

## GLWA Meeting Notes 10.11.19

There was not a quorum so nothing was voted on today, just discussion.

- By-Laws are still in the draft stage. A few points of discussion regarding the by-laws were:
  - o Suggestion was made to have an odd # for the council (currently set at 8/ 5 quorum)
  - o Public comment likely to be kept at the standard 3 minutes
  - o Will need to decide if they want to add a secretary to the council
- No chairperson or vice chairperson yet due to no quorum.
- Reviewed Lead & Copper Rule
- Reviewed GLWA's role
- Reviewed GLWA's public awareness campaign materials
  - o Focused on materials that explain how lead gets in the water & how to determine if your pipes at home are lead.
  - o GLWA is in the process of creating videos to use for their campaign. If a GLWA member needs help in creating videos specific to their communities GLWA has resources to help.

**Water Supply Advisory Council Work Group  
Meeting Agenda**

**October 11, 2019, 10:00 a.m. - 12:00 p.m.**

Westland City Hall

36300 Warren Road, Westland, MI



**Desired Outcomes**

- To conduct officer elections for the council
- To develop the GLWA Water Supply Advisory Council Bylaws

**1. Call to Order, Introductions & Why We Are Here**

**2. Water System Briefing – Current State**

**3. Public Awareness Campaign – Current State**

**4. Public Comment**

**5. Election of Chair and Vice-Chair**

**6. Development of Bylaws**

**7. Public Education**

**8. Meeting Adjourns**

**BY-LAWS FOR THE**  
**GREAT LAKES WATER AUTHORITY**  
**WATER SUPPLY ADVISORY COUNCIL**

Preamble: The Great Lakes Water Authority (GLWA) was created pursuant to Michigan Public Act 233 of 1955, as amended (being MCL 124.281 *et seq.* The GLWA Water Supply Advisory Council (GLWA WSAC) is formed pursuant to the recently revised Lead and Copper Rule (LCR) R 325.10410. This Rule requires utility-level water supply advisory councils. Water suppliers and water systems with more than 50,000 customers must create a Community Water Advisory Council. The council will advise the utility on communications related to lead in drinking water as well as other drinking water quality issues.

**ARTICLE 1**  
**General Powers and Duties**

Section 1. The GLWA WSAC shall be a public body formed to:

- (a) Develop plans for continuing public awareness about lead in drinking water, even when a lead action level is not exceeded;
- (b) Review public awareness campaign materials provided by the statewide Drinking Water Advisory Council to ensure the needs and interests of the community;
- (c) Advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded;
- (d) Advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement;
- (e) Assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area; and
- (f) Collaborate with local community groups to ensure that residents can be involved in efforts to educate the community about lead in drinking water.

**ARTICLE II**  
**Principal Address**

Section 1. The principal address of the GLWA WSAC shall be 735 Randolph, Detroit, Michigan 48226.

Section 2. The principal address may be changed by a vote of the GLWA WSAC.

**ARTICLE III**  
**GLWA WSAC Requirements**

Section 1. The GLWA WSAC shall be comprised of at least five members in the following manner and for the following terms of office:

- (a) At least one member shall be a local resident who does not formally represent the interests of any incorporated organization.

- (b) All members must have a demonstrated interest in or knowledge about lead in drinking water and its effects.
- (c) A Chairperson and any other officers will be appointed at the first meeting. A short explanation of what officer positions are being appointed shall be provided at the first meeting.
- (d) The GLWA WSAC shall determine the terms of service. The initial term of office shall be for two (2) years. Subsequent rotations shall be established by the GLWA WSAC.

Section 2. Any vacancy in office shall be filled by vote of the GLWA WSAC to complete the remainder of the unexpired term.

#### **ARTICLE IV** **Officers**

Section 1. The GLWA WSAC shall elect from among its members a Chairperson and a Vice-Chairperson.

Section 2. The GLWA WSAC may elect other officers as the GLWA WSAC considers necessary.

Section 3. The GLWA WSAC shall elect its officers at its first regularly scheduled meeting.

#### **ARTICLE V** **Chairperson**

Section 1. The Chairperson of the GLWA WSAC shall be its presiding officer. The Chairperson shall call meetings, set the agenda, and manage the meeting.

#### **ARTICLE VI** **Vice-Chairperson**

Section 1. In the absence or disability of the Chairperson, the Vice-Chairperson shall perform the duties of the Chairperson.

#### **ARTICLE VII** **Meetings and Voting**

Section 1. The GLWA WSAC shall conduct regular meetings as needed. The business of the GLWA WSAC shall be conducted at a public meeting of the GLWA WSAC held in compliance with the Michigan Open Meetings Act.

Section 2. A GLWA Representative shall be responsible for providing public notices of all meetings of the GLWA WSAC in accordance with the requirements of these By-Laws and other applicable laws.

Section 3. A GLWA Representative shall call the roll at each GLWA WSAC meeting and record the names of the GLWA WSAC members absent from the meeting.

Section 4. In the absence of the GLWA Representative at any meeting, the GLWA WSAC may designate a person, who shall record the proceedings of such meeting.

Section 5. At any meeting of the GLWA WSAC, four or more members of the GLWA WSAC shall constitute a quorum for the transaction of business. When a quorum is present, a majority of all members of the GLWA WSAC shall decide any question brought before such a meeting. A member may be deemed present for a

meeting if participating by conference call, video- conference, or other electronic means whereby the member can hear the proceedings and participate in the deliberations and votes. Participation in a meeting in this manner constitutes presence in person at the meeting for all purpose including determination of a quorum.

Section 6. The GLWA WSAC shall provide for a public comment period at its meetings, consistent with the requirements of the Open Meetings Act.

## **ARTICLE VIII** **Minutes and Records**

Section 1. The GLWA WSAC shall keep a written record of its proceedings and shall make those records available to the public in a manner that is consistent with the Michigan Freedom of Information Act, the Act, and the Articles of Incorporation.

Section 2. The GLWA WSAC meeting minutes must include the date, time, place, members present, members absent, any decisions made and the purpose for any closed session. The minutes must include all roll call votes taken at the meeting.

Section 3. Draft minutes must be available to the public within 8 days of the meeting.

Section 4. Approved minutes (with any corrections) must be available within 5 days of the meeting that approved them.

## **ARTICLE IX** **Amendments**

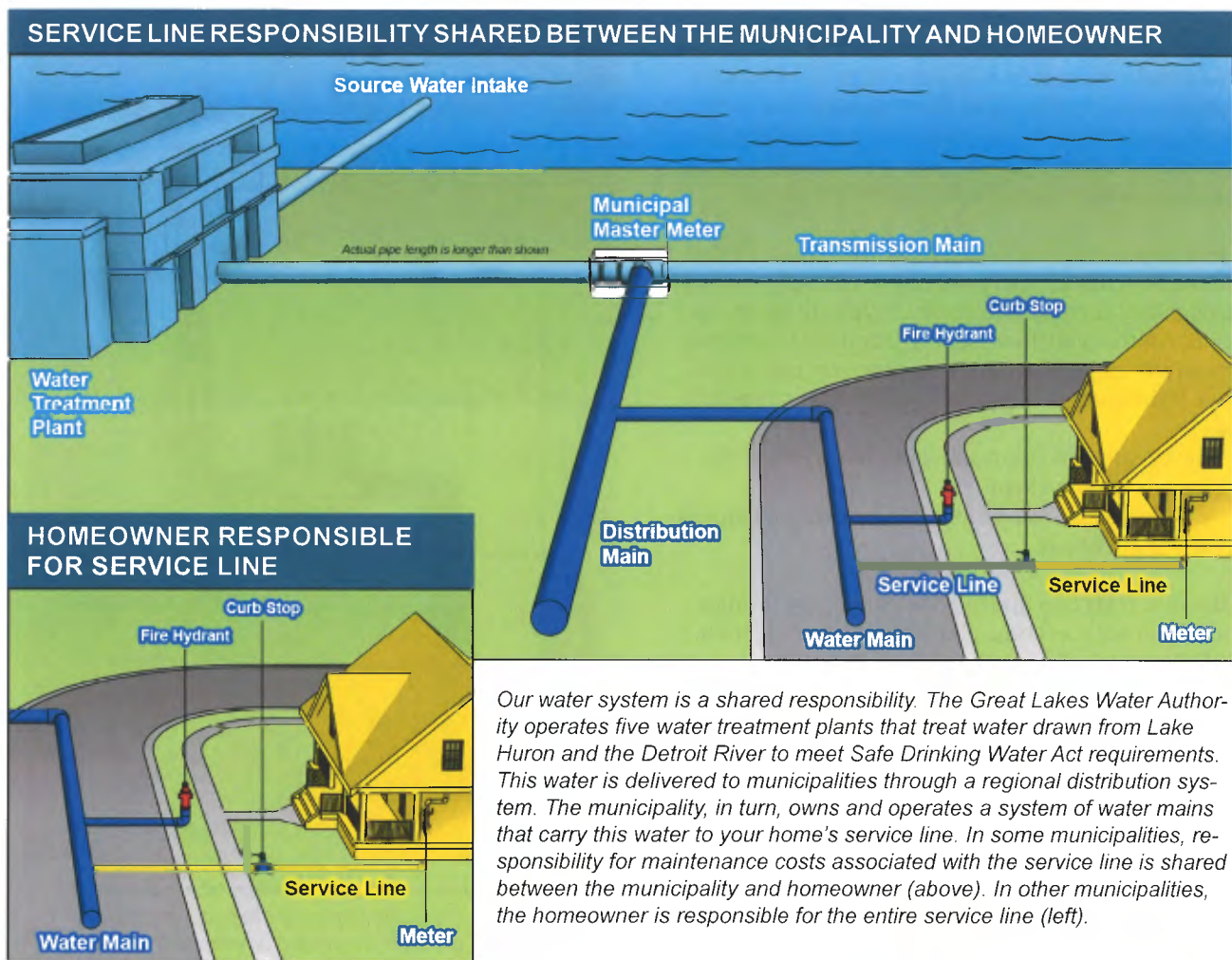
Section 1. These By-Laws may be amended at any meeting by a vote of at least four (4) members.

# SERVICE LINES AND PLUMBING FIXTURES

*Responses to Frequently Asked Questions about Lead and Copper in Water*

## 1. What is a service line and who is responsible for it?

A service line is the pipe that connects a home to the water main. Homeowner (property owner) responsibility for the service line varies by community. In some communities, the homeowner is responsible for the portion of the line from the curb stop in their yard, where the shutoff valve is, into their home. In other communities, homeowners may own the entire service line from the home to the water main connection. If you have a question about who owns which components of the water system, contact your local municipality.



- Great Lakes Water Authority
- Municipality
- Property Owner





## 2. How do I determine what material my service line is made of?

Service lines can be made of galvanized steel, lead, copper, or plastic. Local construction practices and ordinances impacted the type of pipe material used in communities at specific times. Local ordinances in the Detroit area began prohibiting the use of lead pipe in plumbing codes as early as 1947. Some communities used a small connector pipe made of lead, commonly called a gooseneck, to connect a galvanized steel service line to the water main. The presence of a lead gooseneck cannot be determined by examining plumbing in your home. If you are unsure about the type of service line at your home, contact your local municipality.

Two simple tests can be performed using a screwdriver and a magnet to help determine the service line material entering your home. Locate where the service line comes through the floor or wall into your home (see bottom right picture). This should be near your main water shutoff valve and water meter.

If you have a metal pipe below the first shutoff valve, use the flat edge of a screwdriver to carefully scratch through any corrosion that may have built up on the outside of the pipe. Place a magnet on the scratched area. If the magnet sticks to the pipe, it is galvanized steel. If the magnet does not stick and the scraped area is:

- shiny, silver in color, and looks like a nickel, the pipe is made of lead.
- copper in color and looks like a penny, the pipe is made of copper.

If the pipe feels like plastic, is white or gray in color, and joined with a clamp, glued or screwed together, it is plastic and no further tests are required.

## 3. How can I tell if my plumbing fixtures have lead or lead solder in them?

If your home was built before 1986, your home's plumbing likely contains faucets and pipes with some lead content and lead solder. Brass and chrome-plated brass faucets and fittings contain some lead. Brass fixtures and copper pipes can be joined with lead solder. From 1986 to 2014, brass faucets and fittings sold in the US that were labeled as "lead free" could contain up to 8% lead. In January 2014, the Reduction of Lead in Drinking Water Act redefined "lead free" as "not more than a weighted average of 0.25% lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures."

### PIPE MATERIALS USED IN SERVICE LINES



GALVANIZED STEEL



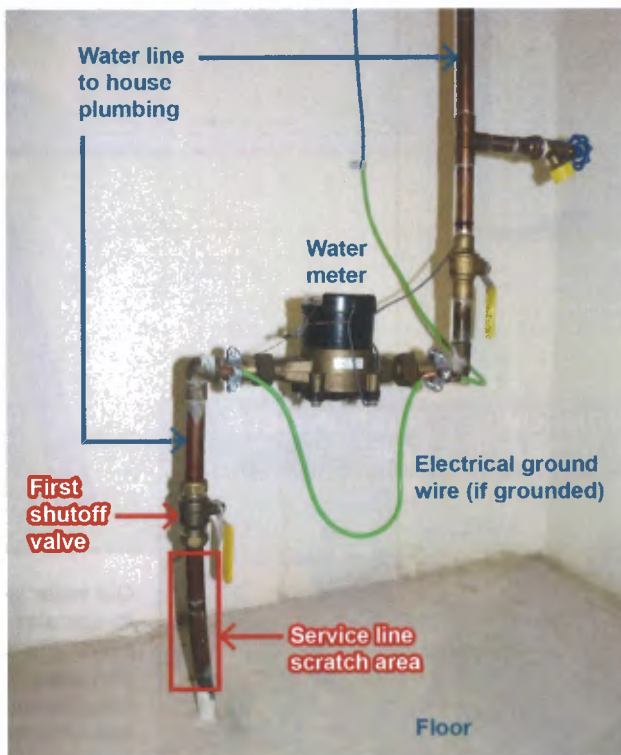
LEAD



COPPER



PLASTIC



Identify a test area on the pipe between where the service line comes into the home (typically the floor) and the first shutoff valve. If the pipe is covered or wrapped, expose a small area of metal. Follow instructions in response to Question 2 to determine the pipe material.

**NOTE:** The piping above the shutoff valve, known as the water line to house plumbing, should not be tested as it is likely made of a different material than the service line.

Consumers can increase their confidence level by purchasing products certified as meeting the Safe Drinking Water Act lead-free requirements. Information can be found at [www.nsf.org/newsroom\\_pdf/Lead\\_free\\_certification\\_marks.pdf](http://www.nsf.org/newsroom_pdf/Lead_free_certification_marks.pdf).

#### **4. Do I need to test my water for lead if I have a lead service line or plumbing with lead solder?**

Testing is the only way to confirm if lead is leaching from your plumbing into your drinking water. Samples are taken from the faucet that is normally used for drinking water.

If you are concerned, a lead test can cost between \$10.00 and \$75.00. A list of local certified drinking water chemistry laboratories that perform lead and copper testing can be found on the Michigan Department of Environmental Quality's website at [www.michigan.gov/egle/0,4561,7-135-3307\\_4131\\_4156-36940--,00.html](http://www.michigan.gov/egle/0,4561,7-135-3307_4131_4156-36940--,00.html). Some local communities offer lead testing for their residents. Contact your community for further direction and information. You can also contact your County Environmental Health Department.

Some laboratories report results in different units of measurement. Parts per billion (ppb), the detection level unit for lead, is the equivalent of micrograms per liter (ug/L).

#### **5. What should I do if my water quality results indicate a presence of lead?**

A measure of household consumer safety for acceptable lead levels in drinking water has not yet been determined. The USEPA has established a Maximum Contaminant Level Goal for lead of 0 ppb. Therefore, if your analytical results reveal a presence of lead, you may consider the following practices to minimize your exposure to lead:

- Running your water is a simple and inexpensive measure you can take to protect your family's health. Run your cold water for 30 seconds to 2 minutes any time the water in a faucet has gone unused for 6 hours or more, such as in the morning, when you've been away during the day, when you return from vacation, and when an individual tap in your home is not used regularly. Household water usage activities such as showering, washing clothes and running the dishwasher are effective methods for flushing the pipes.

**IF YOU HAVE QUESTIONS  
REGARDING YOUR  
SERVICE LINE, CONTACT  
YOUR MUNICIPALITY**



*Testing is the only way to confirm the presence of lead in your drinking water. Tests must be performed by a certified drinking water chemistry laboratory that will send you a sampling kit. A list of certified laboratories can be found on the Michigan Department of Environmental Quality's website.*

- Always use cold water for drinking, cooking, and preparing baby formula.
- If you have a lead service line, you should use a water filter for preparing baby formula. You may also choose to use a water filter for drinking and cooking, particularly if you are pregnant or have children under age 6. Make sure the filter meets the National Sanitation Foundation (NSF) standard 53 for lead removal. Follow the manufacturer's recommendations for replacement. Contact NSF International at 800-NSF-8010 or visit their website at [www.nsf.org](http://www.nsf.org) for more information.
- Remove and clean the faucet screen/aerator monthly.
- Consider replacing faucets installed prior to 2014.

Additional information can be found at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).





Always use cold water for drinking, cooking and preparing baby formula.

**6. If corrosion control is working, how can there still be higher levels of lead in the first draw sample in the morning, after water has sat in the pipe?**

Orthophosphate treatment is provided to reduce the amount of lead that can leach into your drinking water. It does not remove lead from the water but binds with the lead plumbing material, reducing the amount of lead dissolved in the water. The longer water is in contact with lead plumbing materials, the more likely lead will dissolve into the water.

**7. How do I flush my service line after it has been replaced?**

Homeowners and contractors should flush the service line and internal plumbing to reduce the amount of lead-containing particles and sediment entering the home immediately following work on lead service lines.

- Do not consume tap water, open hot water faucets, or use icemaker or filtered water dispensers until flushing is complete.
- Immediately after a lead service line replacement, flush the service line by running water from an available outside tap or from the inside cold water tap closest to where the service line enters the home. Flush the line at full flow for 30 minutes. If the cold water tap has an aerator (or screen), remove it prior to flushing, and rinse it free of debris prior to replacing it.

- After an initial flush of the replaced service line is complete:
  1. Remove faucet aerators from all cold water taps in the home.
  2. Beginning in the lowest level of the home, fully open the cold water taps throughout the home.
  3. Let the water run for at least 30 minutes at the last tap you opened (top floor).
  4. Turn off each tap starting with the taps in the highest level of the home. Be sure to run water in bathtubs and showers as well as faucets.

*From American Water Works Association's "Communicating About Lead Service Lines: A Guide for Water Systems Addressing Service Line Repair and Replacement."*

**8. Where can I go for help with my home's internal plumbing?**

Oakland County Community & Home Improvement Division

[www.oakgov.com/advantageoakland/residents/Pages/CPHADivision.aspx](http://www.oakgov.com/advantageoakland/residents/Pages/CPHADivision.aspx)

248-858-0493

Low and moderate income homeowners may qualify for an interest-free deferred payment loan to make needed home repairs, improve accessibility, and increase energy efficiency. Oakland County staff is with you all the way from helping you apply for the loan to overseeing all repair work and paying their pre-qualified contractors.

Macomb County Home Investment Partnership Act Program

[mca.macombgov.org/?q=MCA-CommunityDevelopment-HOME](http://mca.macombgov.org/?q=MCA-CommunityDevelopment-HOME)

Wayne County Home Investment Partnership Act Program

[www.waynecounty.com/hhs/home-program.htm#FirstTime](http://www.waynecounty.com/hhs/home-program.htm#FirstTime)

# DRINKING WATER QUALITY IN THE HOME

## *Responses to Frequently Asked Questions About Lead and Copper in Water*

### **1. What steps can I take to maintain drinking water quality in my home?**

Residents can take steps to protect water quality in your home. Actions that help to preserve water quality include:

- Use cold water for drinking and preparing food.
- Flush your tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than 6 hours. Flushing the tap means running the cold water for 30 seconds to 2 minutes until it gets noticeably colder.
- Clean faucet aerators and strainers monthly. Replace aerators in poor condition.
- Clean and disinfect sinks and faucets regularly.
- Replace your refrigerator and icemaker filters according to the manufacturer's recommendations.
- Replace any other water filters used according to the manufacturer's recommendations.

Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. When water stands in lead pipes or pipes with lead solder for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, may contain higher levels of lead.

Additional beneficial plumbing tips include:

- Drain and flush your hot water heater annually.
- Identify and replace plumbing fixtures containing lead. Brass faucets, fittings and valves may leach lead into drinking water. Products sold after January 4, 2014, must by law contain very low levels of lead.
- Be sure backflow protection devices are installed properly.

**IF YOU HAVE QUESTIONS  
REGARDING YOUR  
WATER QUALITY, CONTACT  
YOUR MUNICIPALITY.**



*Cleaning faucet aerators monthly and running cold water to flush a faucet that hasn't been used for 6 or more hours help preserve drinking water quality in your home.*

- Corrosion may be greater if grounding wires from the electrical system are attached to your pipes. Check with the licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

### **2. How do I flush my internal plumbing?**

The amount of time you should run the cold water to flush your internal plumbing depends on whether you have a lead service line, the length of the lead service line and amount of plumbing in your home. Running your cold water until it feels noticeably colder will indicate the water is from outside your premises' plumbing. Once that has occurred, flush an additional 1 to 2 minutes to ensure you are receiving water from the water main and not your service line.

Note: At one gallon per minute, a 2-minute flush for a 50-foot service line is the recommended standard.



### 3. How do I remove, clean and replace my faucet aerators?

Faucet aerators are used to provide a steady flow of water from the faucet with even pressure that prevents splashing and can reduce water usage. Aerators typically include a screen and rubber washer. The screen can become dirty collecting sediment and metals including particulate lead. Monthly cleaning of aerators is recommended. If the screen is in poor condition or damaged, it should be replaced. Hardware stores sell replacement parts.



To clean your aerator:

1. Unscrew the aerator housing. New faucets frequently come with a tool to remove the aerator.
2. Separate the aerator into individual rubber washer and screen parts (if possible).
3. Remove any sediment (mineral or rust build up) on the screen and other parts. If necessary, soak the parts in white vinegar for a few minutes and scrub with a brush.
4. Reassemble the aerator parts and re-attach to faucet (using tool if necessary).

### 4. Can construction activity in my neighborhood affect my drinking water?

Yes, when the ground is disturbed close to your home, particles can shake free from inside the network of underground pipes including your service line. Having a lead service line can increase your risk of exposure to lead when the ground is disturbed. Particulate lead is like tiny grains of sand. These tiny pieces can fall off the sides of pipes into the water. It can cause the lead level in water to go up quickly and then go back down. During construction and until your lead service line is replaced, you should take the following precautions.

- Clean your faucet aerator at least monthly. Lead particles can build up on the aerator screen so cleaning them is important.
- Flush your tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than 6 hours. Flushing the tap means running the cold water for 30 seconds to 2 minutes until it gets noticeably colder.
- Use a filter when drinking or cooking particularly if you are pregnant or have children under the age of 6. A filter is especially important if you are making baby formula. Make sure the filter meets the

National Sanitation Foundation (NSF) standard 53 for lead removal. Follow the manufacturer's recommendations for replacement. Contact NSF International at 800-NSF-8010 or visit their website at [www.nsf.org](http://www.nsf.org) for more information.

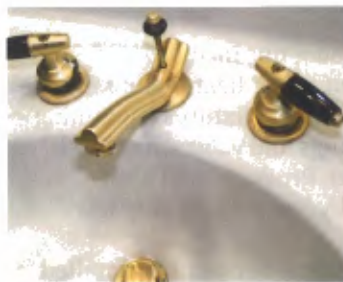
- Do not boil water to remove lead. Boiling will not remove lead.

### 5. What is the difference between particulate lead and soluble lead?

Soluble lead is lead that dissolves in water. Corrosion control treatment using orthophosphate reduces the amount of soluble lead in water by creating a protective layer inside the pipe.

Particulate lead is the size of tiny grains of sand. These tiny pieces can fall off the sides of pipes into the water. It can cause the lead level in water to spike and drop suddenly. Construction activity in your neighborhood can increase the risk of particulate lead, especially when the ground is disturbed close to your home.

- Use a filter if you are concerned about particulate lead. Make sure the filter you purchase is designed to remove both particulate and soluble lead, and replace the filter cartridge as recommended by the manufacturer.
- Clean your aerator at least monthly or more frequently on all your faucets since lead particles can build up on the aerator screen when construction activity is close to your home.



*Consider replacing old plumbing fixtures made of brass or that contain lead. Products sold after January 4, 2014, must by law contain very low levels of lead.*



*Sediment, bacteria, minerals and metals can build up in your hot water heater tank. This can impact household water quality and water pressure. Drain and flush your hot water tank annually. See "How to Flush Your Hot Water Heater Tank" information sheet.*



# HOW TO FLUSH YOUR WATER HEATER TANK

Sediment, bacteria, minerals and metals can build up in your water heater tank. This can impact household water quality and water pressure. Depending on your water heater tank, flushing the tank annually is recommended to maintain performance. To protect the life of your water heater, we recommend following the manufacturer's instructions for flushing. It is important to keep in mind that 30 to 75 gallons of hot water will be lost during the flushing process.

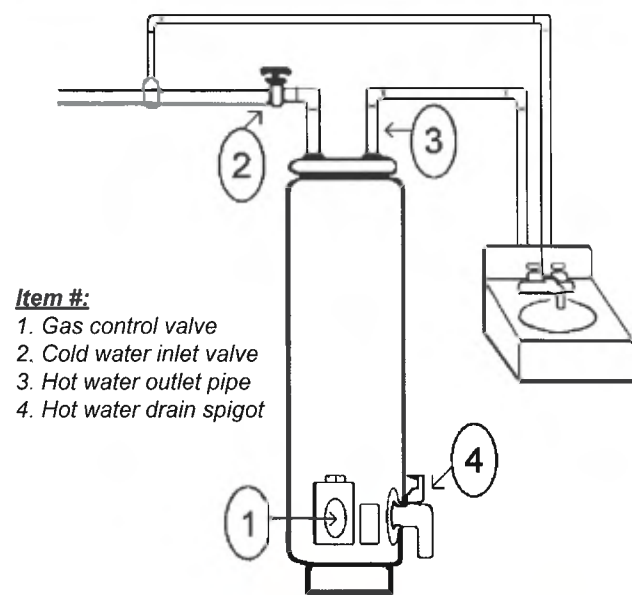
## To flush the tank:

1. Take note of the position of your gas control valve (Item 1 in Figure) so that it may be reset to the same position when the task is completed.
2. **Set your gas control valve to the pilot or off position.** *(This is important: If the burner control is left on while the tank is empty and/or being emptied and the flame comes on, the heat will ruin the tank. You may want to use up the hot water either with a load of clothes or some other means like a shower or dishes before you continue.)*
3. Shut off the cold water inlet valve (Item 2) leading to the tank.
4. Open a hot water faucet anywhere in the home. This will let air into the tank while it is draining.
5. Attach a short garden hose to the hot water drain spigot (Item 4) and run it to a floor drain.
6. Open up the hot water drain spigot (Item 4) and empty the tank. This may take several minutes.
7. When the tank is drained, leave the hot water drain spigot (Item 4) open, turn on the cold water inlet valve (Item 2) in 15-second bursts and wait for it to drain after each burst. Three bursts should do the job.
12. The gas control valve (Item 1) can be turned back to its usual setting as noted in step 1 and follow the water heater manufacturer's instructions for lighting the gas pilot if the tank does not have an automatic pilot.

This process must be completed in this order (burner off, hot water faucet open, etc.) or damage can result from heat, vacuum, pressure or water damage to the tank, faucets, pipes and/or finished floor.

After a period of time, you may find some deterioration of the washer in the hot water drain spigot and it may need to be replaced if the spigot drips after closing. Plumbers often will cap the spigot with a garden hose cap found at hardware stores to prevent dripping.

## Standard Water Heater Tank



## To fill the tank:

8. Close the hot water drain spigot (Item 4) and remove the hose.
9. Leave the hot water faucet open (from step 4 above).
10. Turn on the cold water inlet valve (Item 2) leading to the tank until water comes out of the hot water faucet (from step 4 above) in a steady stream.
11. Shut off the hot water faucet (from step 4 above).



# SOURCES OF LEAD AND COPPER AND HEALTH EFFECTS

*Responses to Frequently Asked Questions about Lead and Copper in Water*

## 1. How does lead get into drinking water?

Drinking water provided by the GLWA to your community does not contain lead. Lead may enter drinking water as a result of the corrosion or wearing away of materials in the water distribution system and household plumbing that contain lead. These materials can include lead-based solder, brass and chrome-plated brass faucets and fixtures, lead goosenecks and lead service lines connecting homes to water mains. Corrosion control practices reduce the risk of lead leaching from pipes by creating a protective film or coating inside the pipe. Orthophosphate has been used to control corrosion in the GLWA service area since 1996.

## 2. What are the major sources of lead exposure?

Lead exposure can come from paint, dust, water or soil contaminated with lead. According to the CDC, lead-based paint is the most widespread and dangerous high-dose source of lead exposure for young children. Lead was used in household paint until 1978 leaving lead contamination in homes and surrounding soils. Leaded gasoline, used until the mid-1980s, has also contributed to increased lead levels in soil. Local ordinances in the Detroit area began prohibiting the use of lead pipe in new construction as early as 1947. The use of lead pipes, solder and flux that was not "lead free" was banned nationwide in 1986.

Prior to 2014, "lead free" household plumbing fixtures could contain up to 8% lead. In January 2014, "lead free" was redefined as a weighted average of 0.25% lead. Lead can leach from these pipes and fixtures when corrosive water runs through them, hence the need for corrosion control additives. Water consumption is estimated to contribute, on average, about 10-20% of a child's total lead intake, and for infants fed formula, 40-60% of their lead exposure (Rabin, 2008).



*Children under the age of 6 are most susceptible to the effects of lead. In homes with lead service lines or plumbing, water consumption can contribute about 10-20% of a child's total lead intake.*

## 3. What health problems are associated with lead exposure?

Lead can affect almost every organ and system in your body. Children under the age of 6 are most susceptible to the effects of lead. According to the United States Environmental Protection Agency (USEPA), "Even low levels of lead in the blood of children can result in behavior and learning problems, lower IQ, hyperactivity, slowed growth, hearing problems and anemia." Pregnant women are at particular risk from lead exposure that can result in reduced fetus growth, stillbirth (Troesken, 2006; Edwards, 2014); and premature birth. Adults can suffer from cardiovascular effects, decreased kidney function and reproductive problems.

Contact your physician if you are concerned about lead exposure. Additional information on the health effects of lead can be found on the USEPA's website at [www.epa.gov/lead/learn-about-lead](http://www.epa.gov/lead/learn-about-lead).





#### **4. *How does copper get into drinking water?***

Like lead, copper can leach out of plumbing materials if corrosive water flows through the pipe. The protective coating created by the addition of orthophosphate can reduce the risk of copper leaching from pipes.

#### **5. *What health problems are associated with copper exposure?***

Copper is an essential nutrient. "Short term exposure to copper levels above the action level in drinking water can cause gastrointestinal distress. Long term exposure can cause liver or kidney damage. People with Wilson's disease should consult their personal doctor if the amount of copper in their water exceeds the action level." Wilson's disease is an inherited condition that causes the body to retain excess copper. Persons with Wilson's disease may be at a higher risk of health effects than the general public.

From USEPA's website at [www.epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants](http://www.epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants).

#### **6. *Where can I find lead and copper health effects information?***

Information about the health impacts of lead can be found on the Centers for Disease Control and Prevention's website at [www.cdc.gov/nceh/lead](http://www.cdc.gov/nceh/lead).

Other information about lead is available at [www.michigan.gov/egle](http://www.michigan.gov/egle).

A public health statement for copper can be found on the Agency for Toxic Substances & Disease Registry's website at [www.atsdr.cdc.gov/phs/phs.asp?id=204&tid=37](http://www.atsdr.cdc.gov/phs/phs.asp?id=204&tid=37).

THE WATER THAT GLWA  
DELIVERS TO YOUR  
COMMUNITY DOES NOT  
CONTAIN LEAD. LEAD CAN  
LEACH INTO DRINKING  
WATER THROUGH HOME  
PLUMBING FIXTURES, AND  
IN SOME CASES, CUSTOMER  
SERVICE LINES.