

Advice about Lead in Drinking Water

EPA and the Centers for Disease Control and Prevention believe there is no safe level of lead exposure. Lead is harmful to health, especially for children. While paint, dust, and soil are the most common sources of lead, drinking water can contribute 40 to 60 percent of an infant's lead exposure.

Although lead is not commonly found in our raw water the City of Dayton takes the threat of lead in your drinking water seriously. We continuously monitor and maintain our water treatment processes to provide corrosion control to protect you, our customers, from lead.

Residents concerned about lead in their drinking water have a number of options to help reduce the amount of lead in their drinking water.

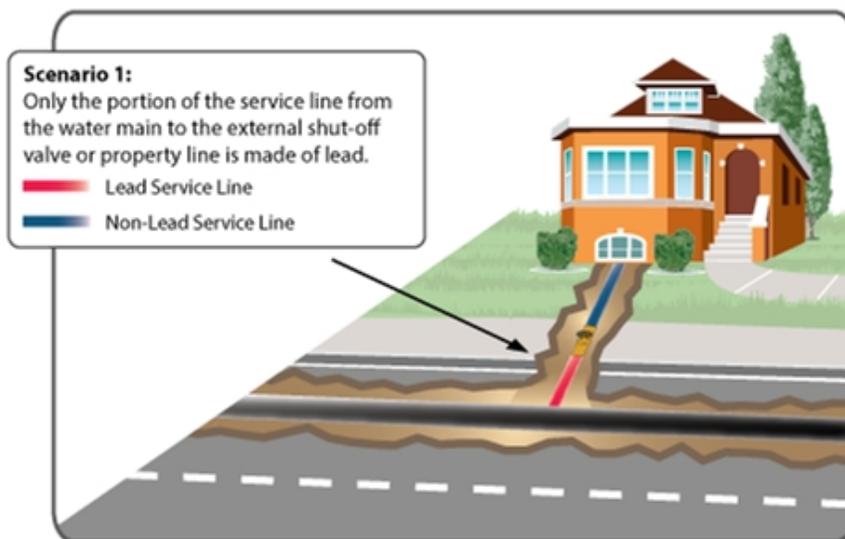
- **Have your water tested.** Lead is not visible in drinking water. The City of Dayton Water Quality Lab can test for lead in drinking water upon request. You can call **937-333-6030** for more information. You can also check the Ohio EPA Website (<http://www.epa.state.oh.us/ddagw/labcert.aspx>) for a list of laboratories certified to analyze for lead.
- **Be aware of any work that could disturb your lead service line**, such as water main replacement, lead service line repair or replacement of part of the service line.
- **Run water before use if it has not been used for several hours.** The amount of time to run the water will depend on whether the home has a lead service line or not.
- **Use only cold water for drinking, cooking, and preparing baby formula.**
- **Do not boil water to remove lead.** Boiling water will not remove lead and can in fact concentrate lead levels.
- **Purchase a water filter** that is certified to remove "total lead."
- On a regular basis **clean and remove any debris from faucet aerators** to clear out any particles of lead that may become trapped.
- **Purchase lead-free faucets and plumbing components.**
- **Remove the entire lead service line.**

How do I know if I have a lead service line?

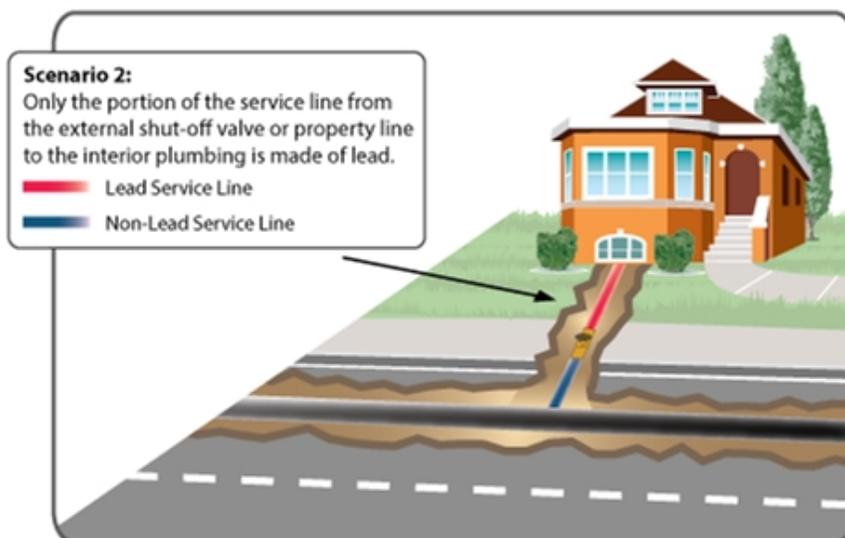
If the plumbing in your home is accessible, you may be able to inspect your own plumbing. Otherwise, call your water provider or hire a plumber.

Some common situations (click to enlarge images):

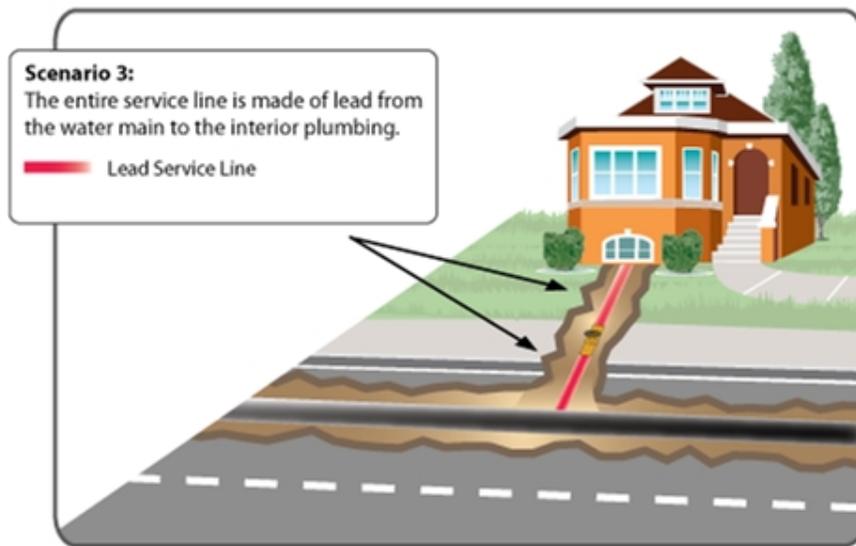
Scenario 1: Only the portion of the service line from the water main to the external shut-off valve or property line is made of lead, and the portion from the external shut-off valve or property line to the home is made of a different material, such as copper or galvanized iron pipe.



Scenario 2: The city may have replaced the portion of the lead service line from the water main to the property line or external shut-off valve to the property with another pipe material, and only the portion of the service line from the property line or external shut-off valve to the home is now lead.



Scenario 3: The entire service line from the water main to the home may be made of lead.



What do lead service lines look like?



Lead service lines are generally a dull gray color and are very soft. You can identify them easily by carefully scratching with a key. If the pipe is made of lead, the area you've scratched will turn a bright silver color. Do not use a knife or other sharp instrument and take care not to puncture a hole in the pipe.



Lead service lines can be connected to the residential plumbing using solder and have a characteristic solder "bulb" at the end, a compression fitting, or other connector made of galvanized iron or brass/bronze.



Lead service lines often end just inside the front or side wall of the home, but may extend further into the building as shown, where the lead service line comes out of the basement floor to the water meter and then back into the floor, continuing further into the building.



If your home has a water meter, your water meter may be in your home or in a "meter pit" or "meter vault".

Cleaning aerators

- Many taps have an aerator as part of the faucet assembly. Aerator screens are not intended to remove contaminants in the water, but may trap sediment or debris as water passes through the faucet. Lead-bearing sediment may end up in drinking water from physical corrosion of leaded solder and can build up in the aerator over time.



Step 1. Remove the aerator by twisting off with hands or pliers.



Step 2. One or more parts are contained within the aerator. Note the order and orientation of the parts as you remove them.



Step 3. Rinse the pieces with water and brush off the debris. For deposits that are difficult to remove, soak the parts in water for a few minutes and scrub with a toothbrush. Backwashing aerator components is also an effective cleaning method for many aerator types. Hold the removed aerator upside down under flowing water to backwash screens and mesh filters.



Step 4. Reassemble the aerator, screw it back onto the faucet and hand-tighten. If any parts are cracked or broken, replace them. If the washer has hardened it should be replaced.

Flushing Instructions

Flushing when the water has not been used for several hours

Whether or not you have a lead service line, whenever the water has not been used in the household for several hours, you should run the water to flush the lead out. The more time water has been sitting in your home's pipes, the more lead it may contain. This is true even if you do not have a lead service line because plumbing fixtures like faucets and valves can contain small amounts of lead. However, the amount of time you should run the water to flush the lead out depends on whether you have a lead service line or not.

How long to run the water if you do not have a lead service line

Running the water for 30 to 45 seconds at the kitchen tap should clear the lead from your household plumbing to the kitchen tap. If you have old (corroded) galvanized iron pipe in your home, it may take up to 1 minute to fully flush the tap. Once you have done this, fill a container with water and store it in the refrigerator for drinking and cooking throughout the day.

How long to run the water if you do have a lead service line

Flushing times can vary based on the length of your lead service line and the plumbing configuration in your home. The length of lead service lines varies considerably. If your home is set back far from the street, a longer flushing time may be needed to lower lead levels, which may not be a practical solution.

The results of the lead sampling study conducted in single-family homes with lead service lines showed that it could take 3 minutes of running the water to significantly reduce lead levels and it is not possible to clear all of the lead from the drinking water using flushing. There will always be some lead in the water. If you have old galvanized iron plumbing, lead can deposit in the corroded pipes and it can take up to 5 minutes of running of the water to significantly reduce lead levels.

In addition, flushing will vary with your household plumbing. Flushing one tap in the home in most cases does not clear lead from all of the household plumbing, because the water flows from the lead service line only to the faucets that are open, so running the water anywhere for 3-5 minutes will clear most of the lead from the lead service line, but depending on your household plumbing there may still be lead in the pipes and other taps in your home. You may need to flush the tap you are going to use water from for another 30-45 seconds to clear any remaining lead.

If you have a lead service line and you flush the tap you are going to use, such as the kitchen tap, for 3-5 minutes (or longer if instructed to do so by your water provider) this will clear most of the lead from the water.

To conserve water, instead of flushing the tap to be used for 3-5 minutes, take a shower or do a load of laundry. Either activity would clear most of the lead from the lead service line. However, taking a shower or doing a load of laundry will not flush the lead out of the entire interior plumbing. Flushing the kitchen or bathroom tap for additional 30-45 seconds after showering or doing a load of laundry will clear the rest of the plumbing to the kitchen or bathroom tap.

Another alternative to conserve water is watering the garden for 3 minutes using the outside tap, which will clear the high lead from within the lead service line. This will not clear any of the lead from the internal plumbing, so right after watering the garden, flush the kitchen or bathroom tap for an additional 30-45 seconds.

After you have flushed your plumbing, filling up a container of water and storing it in the refrigerator for drinking and cooking throughout the day will reduce your lead exposure.

When is flushing not recommended?

- If your lead service line is very long, flushing may not effectively lower lead levels.
- If your home has old (corroded) galvanized iron pipes, flushing may not be practical.

If the water flows slowly in your home and you have galvanized iron pipes, these pipes may be severely corroded inside. If you have a lead service line, the water may need to run for at least 5 minutes to significantly reduce lead levels, which may not be a practical solution for you, and you may wish to consider using a water filter that is certified to remove 'total lead'. Total lead includes lead that is dissolved in the water as well as lead particles that come loose from the plumbing.

Instructions for flushing out the particles and sediment following a disturbance to your lead service line

If you have a lead service line and your lead service is disturbed, lead in your drinking water can increase to dangerous levels and particles containing high levels of lead can become trapped in your home plumbing.

Avoid bringing the lead-containing particles and sediment into your home or to the tap you drink from by following these instructions whenever your lead service is disturbed.

Find the closest available tap to where the water comes into the home that is not used for drinking water (such as an outside hose bib, laundry sink or bathtub) to flush the lead-containing particles out of the plumbing. Fully open the cold water tap and let the water run for at least five minutes to flush the lead-containing particles out of the plumbing so that the particles and sediment do not enter the rest of your household plumbing. The key is to pick the closest faucet not used for drinking that would result in the least amount of particles and sediment coming into the home plumbing.

Collecting water samples

If you are having your water tested for lead, it's important that you collect water samples in a specific way to ensure accurate results. The sampling recommendations and instructions depend on whether you have a lead service line or not. Testing the water for homes with lead service lines is more complex than for homes without a lead service line, so there are different sampling instructions for each situation.

Contact the Dayton Water Quality Laboratory (**937-333-6030**) to ask a question, provide feedback, or report a problem.