color or Appearance of Water

Cloudy, Foamy, or Milky Water

- If you are constantly experiencing cloudiness in both the cold and hot water, the cloudiness is caused by tiny air bubbles. This air is under pressure in your water pipes, much like carbon dioxide in a bottle of soda. When you turn on your tap, the pressure is released, allowing the bubbles to appear, just as removing the cap from a soda bottle causes the soda to fizz. If you allow a glass of water to stand for a few moments, the air bubbles will rise to the surface. This phenomenon is called entrained air and does not affect the quality of your water. The water is perfectly safe to drink.

Brown or Yellow Hot Water on First Draw

- The internal plumbing of your house is the likely culprit if discolored water appears only for a minute or two after you turn on the tap. Many houses have galvanized iron pipes, and when the zinc coating on the inside of galvanized iron pipe wears thin, the water becomes discolored as it comes in contact with bare iron. The longer the water sits in the pipes, the worse the discoloration will be. That is why this problem is most noticeable the first time you turn on the tap in the morning. If only a few taps are affected, only a portion of your internal plumbing has galvanized pipe.
- After running your tap for a few minutes, clean water from your water heater or the water main will replace the discolored water. Since iron is an essential nutrient, this condition poses no health hazard. If the discoloration bothers you, however, flush the tap until the water becomes clear and save the water for iron-loving plants.

Brown or Yellow Cold Water Constantly

Light yellow to dark brown water is typically caused by a disturbance of pipeline sediments in the water main. Discoloration is caused by dissolved iron which is stirred up in naturally occurring sediments that exist in all water systems. Any of the following circumstances may have caused flow reversals in the water mains and sediment to be disturbed.

- The different colors can be attributed to varying chemical oxidation states of the iron (or rust) and by varying concentrations of the rust in the water.
- The discolored water may be due to planned flushing of the water main by the City to remove pipeline sediments in your area.
- A nearby water hydrant may have been knocked over due to a vehicle collision or may be in use to fight a fire.
- There may be some pipeline repair work (or construction activity) in the area and some valves may have been closed for this work.

Despite its appearance, this does not indicate that the water is unsafe or that the integrity of the water main has been compromised. A disinfectant residual is always maintained to ensure that the water is safe for household use, including cooking and drinking. For aesthetic reasons, you should avoid doing laundry until the water clears up.

Purging Discolored Water

- Wait an hour before resuming normal water use to let normal flow patterns re-establish themselves and any remaining sediment to settle down.
- Flush water at full force from your front hose bib until it runs clear. This should take no more than two or three minutes. If the water continues to be discolored, wait an additional hour and try again before proceeding to the next step.
- Start by flushing the cold-water faucet in the bathtub. If you are concerned about wasting water, water the backyard from the backyard hose bib for several minutes or until the water clears. After the tub or backyard faucet runs clear, flush all the other cold water household faucets (starting from the side of the house nearest the street, then the rest of the cold-water faucets within the home).
- If discolored water has been drawn into the hot water system, the hot water can continue to be used until the discoloration dissipates and is no longer an aesthetic issue. This is generally preferred to draining and refilling the water heater which may require expert help (calling a plumber) if you are unfamiliar with how to do this safely.

Floating Particles

Black Particles

Black particles can come from three common sources: a broken water filter, a degrading faucet washer or gasket, or a disintegrating black rubber flexible supply line hose (for a water heater, washing machine, or kitchen faucet, etc.).

- If the particles are very hard, similar in size and shape, and look like large coffee grounds, they are probably granular activated carbon (GAC) particles from the inside of a GAC water filter that you have installed. Replace the filter cartridge or consult with the manufacturer or the vendor who sold it to you.
- If the particles are solid but rubbery in texture, they could be pieces of an old disintegrating faucet washer or gasket. If this is the problem, the particles would likely only be present at one faucet and that faucet is already leaking. Replace the faucet washers and the packing at the ends of the supply lines.
- If the particles are small black particles that can be easily smeared between two fingers, they are probably from the inside of a flexible hose. These black rubber hoses are covered with a braided stainless-steel mesh. Over time, the chloramine in the water causes the rubber to break down. Replace the hose, ideally with a liner that is identified as chemical or chloramine resistant. Black rubber hoses typically have a one-year warranty while the more chemical resistant hoses have a five-year warranty.

Brown or Orange Particles

- Brown or orange particles are typically rust particles that have broken off the inside of your water pipes or the City of Willits water mains. These particles are very hard, irregular in size and shape, and can be several different colors (including black). They consist of mostly iron and are not a health hazard, but they are a nuisance if they clog washing machine screens, shower heads, or faucet aerators.
- Another common cause of brown or orange particles in the water is a broken water softener. A water softener contains many small, round beads (or resin) for softening water. The beads will be uniform in size, typically the size of fish eggs, and are brown or orange. The mechanism that keeps these beads in the tank can break, releasing them into your water. Call your service agent for repairs.

White Particles

White or tan particles in the water usually come from internal plumbing. This material is pipe scale and is a combination of calcium carbonate and magnesium carbonate. Calcium and magnesium carbonates are naturally occurring minerals and are not a health hazard. Over time, these minerals can deposit on the inside of your pipes and then begin to flake off. Although this process usually occurs slowly over an extended period of time, there are three common circumstances that can cause it to happen rapidly:

- If your water was turned off for repair work, the pressure and turbulence created when it is turned back on can dislodge the minerals from the pipes.
- If you install a water softener, the softer water can begin to re-dissolve the minerals from the pipes and pieces may begin to break loose.
- If you have galvanized iron pipes, they will corrode over time and gradually swell up on the inside, causing the minerals to flake off (Although pipe scale is not a health hazard, it can

clog washing machine screens, shower heads, and faucet aerators. There is no practical way to remove pipe scales from the inside of your pipes; if the problem is severe, you may want to consider re-plumbing.

The water heater is another source for white or tan particles. As the water is heated, calcium and magnesium carbonates precipitate out of the water, forming white or tan sand-like deposits. As you use the hot water, these minerals can be carried along clogging washing machine screens, shower heads, and faucet aerators. To keep mineral deposits from accumulating in the water heater, flush your water heater at least once a year. Flushing regularly also extends the life of the heater and makes it operate more efficiently.

If you are experiencing floating white particles, the water heater is the likely culprit. A water heater contains a plastic dip tube, which is an extension to the inlet of the water supply. The tube directs the cold incoming water to the bottom of the tank. As the tube gets old, it can disintegrate, sending white particles into the hot water. These particles are brittle and vary in size from small irregular pebbles to longer shards. Contact the manufacturer or vendor for advice on how best to repair the water heater.

Crystals or White Residue

The crystals or sediment left behind on fixtures, white surfaces, and pots after water evaporates are calcium and magnesium carbonates. These are naturally occurring minerals and do not pose a health hazard. These deposits may appear green, blue, or brown, having been colored by tiny amounts of the metals found in your water pipes. Carbonate deposits can be dissolved with white vinegar. Dishwasher deposits can be minimized by using a commercial conditioner, by using liquid detergents and by using the air-dry instead of the power-dry setting on your dishwasher, which bakes the carbonates onto glassware.

Taste

If you recently moved to the City of Willits service area, your new water may taste different to you. Just as various brands of bottled water taste different due to the varying minerals they contain, the taste of domestic drinking water also varies with its source(s). Over time, you will become accustomed to its taste. Be assured that the drinking water that City provides meets or surpasses all State and Federal drinking water standards.

Odor

The first step in understanding the source of an odor is to determine if the problem exists in the public water supply or in your plumbing. If the water supply is causing the odor, you will experience the odor at every water faucet, and it will be persistent. If the source of the odor is in your plumbing, you will experience the odor in only one or several, but not all, of the faucets. If the problem goes away after running the water for a few minutes, the cause is somewhere in your plumbing. If your plumbing is the source of the odor, you can try flush the plumbing system or you can consult a licensed plumber. Contact the City at (707) 459-4601 if you suspect it's the public water supply.

When you detect an odor in your tap water, we recommend that you perform what we call a glass test at the faucet where you detect the odor.

- Run the cold water tap for 20 to 30 seconds.

- Get a clean glass.
 - Fill and rinse twice with cold tap water.
- Fill the glass and turn off the faucet.
- Step away from the sink (This eliminates the possibility of mistaking odors from your drain for odors in your water.)
- Smell the water in the glass and characterize the odor if any.

Chlorine Odor

- If you detect a chlorine odor, it is most likely the chloramine (also called total chlorine) that the City of Willits uses to disinfect the water to ensure that it is safe to drink. Although the total chlorine level is a fraction of what is found in pools and spas, you may occasionally detect the smell of chlorine in your water. This odor may be particularly strong in the shower since chlorine is released to the air more rapidly when mixed with hot water.

Foul / Sulfur / Rotten Egg / Sewage Odor

- **Cold Water:** If the odor is not evident in the glass but is noticeable when the cold water is running and you are standing at the sink, then the odor is most likely coming from the drain. This problem is easily solved by filling the sink with hot water, adding a few ounces of chlorine bleach, and allowing the hot chlorinated water to flush and disinfect the drain. It is also good practice to periodically remove and clean the sink stopper. The garbage disposal in the kitchen sink can be cleaned in a similar manner.
- **Hot Water:** If you find these odors in your hot water, there are two probable causes:
 - Bacteria may be residing in the water heater. Disinfecting the water heater may eliminate this odor.
 - The water heater anode may need to be replaced. If experienced, inspect the anode yourself; otherwise, call a plumber.

Swampy / Fishy / Earthy / Musty / Moldy / Grassy Odor

- These odors may be caused by an algae bloom in a water source reservoir. Typically, this is a short-lived event.