



## ***Public Advisory for Drinking Water Customers***

In 2018, the Michigan Safe Drinking Water Act's Lead and Copper Rule was changed to better protect your health. New water sampling rules have been added to better detect possible lead in your drinking water. These changes require communities with lead service lines to do more sampling. This new sampling method was expected to result in higher lead results, not because the water source or quality for residents has changed, but because the act has more stringent sampling procedures and analysis.

The City of Lapeer has been conducting testing of tap water in homes with lead service lines for lead and copper in accordance with this Act since 1992.

In September, 2019 the City collected samples from 20 single family residential properties with known lead services lines. A "service" is the pipe that connects the home/building to the public water main. Out of approximately 3,461 total water customers in the City and neighboring townships, we estimate there are approximately 2% (roughly 70 customers) with lead service lines. Currently, through home inspections we have identified 27 customers with lead service lines, less than 1%. Three (3) of the twenty (20) homes within our sample group tested exceeded the Action Level of 15 parts per billion (ppb). Michigan Department of Environment, Great Lakes and Energy (formally known as MDEQ) evaluates lead and copper compliance with the Action Level base on the 90<sup>th</sup> percentile of the 20 lead and copper samples collected in September. As a result of the testing under the new law and method of testing, the lead 90<sup>th</sup> percentile for the City of Lapeer is at 19 ppb, which exceeds the Action Level of 15 ppb. This does not mean every customer has elevated lead levels. An Action Level exceedance means that more than 10% of the samples tested under the new testing method have elevated lead levels. The City had three (3) within our sample group of twenty (20) locations with known lead service lines reported as elevated. These three (3) lead services were replaced with copper within a month of being notified of the elevated test results.

The "Action Level" is not a health-based standard, but it is a level that triggers additional actions including, but not limited to, increased investigative sampling of water quality, additional lead sampling of our customer base, and educational outreach to our customers. The City of Lapeer would like to share some ways you can reduce your exposure to lead. Lead can cause serious health problems if too much enters your body from drinking water that is carried through your home with lead plumbing, fixtures, lead service lines, and/or other sources.

Below are some recommended actions to help reduce lead exposure. Lead can enter drinking water when in contact with pipes, solder, home/building interior plumbing, fittings and fixtures that contain lead. Homes constructed before 1960 are more likely to have lead service lines. Plumbing solder for drinking water was lead until it was banned in 1986. Between 1996 and 2014 plumbing fixtures contain up to eighty percent (80%) lead but were labelled "lead-free." Houses with lead service lines have an increased risk of having high lead levels in drinking water. The longer water has been sitting in your homes' pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. Additional flushing may be required for homes that have been vacant or have longer services lines.

- **Run your water to flush out lead-containing water.**
  - If you **do not** have a lead service line, run the water for 30 seconds to two (2) minutes, or until it becomes cold or reaches a steady temperature.
  - If you **do** have a lead service line, run the water for at least five (5) minutes to flush water from the plumbing of your home and the lead service line.
  
- **Consider using a filter to reduce lead in drinking water. The Michigan Department of Health and Human Services recommends that any household with an infant, young child or pregnant woman use cold water and a certified lead filter to remove lead from their drinking water, especially when preparing baby formula.**
  - Look for filters that are tested and certified to NSF/ANSI Standard 53 for lead reduction.
  - Be sure to maintain and replace the filter device in accordance with the manufactures instruction to protect water quality.
  - If your household has a child or pregnant woman and are not able to afford the cost of a lead filter, the City of Lapeer, on Wednesday, November 20<sup>th</sup>, between the hours of 12:00 PM to 7:00 PM at Lapeer County Health Department, Lower Level, 1800 Imlay City Road, Lapeer, Michigan 48446, will be providing one lead filter system at no cost for those that qualify.
  
- **Do not use hot water for drinking, preparing food, cooking, or preparing baby formula.**
- **Do not boil** your water as boiling will not reduce the amount of lead in water.
- Clean your faucet aerator to remove trapped debris.
- Check whether your home has a lead service line. You can contact the City's Department of Public Works to have a staff member visit your home to identify the water line service material at no charge by calling 810-664-4711.
- Anyone with health-related questions can contact Lapeer County Health Department at 810-667-0391.

As part of the State's compliance requirement, the City of Lapeer will soon provide a comprehensive public education document with additional information about lead in drinking water. We will be collecting forty (40) samples every six (6) months and reviewing the results to determine if corrective actions are necessary to reduce corrosion in household plumbing.

If you are a City of Lapeer water customer and have or think you may have a lead service line to your home and would like to verify your water service line, you can contact the City's Department of Public Works at 810-664-4711 to have a staff member visit your home, at no charge, to inspect your water service line. EGLE publishes a list of state laboratories that are certified for lead testing at [www.michigan.gov/EGLElabs](http://www.michigan.gov/EGLElabs).

Additional information regarding the new regulation and lead safety can be found on the City of Lapeer website at <https://www.ci.lapeer.mi.us> Lead and Copper or on the EGLE website at [www.michigan.gov/deqleadpublicadvisory](http://www.michigan.gov/deqleadpublicadvisory).

Thank you for your attention to this important matter.

# **Michigan Safe Drinking Water Act**

2018 Lead and Copper Rule

**What's changed?**

Who provides the City of Lapeer drinking water?

- Great Lakes Water Authority (GLWA)
- They are in the top ten in producing quality water, in the world

## City of Lapeer Water System

<b>WATER SYSTEM</b>	<b>FLINT</b>	<b>Lapeer</b>
<b>Changed Source Water</b>	<b>YES</b>	<b>NO</b>
<b>Changed Treatment of Water System</b>	<b>YES</b>	<b>NO</b>

## LEAD AND COPPER RULE & TESTING

- ❑ Michigan Safe Drinking Water Act 399 enacted in 1976 to protect the public health.
  - ❑ New Michigan Lead and Copper Rules enacted in June 2018.
  - ❑ City of Lapeer conducted their first lead and copper samples under the new rule in September of 2019.
  - ❑ There has been no change to the water supply, but the sampling process did change.
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## 2018 Lead and Copper Rule

- ❑ The purpose of the Lead and Copper Rule is to protect the public health by minimizing lead and copper levels in drinking water.
- ❑ Lead and copper enter drinking water mainly from corrosion of plumbing materials containing lead and copper.
- ❑ Lead services were common in homes constructed before 1960; in 1986 lead solder was no longer allowed and between 1996 & 2014 fixtures contained up to 80% lead but were labelled “lead-free”.
- ❑ New Lead and Copper Rules included a stringent sample program.
- ❑ The lead and copper sampling procedure is a five bottle draw vs. the old rule of one bottle draw and the number of samples was increased for the City of Lapeer from 5 to 20.

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## TARGETED REVISION: NEW SAMPLING REQUIREMENTS AND METHODS

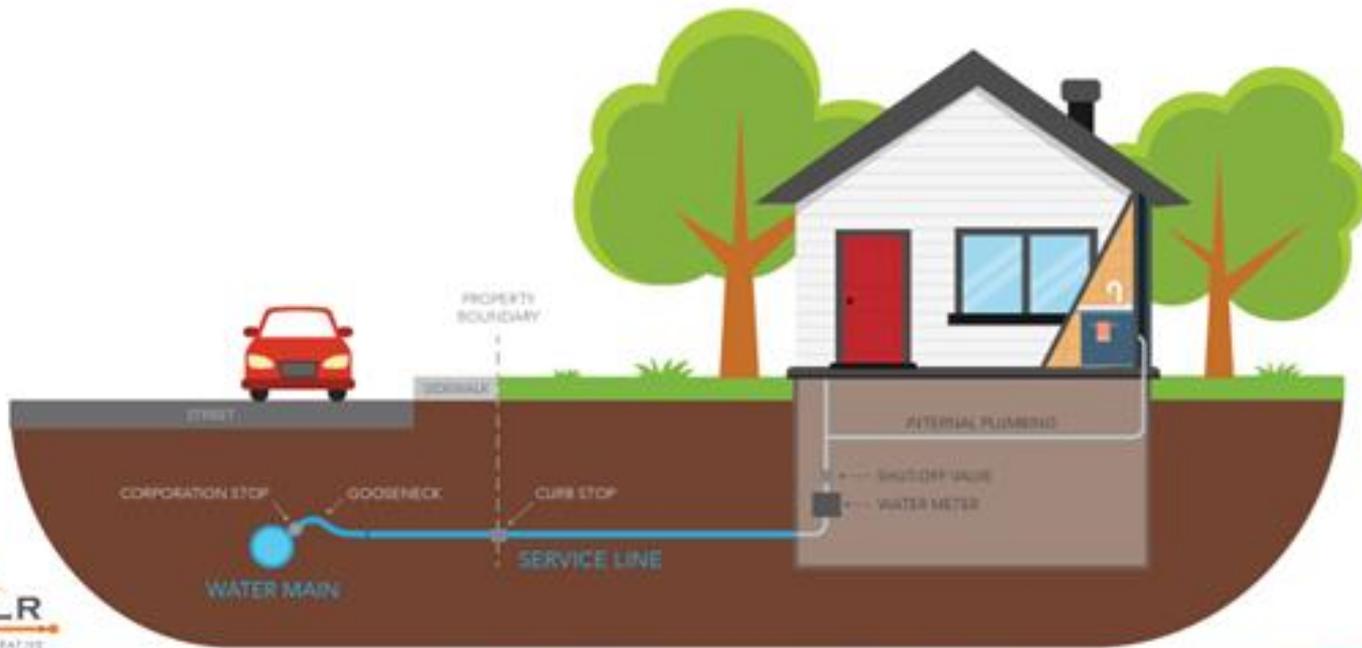


### WHAT'S NEW?

- Water supplies must sample at buildings with lead service lines or lead pipes before sampling at buildings with other service line or plumbing materials.
- Before, water supplies were required to test only the first liter of water collected from a tap. Now, water supplies will test both the first and fifth liters of water collected from lead service line homes.

For more details, visit the University of Michigan Lead and Copper Rule Frequently Asked Questions page at [myumi.ch/JgG1g](https://myumi.ch/JgG1g)

# Service Line Diagram



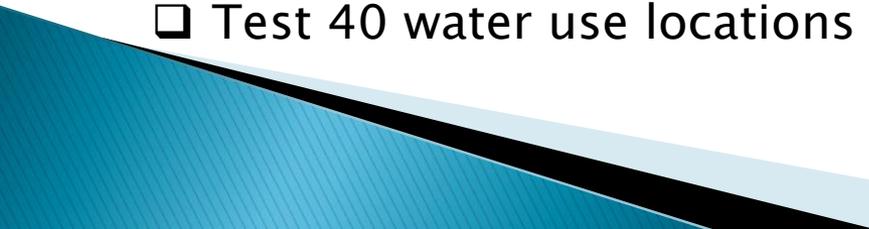
# 90<sup>th</sup> Percentile

- ❑ The Lead and Copper Rule establishes Action Levels (AL) for lead and copper based on the 90<sup>th</sup> percentile level of tap water samples.
- ❑ An Action Level exceedance is not a violation but a trigger for other requirements to minimize exposure to lead and copper in drinking water, included are the following components:
  1. Water quality parameter monitoring
  2. Corrosion control treatment
  3. Sources water monitoring/treatment
  4. Public education
  5. Lead service line replacement
- ❑ All community water supplies are subject to the 2018 new lead and copper requirements.
- ❑ The Action Level is not a health based standard but triggers a call to action.

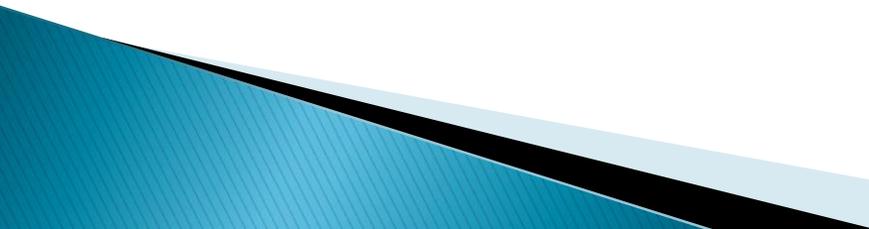
# Michigan's Lead and Copper Rule

- ❑ State Action Level is any sample that exceeds 15 parts per billion (ppb).
  - ❑ City of Lapeer 90<sup>th</sup> percentile is 19 ppb.
  - ❑ City of Lapeer had 20 sample locations with lead service lines.
  - ❑ Three (3) lead service lines had levels of 15 ppb or higher.
  - ❑ The twenty (20) samples taken had a range of 0 to 32 ppb. 32 ppb was at a vacant home.
  - ❑ The City of Lapeer DPW replaced all three (3) lead services that exceeded the limits within a month of receiving the notice from the Michigan Department of Environment, Great Lakes, and Energy (EGLE).
  - ❑ The City of Lapeer's current Lead and Copper sample results is not a violation of the Safe Drinking Water Act.
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# Lead and Copper Rule Testing, once notified by EGLE

- ❑ City of Lapeer officials notified on November 14, 2019.
  - ❑ Completed a conference call held on November 15<sup>th</sup> with persons from the Lapeer County Health Department, DHS, EGLE and the City of Lapeer.
    1. Required to send out a Public Advisory within three days.
    2. If your household has a child or pregnant woman and are not able to afford the cost of a lead filter and meet the qualifications, a free filter will be offered through the Lapeer County Health Department:
      - November 20<sup>th</sup>
      - 12:00 pm to 7:00 pm
      - 1800 Imlay City Road, Lapeer MI 48446
      - Lower level
  - ❑ Conduct Public Education Advisory by November 28, 2019 and continue an education campaign.
  - ❑ Test 40 water use locations every 6 months.
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## Lead and Copper Rules – Why do we care about lead?

- ❑ Biggest concern is young children, infants and pregnant women who are typically more vulnerable to lead in drinking water than the general population.
  - ❑ If present, elevated levels of lead can cause serious health problems.
  - ❑ Lead can leach into your water when your water has been sitting for several hours in your home service line and plumbing.
  - ❑ If you do not have a lead service line, you can minimize the potential for lead exposure by running your tap for 30 seconds to 2 minutes before using water for drinking or cooking.
  - ❑ If you do have a lead service line, you can minimize the potential for lead exposure by running your tap for 5 minutes or more before using water for drinking or cooking.
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# Sources of Lead in Drinking Water

Copper pipe  
With lead solder

Lead service line



Faucets/fixtures

Galvanized pipe

Lead goose neck

## PIPE MATERIALS USED IN SERVICE LINES



**GALVANIZED STEEL**



**LEAD**



**COPPER**



**PLASTIC**

# Michigan Lead and Copper Rule

## REQUIREMENTS UNDER THE NEW RULE:

- ❑ January 1, 2020 – each municipality must have a completed inventory of all lead service lines in the community to report to EGLE and notify all affected properties.
- ❑ January 1, 2020 – Sampling pools must be reviewed and updated based on current inventory for future testing. Start sampling 40 locations.
- ❑ January 1, 2021 – Each municipality must have a plan to address all remaining lead service lines annually, 5% to 7% minimum.
- ❑ January 1, 2025 – Action Levels are reduced from 15 ppb to 12 ppb for future water sample testing.
- ❑ January 1, 2041 – Communities must have all lead service lines replaced.

## City of Lapeer Inventory to date:

- ❑ The City has approximately 3,461 water customers.
- ❑ The City has identified 27 lead service leads, which is less than 1% of the City of Lapeer's water customers.
- ❑ We estimate that there are 70 or less lead service lines within our customer base, which is approximately 2% of our customer base.
- ❑ Roughly 98 % to 99% of our customers do not have lead service lines.

Visit our website for additional information

[www.ci.lapeer.mi.us](http://www.ci.lapeer.mi.us) and the State of Michigan's website @

[www.michigan.gov/deqleadpublicadvisory](http://www.michigan.gov/deqleadpublicadvisory)

Call the City of Lapeer's Department of Public Works if you would like a staff member to visit your home, free of charge, to determine if you have a lead service line by calling at 810-664-4711.



# Michigan's Public Health Response to a Public Water Supply Lead Action Level Exceedance

Presented by:



# Topics

This presentation outlines the following:

- Michigan Department of Health and Human Services Lead Response
- Steps to Reduce Lead in Drinking Water
- More Information

# Public Health Assistance for Residents on a water supply with a lead action level exceedance

## **Requirement 1: Must meet both**

- Household receives water from water supply with a lead action level exceedance
- Individual and the individual's household has NOT received a water filter from water supply, local health department, or the Michigan Department of Health and Human Services

## **Requirement 2: Must meet at least one**

- A child under 18 lives at the address
- A child under age 18 frequently spends time at this address (“Frequently” if a resident of the household provides care for at least several days per week for a few hours per day over three or more months per year.)
- A pregnant woman lives at the address

## **Requirement 3: Must meet at least one**

- A person receiving WIC benefits or Medicaid insurance lives at this address
- A person can't afford a filter and replacement cartridges (filters cost about \$35 and replacement cartridges cost about \$15.)

# Outreach and Education



Awareness

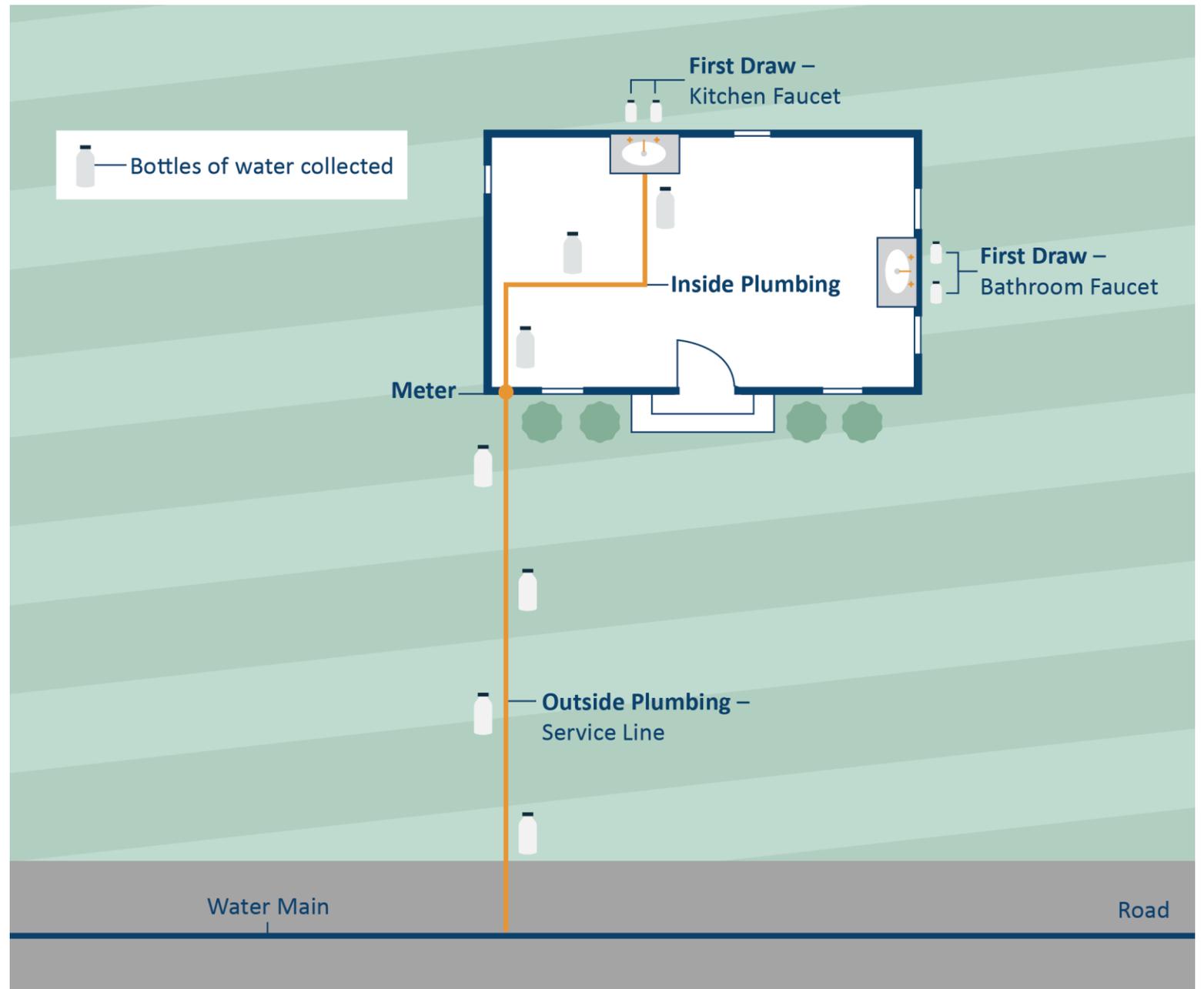


Recommendation



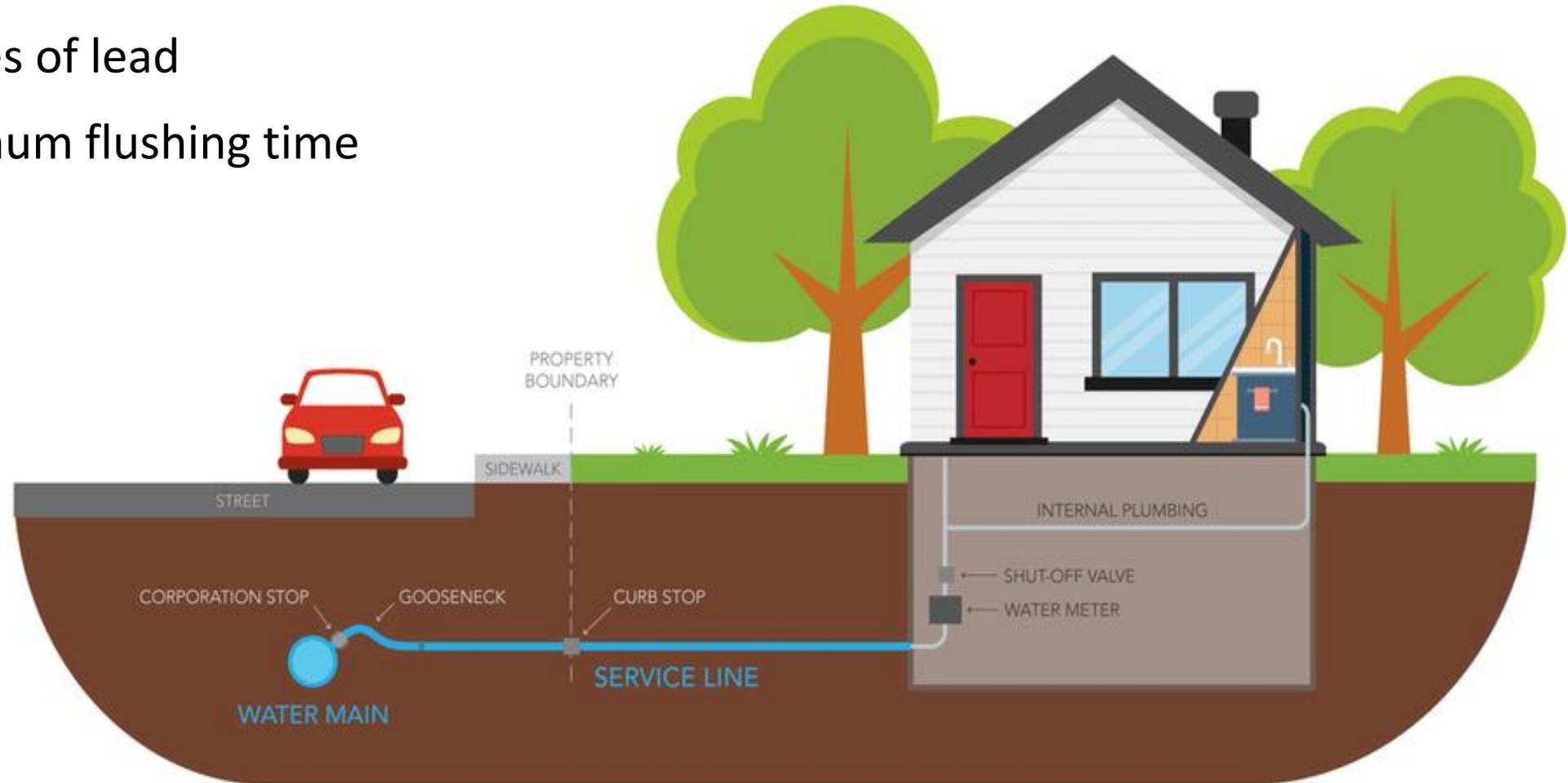
Accessibility

# Sequential Sampling



# *How are water test results being used?*

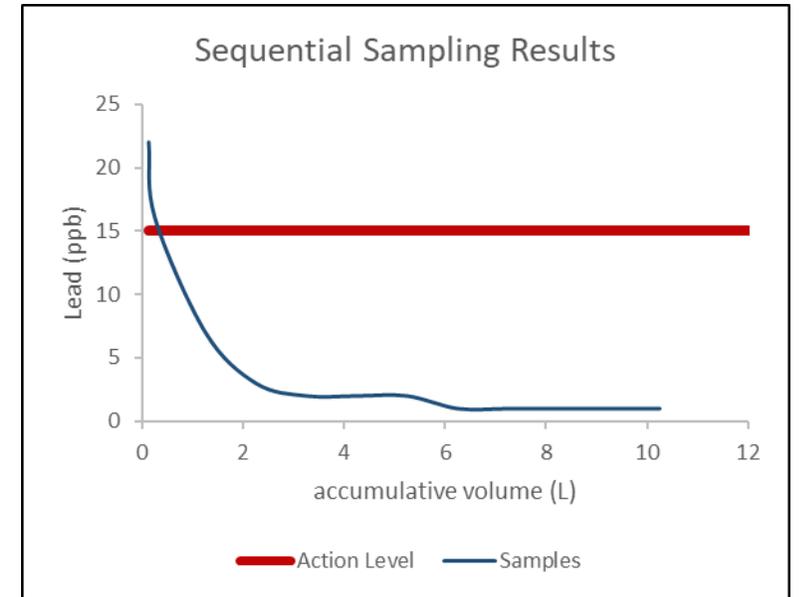
- Identify sources of lead
- Identify maximum flushing time



# Sequential Sampling Water Test Results Example 1

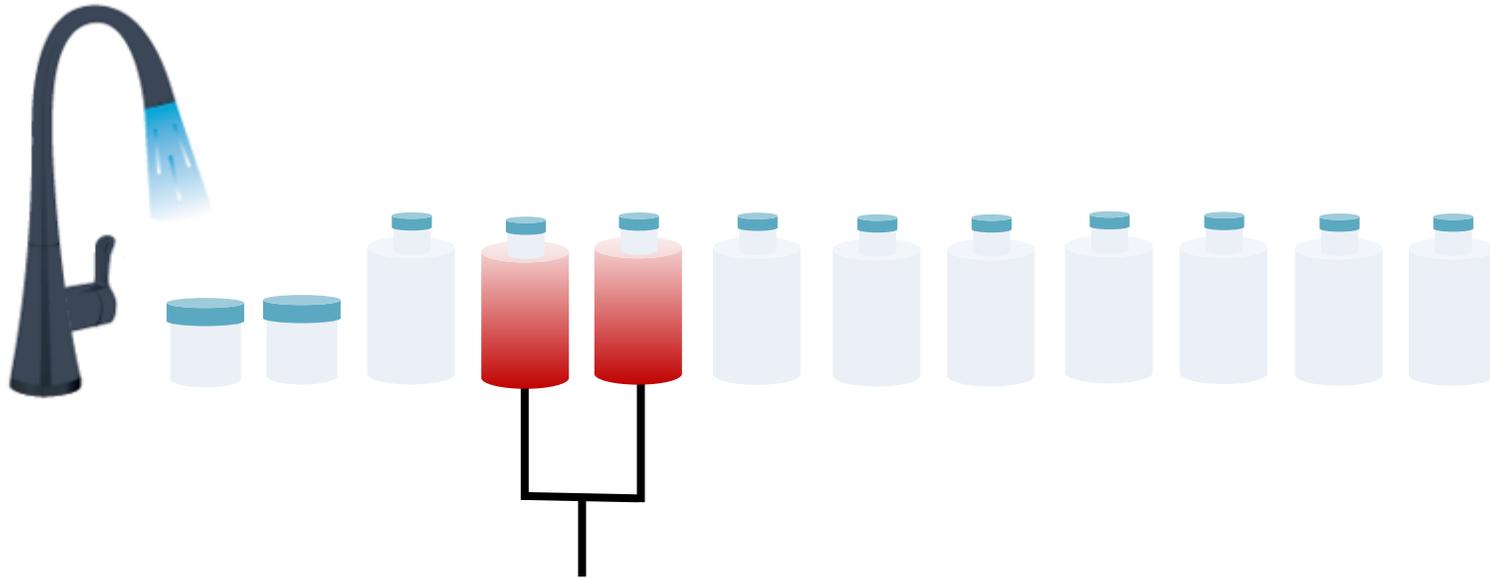


Sample Result = Higher than the 15 ppb (action level)

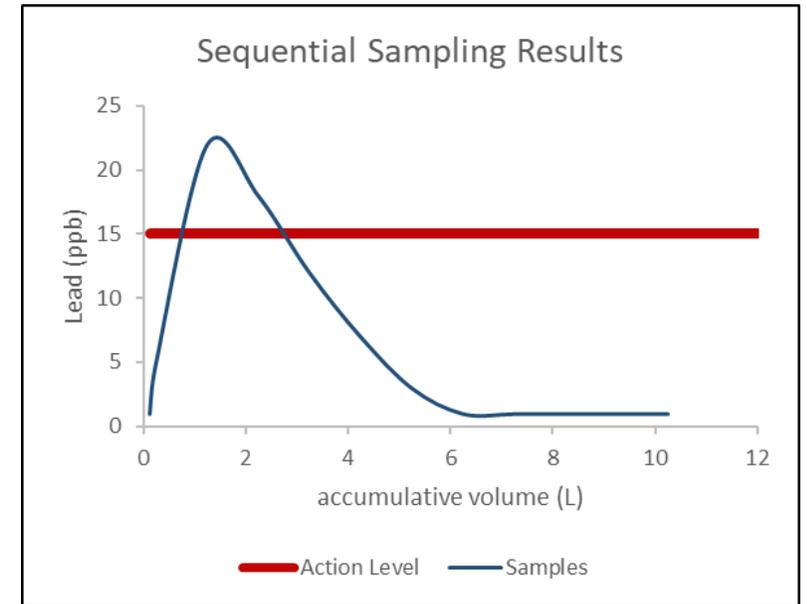


**Lead in Faucet**

# Sequential Sampling Water Test Results Example 2

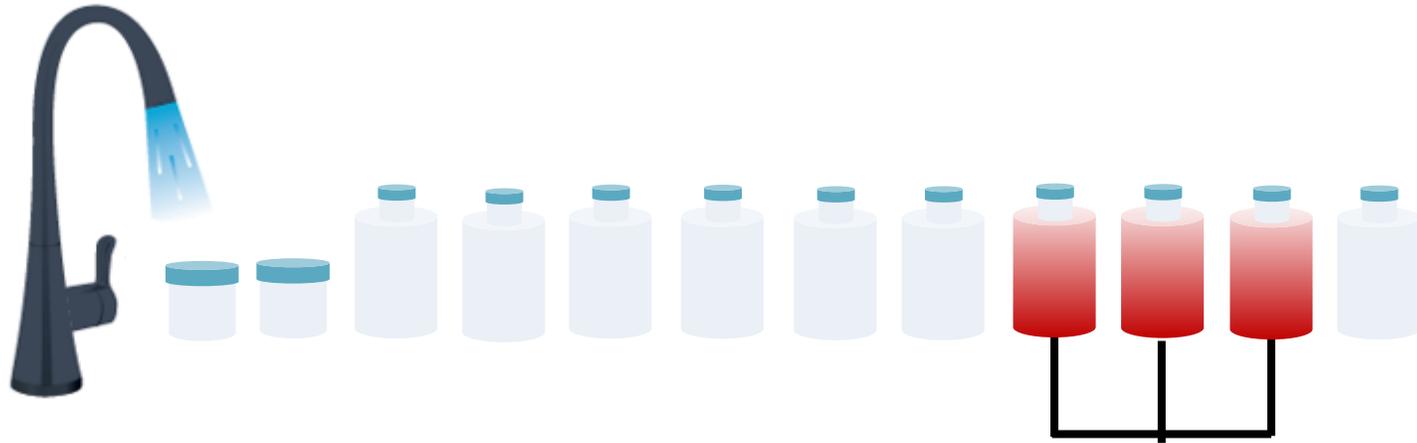


Sample Result = Higher than the 15 ppb (action level)

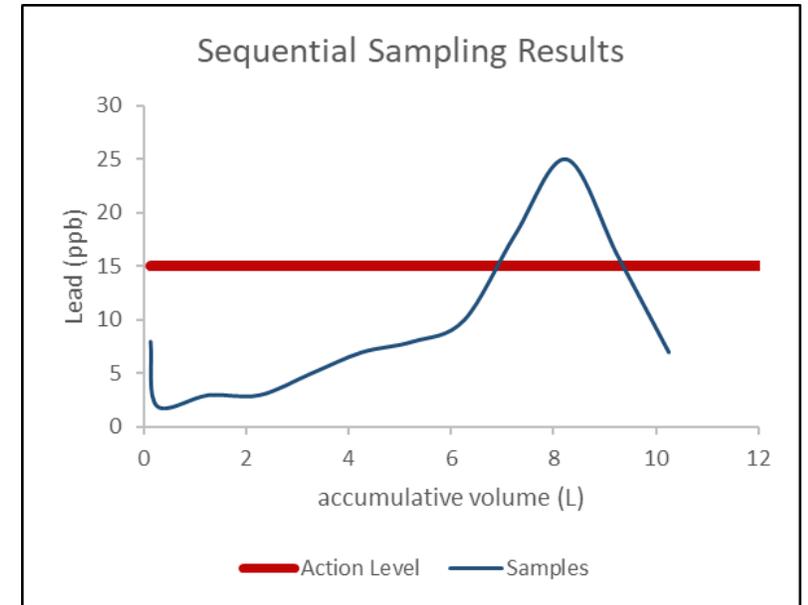


**Lead in inside plumbing**

# Sequential Sampling Water Test Results Example 3



Sample Result = Higher than the 15 ppb (action level)



**Lead in Service Line**

# Steps to Reduce Lead in Drinking Water

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- Flush pipes
- Use a water filter certified for lead reduction
- Clean faucet aerators
- Replace older plumbing, pipes, and faucets that may add lead to water
- Do not use hot water for drinking or cooking
- Don't try to remove lead by boiling the water

# More Information

Visit [Michigan.gov/MiLeadSafe](https://www.michigan.gov/MiLeadSafe) to learn more about lead.

**Mi Lead Safe**

LEAD & YOUR HEALTH | DRINKING WATER | PAINT & DUST | SOIL | HOUSEHOLD ITEMS & IMPORTED GOODS | JOBS & HOBBIES

**BREAKING NEWS**

Michigan Safe Drinking Water Virtual Town Hall Recording Now Available!

[View Town Hall Recording](#) (recorded July 10, 2019)

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) hosted three Michigan Safe Drinking Water Virtual Town Halls July 9-11, 2019. The town halls provided information to residents on sampling that is being done in communities throughout Michigan to test for lead in drinking water. Each town hall included a presentation by staff in EGLE and the Michigan Department of Health and Human Services (MDHHS) and included time to answer questions submitted online. The same information was presented in each town hall. This is a recording of the town hall hosted on July 10. More information is available at [www.michigan.gov/MiLeadSafe](https://www.michigan.gov/MiLeadSafe).

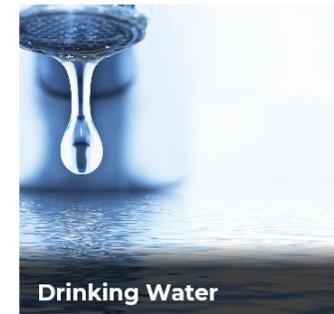
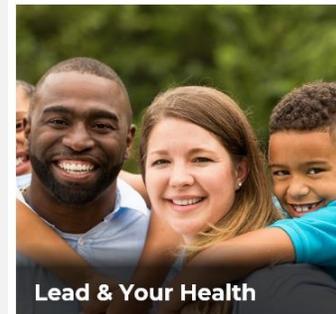
**PROTECT YOUR LOVED ONES FROM LEAD**

Every Michigander deserves safe, clean drinking water. To protect its residents, Michigan has adopted the strictest Lead and Copper Rule in the nation. This rule strengthens our ability to detect lead in drinking water and will help protect your family's health.

Michigan is committed to protecting the public from lead exposure by working together with families and local communities to reduce or eliminate all sources of lead in the home. When lead is swallowed, it can cause health problems, especially in children. By creating the strongest drinking water lead testing and service line removal rules in the country, Michigan is on track to reduce and get rid of lead drinking water pipes.

While lead in drinking water is concerning, lead can also come from **other sources**. Exposure to lead-based paint chips and dust, as well as soil with higher levels of lead, are most often to blame when it comes to having elevated levels of lead in the body. In addition to community testing results, this website will help you

**HOW CAN I PROTECT MYSELF FROM LEAD IN WATER?**



# Contact



**Michigan Department of Health and Human Services**

800-648-6942 ask for the Drinking Water Investigation Unit



**Michigan Department of Environment, Great Lakes,  
and Energy**

800-662-9275

## 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.

## 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**



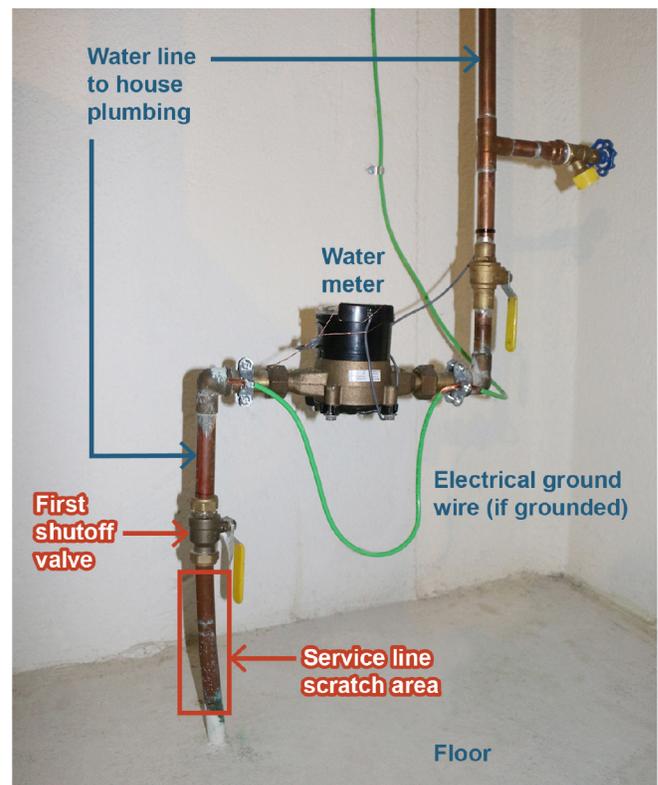
**LEAD**



**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 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.

# REDUCING POTENTIAL LEAD EXPOSURE FROM DRINKING WATER

## Guidance

**Check if your home has a lead service line.** Homes with lead service lines have a higher risk of having high lead levels in drinking water. Please contact your water supply for more information.

**Run your water before drinking.** The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. Additional flushing may be required for homes that have been vacant or have a longer service line.

- If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
- If you **do** have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.

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*Running your water before you drink it does not mean you need to waste water.*

*You can run your water by flushing a toilet, watering your lawn or indoor plants, doing laundry, or even washing a load of dishes.*

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**Do not boil water to remove lead.** Boiling will not remove the lead.

**Use cold water for drinking and cooking.** Do not cook with or drink water from the hot water tap. Lead dissolves more easily into hot water.

**Use cold water for preparing baby formula.** Do not use water from the hot tap to make baby formula. If you have a lead service line, consider using bottled water or a lead-reducing filter to prepare baby formula.

**Clean your faucet aerator.** As part of routine maintenance, the aerator on the end of your faucet should be removed at least every six months to rinse out any debris that may include particulate lead.

**Consider using a water filter.** Read packaging to find a filter that meets NSF/ANSI Standard 53 for the reduction of lead. Be sure to maintain and replace the filter device in accordance with the manufacturer's instructions to protect water quality.

**Consider replacing older plumbing fixtures that likely contain lead.** Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead.

**Flush your cold-water pipes after long periods of non-use.** If you are moving into a new home or apartment or residence that has been unoccupied for some time, you should run all faucets an extended period of time, five minutes or more, before using any water for drinking or cooking.

**Learn about your drinking water.** Read your community's Consumer Confidence Report that is mailed to you each year or find it at your local water utility's website. If you wish to get your drinking water tested, call your water supply or use a certified lab. To find a certified lab, go to the Michigan Department of Environment, Great Lakes, and Energy home page, [Michigan.gov/DrinkingWater](https://www.michigan.gov/DrinkingWater) and search "certified lab list."

# REDUCIR LA EXPOSICIÓN POTENCIAL AL PLOMO DEL AGUA POTABLE

## Guía

**Compruebe si su casa tiene una línea de servicio de plomo.** Los hogares con líneas de servicio de plomo tienen un mayor riesgo de tener altos niveles de plomo en el agua potable. Comuníquese con su proveedor de agua para obtener más información.

**Deje correr el agua antes de beberla.** Cuanto más tiempo haya permanecido el agua en las tuberías de su hogar, más plomo puede contener. Por lo tanto, si su agua no se ha utilizado durante varias horas, deje correr el agua antes de usarla para beber o cocinar. Esto elimina el agua que contiene plomo de las tuberías. Es posible que se requiera lavado adicional para las casas que han estado vacías o que tienen una línea de servicio más larga.

- Si **no tiene** una línea de servicio de plomo, deje correr el agua durante 30 segundos a dos minutos, o hasta que se enfríe o alcance una temperatura constante.
- Si usted **tiene** una línea de servicio de plomo, deje correr el agua al menos cinco minutos para hacer que al agua salga del interior de las tuberías de la casa y de la línea de servicio de plomo.

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*Dejar correr el agua antes de beberla no significa que deba desperdiciar agua.*

*Puede dejar correr el agua en el inodoro, regar el césped o las plantas de interior, lavar la ropa o incluso lavar una gran cantidad de platos.*

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**No hierva el agua para eliminar el plomo.** Hervir no quitará el plomo.

**Use agua fría para beber y cocinar.** No cocine ni beba agua del grifo de agua caliente; El plomo se disuelve más fácilmente en agua caliente.

**Considere usar agua fría para preparar la fórmula para bebés.** No use agua del grifo caliente para hacer la fórmula para bebés. Si tiene una línea de servicio de plomo, considere usar agua embotellada o un filtro reductor de plomo para preparar la fórmula para bebés.

**Limpie su aireador de grifo.** El aireador en el extremo de su grifo debe retirarse al menos una vez al mes para eliminar cualquier residuo que pueda incluir plomo en partículas.

**Use un filtro de agua.** Lea el empaque para encontrar un filtro que cumpla con el estándar 53 de NSF / ANSI para la reducción de plomo. Asegúrese de mantener y reemplazar el dispositivo de filtro de acuerdo con las instrucciones del fabricante para proteger la calidad del agua.

**Considere reemplazar los accesorios viejos de plomería que probablemente contengan plomo.** Los grifos, accesorios y válvulas más antiguos vendidos antes de 2014 pueden contener niveles más altos de plomo, incluso si están marcados como "sin plomo". Los grifos, accesorios y válvulas que se venden después de enero de 2014 deben cumplir una definición más restrictiva de "sin plomo", pero Todavía puede contener hasta un 0,25 por ciento de plomo. Al comprar nuevos materiales de plomería, es importante buscar materiales que estén certificados según la norma NSF / ANSI 61.

**Vacíe las tuberías de agua fría después de largos períodos de inactividad.** Si se muda a una nueva casa o apartamento o residencia que ha estado desocupada durante algún tiempo, debe abrir todos los grifos durante un período prolongado de cinco minutos o más antes de usar agua para beber o cocinar.

**Aprenda sobre su agua potable.** Lea el Informe de Confianza del Consumidor de su comunidad que se le envía por correo cada año o encuéntralo en el sitio web de su compañía de agua local. Si desea que se analice su agua potable, llame a su proveedor de agua o use un laboratorio certificado. Para encontrar un laboratorio certificado, vaya a la página de inicio del Departamento de Medio Ambiente, Grandes Lagos y Energía de Michigan, [Michigan.gov/EGLE](http://Michigan.gov/EGLE) y busque "lista de laboratorios certificados".

# A Consumer Tool for Identifying Point of Use (POU) Drinking Water Filters Certified to Reduce Lead

## POINT OF USE FILTERS

Point of use, or POU, drinking water filters are used to remove impurities from water at the point that it is actually being used. Although there are others, the POU filters covered in this document are those used in filtration systems that are attached directly to water faucets, inserted into refrigerators for water dispensers and ice makers, or inserted into water pitchers and bottles.

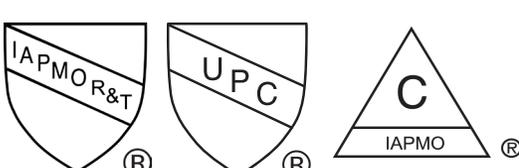


### How do I know if a POU filter has been certified to reduce lead?

There are several American National Standards Institute (ANSI) accredited third-party certification bodies that evaluate POU drinking water filters for lead reduction. Each has a registered trademark that is used on certified products.

Certification bodies require their mark and a statement indicating testing against **NSF/ANSI Standard 53 along with a claim of lead reduction.**  
We recommend that you also look for filters tested against **NSF/ANSI Standard 42 for particulate reduction (Class I)\*.**

The table below provides the certification bodies' approved marks and the text that indicates a filter has been certified for lead reduction capabilities. Some filters can be certified by more than one certification body and have multiple certification marks.

Certification Mark(s)	
 <p>Product Listing Directory: <a href="http://info.nsf.org/Certified/DWTU/">info.nsf.org/Certified/DWTU/</a></p>	 <p>Product Listing Directory: <a href="http://wqa.org/Find-Products#/">wqa.org/Find-Products#/</a></p>
 <p>Product Listing Directory: <a href="http://pld.iapmo.org/">pld.iapmo.org/</a></p>	 <p>Note: For UL, text must be located underneath the mark. The File No. is a unique product identification number.</p> <p>Product Listing Directory: <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.html">database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.html</a></p>
 <p>Product Listing Directory: <a href="http://csagroup.org/testing-certification/product-listing/">csagroup.org/testing-certification/product-listing/</a></p>	<p><b>Text for NSF/ANSI Standards 42 &amp; 53 next to certification marks:</b></p> <ul style="list-style-type: none"> <li>• Example text on packaging: <i>Tested and Certified by (name of certification body) against NSF/ANSI Standards 42 and 53 for the claims specified on the Performance Data Sheet.</i></li> <li>• Some companies may indicate lead removal in the text, or might simply state NSF/ANSI 53 or NSF/ANSI 42 above or below the mark.</li> </ul>

### Is certification required for POU drinking water filters?

There is no mandatory federal requirement for the use of POU drinking water filters or for testing or third-party certification under the Safe Drinking Water Act. However, consumers can increase their level of confidence by purchasing filters that have been tested by an accredited third-party certification body or bodies for lead reduction and particulate reduction (Class I) capabilities against both NSF/ANSI Standards 42 and 53.

\*Although particulate reduction (Class I) is for aesthetic effects, it is being suggested since some particulates can contain lead.

# Certification Marks, Standards Text, and Claims of Reduction on Filter Packaging

Certification marks are detailed in the Table on Page 1. Examples of certification marks, NSF/ANSI Standards 42 and 53 text, and claims of lead reduction and particulate reduction (Class I) as found on product packaging are shown below.

**Certification Mark on Packaging**

**Claim of Lead Reduction on Packaging**

**Example Text for Standards 42 & 53 Next to Certification Mark**

**Claim of Particulate Reduction (Class I) on Packaging**

**Certifier's Mark**

System Tested and Certified by *(name of certification body)* against NSF/ANSI Standards 42 and 53 for the reduction of the claims specified on the Performance Data Sheet.

Sistema Probado Certificado por *(nom de l'organisme de certification)* según las Normas 42 y 53 NSF/ANSI para la reducción de lo afirmado específicamente en la Hoja de Datos Rendimiento.

**WHAT WE FILTER OUT**

- Heavy metals
- Taste and Odor
- Particulates
- Industrial pollutants
- Pharmaceuticals
- Industrial chemicals
- Mercury, Lead, Cadmium
- Chlorine
- Particulate I
- Asbestos, Benzene
- Estrone, Ibuprofen, Naproxen
- Bisphenol A, Nonyl Phenol

## Where are the certification marks and Standards text located?

The certification marks can be found on the filter or on the smallest container in which the filter is packaged. NSF/ANSI Standards 42 and 53 text will be located under or near a certification mark. If lead reduction and particulate reduction (Class I) are not specifically mentioned in the text, information can be found in a table on the packaging, on the performance data sheet located inside the filter packaging or on the manufacturer's website, or in the certifier's online product listing directory (see links in the table on Page 1).

## Performance Data Sheet Inside Filter Packaging or on Websites

Claims of lead reduction and particulate reduction (Class I) not included on the filter packaging can typically be found on the performance data sheet located inside the filter box or other packaging (example below), or on the manufacturer's website.

**Claim of Lead Reduction**

**Claim of Particulate Reduction (Class I)**

SUBSTANCE	Overall Percent Reduction	Influent Challenge Concentration	U.S. EPA Level*/NSF Maximum Permissible Product Water Concentration
<b>NSF/ANSI Standard 53 – Health Effects</b>			
Lead pH 6.5	99.5%	150±15 ppb	10 ppb
Lead pH 8.5	99.6%	150±15 ppb	10 ppb
Mercury pH 6.5	95.5%	6±0.6 ppb	2 ppb
Mercury pH 8.5	95.9%	6±0.6 ppb	2 ppb
Cadmium pH 6.5	97.4%	30±3 ppb	5 ppb
Cadmium pH 8.5	99.2%	30±3 ppb	5 ppb
Benzene	93.5%	15±1.5 ppb	5 ppb
Asbestos	> 99%	5500000±45000000 Fibers/L	99%*
<b>NSF/ANSI Standard 401 – Emerging Compounds/Incidental Contaminants</b>			
Bisphenol A†	95.5%	2000±400 ppt	300 ppt
Estrone†	96.4%	140±28 ppt	20 ppt
Ibuprofen†	94.9%	400±80 ppt	60 ppt
Naproxen†	96.4%	140±28 ppt	20 ppt
Nonyl phenol†	93.5%	1400±280 ppt	200 ppt
<b>NSF/ANSI Standard 42 – Aesthetic Effects</b>			
Chlorine	97.4%	2.0±0.2 ppb	50%*
Particulate Reduction Class I	99.6%	> 10000 particles/mL	85%*

\* NSF Minimum Percent Reduction Requirement.  
† Valid for the following systems: Ultramax Jet Black (OB24), Space Saver (OB21), Amalfi (OB32), Grand Color Series (OB36), Pacifica (OB41), Capri (OB43), Mini Plus (OB44), Marina (OB47), Monterey (OB50), and Wave (OB53).  
These systems have been tested according to NSF/ANSI 401 (for applicable systems), 42 and 53 for reduction of the substances listed. The concentration of each of the indicated substances in water entering the systems was reduced to a concentration less than or equal to the permissible limit for water leaving the systems, as specified in NSF/ANSI 401, 42 and 53.

## Additional Information

- EPA's Lead in Drinking Water Website: [epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water](http://epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water)
- Understanding NSF/ANSI Standard 53: [workingpressuremag.com/understanding-nsf-ansi-53/](http://workingpressuremag.com/understanding-nsf-ansi-53/)

## Questions?

- For questions about a filter: *Contact the product manufacturer or see the product listing directories listed on the first page.*
- For questions about this document: *Send an email to [latham.michelle@epa.gov](mailto:latham.michelle@epa.gov) or [shah.manthan@epa.gov](mailto:shah.manthan@epa.gov).*

# PARTICULATE LEAD IN DRINKING WATER

## Guidance

Lead results can vary between tests. You may have turned in many water samples for lead testing and gotten very different results for each. This document will help to explain why there may be such a difference.

## TYPES OF LEAD IN DRINKING WATER

There are two different types of lead that can be present in drinking water, soluble lead and particulate lead.

### Soluble Lead

Soluble lead is the lead that dissolves in water because of the chemical reaction between water and plumbing that contains lead. Water supplies use corrosion control to limit the amount of lead that dissolves in water. Corrosion control is generally the addition of a chemical called orthophosphate to the water, which creates a protective layer inside the pipes. Regular water use in your home helps coat the pipes as water containing orthophosphate moves through the pipes.

### Particulate Lead

Particulate lead is like tiny grains of sand but is actually dislodged scale and sediment released into the water from plumbing. Disturbances, like replacing a water meter, construction, excavation activities, or home plumbing repair, increase the risk of particulate lead released by causing particulates to shake free from pipes and plumbing. Particulate lead is a concern because the lead content can be very high. Levels of particulate lead can vary between samples. A lead particulate could be present in a single glass of water, but not present in water sampled just before or after.

## WHAT YOU CAN DO

### Consider Using a Properly Certified Water Filter

When selecting a filter, it is important to know that your filter can remove both types of lead. Read packaging to find a filter that meets NSF/ANSI Standard 53, for the reduction of lead, and 42, for particulate (Class I). See example to the right. Be sure to maintain and replace the filter device in accordance with the manufacturer's instructions to protect water quality.

been tested and certified by the WQA in models OB21, OB32 (Amalfi), OB36 (Color Series), OB41, OB43 (Capri), OB44 (Mini Plus), OB47, OB50 and OB53 against **NSF/ANSI Standards 42 and 53** for the reduction of lead, cadmium, mercury, benzene, chlorine (taste & odor), particulate (Class I) and asbestos.



### Clean Your Aerators

As part of routine maintenance, the aerator on the end of your faucet should be removed at least every six months to rinse out any debris that may include particulate lead. During construction activity, check your aerator more often. Start by checking it weekly. If no debris is present, decrease to monthly checks until construction is complete.

### Watch For Construction Activities

Take note of any construction taking place near your home. When the ground is disturbed close to your home, it can increase the chance that lead particles can shake free from inside your pipes in the ground. If you see construction nearby, check your filters, clean your aerators and flush (run) the water in your home on a regular basis.

# PLOMO PARTICULADO EN EL AGUA POTABLE

## Orientación

Los resultados para el plomo pueden variar entre pruebas. Puede haber entregado varias muestras de agua para un análisis de plomo y haber obtenido distintos resultados para cada una. Este documento ayudará a explicar por qué puede existir dicha diferencia.

## TIPOS DE PLOMO EN EL AGA POTABLE

Hay dos tipos diferentes de plomo que pueden estar presentes en el agua potable, el plomo soluble y el plomo particulado.

### Plomo Soluble

El plomo soluble es el plomo que se disuelve en el agua debido a la reacción química entre el agua y tuberías que contienen plomo. Los suministros de agua usan el control de corrosión para limitar la cantidad de plomo que se disuelve en el agua. Por lo general, el control de corrosión es la incorporación de un químico que se llama ortofosfato al agua, el cual crea una capa de protección dentro de las tuberías. El uso regular del agua en su hogar ayuda a recubrir las tuberías, ya que el agua que contiene ortofosfato se mueve a través de las ellas.

### Plomo Particulado

El plomo particulado es como diminutos granos de arena, pero en realidad es sarro y sedimento desprendido que se libera de las tuberías e ingresa al agua. Las alteraciones, como reemplazar un medidor de agua, construcción, actividades de excavación, o reparaciones domésticas de tuberías, incrementan el riesgo de que se libere plomo particulado al causar que las partículas se suelten de las tuberías y cañerías. El plomo particulado es una preocupación porque el contenido de plomo puede ser muy alto. Los niveles de plomo particulado pueden variar entre muestras. Una partícula de plomo puede estar presente en un solo vaso de agua, pero no estar presente en el agua que se analizó justo antes o después.

## LO QUE USTED PUEDE HACER

### Considere usar un Filtro de Agua Debidamente Certificado

Cuando seleccione un filtro, es importante que sepa que su filtro puede eliminar ambos tipos de plomo. Lea el empaque para encontrar un filtro que cumpla con el Estándar 53 NSF/ANSI, y 42, para la reducción de plomo y material particulado (Class I). Ver ejemplos a la derecha. Asegúrese de mantener y reemplazar el dispositivo de filtración de acuerdo con las instrucciones del fabricante para proteger la calidad del agua.

been tested and certified by the WQA in models OB21, OB32 (Amalfi), OB36 (Color Series), OB41, OB43 (Capri), OB44 (Mini Plus), OB47, OB50 and OB53 against **NSF/ANSI Standards 42 and 53** for the reduction of lead, cadmium, mercury, benzene, chlorine (taste & odor), particulate (Class I) and asbestos.



Ha sido analizado y certificado por el WQA en los modelos OB21, OB32 (Amalfi), OB36 (Serie a Color), OB41, OB53 comparándolo con los **Estándares 42 y 53 NSF/ANSI** para la reducción de plomo, cadmio, mercurio, benceno, cloro (sabor y olor), material particulado (Clase I) y asbesto.



### Limpia tus Aireadores

Como parte del mantenimiento de rutina, el aireador debe retirarse al menos cada seis meses para eliminar cualquier residuo que pueda incluir partículas de plomo. Durante la actividad de construcción, revise su aireador más a menudo. Comience por revisarlo semanalmente. Si no hay residuos presentes, redúzcalos a verificaciones mensuales hasta que se complete la construcción.

### Pendiente de Actividades de Construcción

Tome en cuenta cualquier obra de construcción que se esté llevando a cabo cerca de su hogar. Cuando se perturba el terreno cerca de su hogar, puede incrementar la probabilidad de que se suelten partículas de plomo que están dentro de sus tuberías en el suelo. Si ve que están construyendo cerca, revise sus filtros, limpie sus aireadores y drene (deje correr) el agua en su hogar regularmente.

# WHAT CHANGED WITH MICHIGAN'S 2018 LEAD AND COPPER RULE?

Prior to the adoption of the new Michigan Lead and Copper Rule in June 2018, Michigan's requirements were consistent with the federal Lead and Copper Rule. The new Michigan rule includes targeted changes that are detailed here.

1

## NEW REQUIREMENT: INVENTORY ALL SERVICE LINES

BEFORE



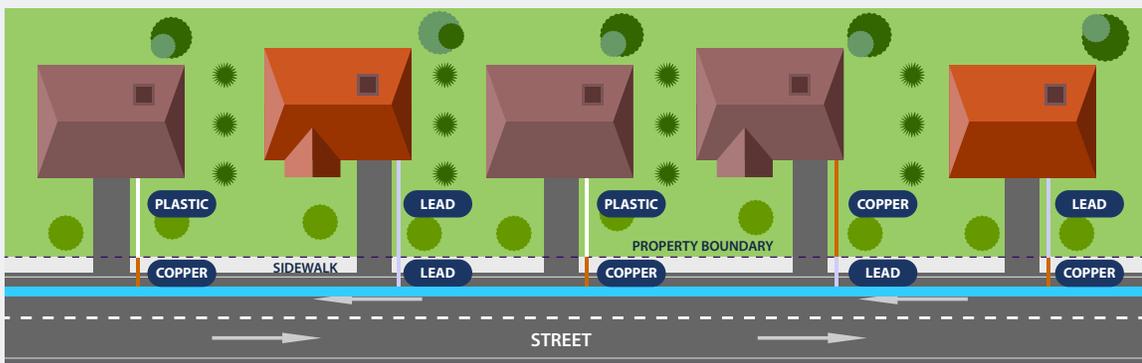
### WHAT'S NEW?

- Water systems must create a distribution system materials inventory that identifies the material of all service lines in the distribution system, including the portions on both public and private property.
- Water supplies must notify residents within 30 days if they live in a house with a lead service line.

### WHY?

Some water supplies have incomplete service line records, which means they may not know which houses have a lead service line and which ones do not. Completing a service line inventory is a critical starting point for protecting consumers from lead in drinking water. It is important for water suppliers to let consumers know if they have a lead service line so they can take precautions in their home. The inventory is necessary for water supplies to plan and implement lead service line removal requirements. It also identifies buildings that meet criteria to include in a water supply's Lead and Copper Rule sampling pool.

AFTER



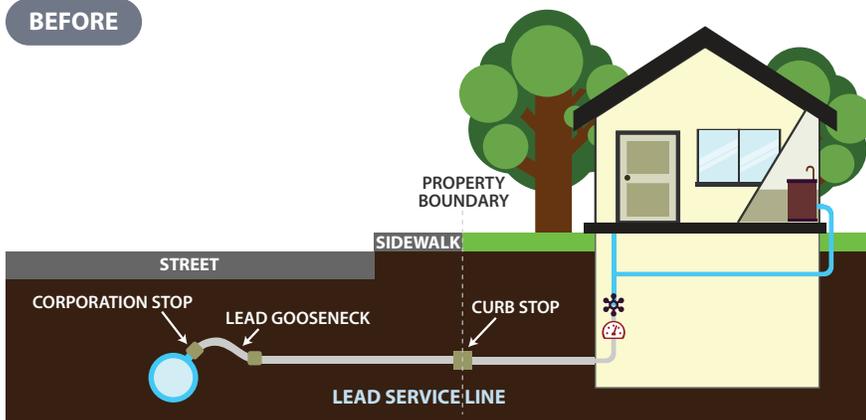
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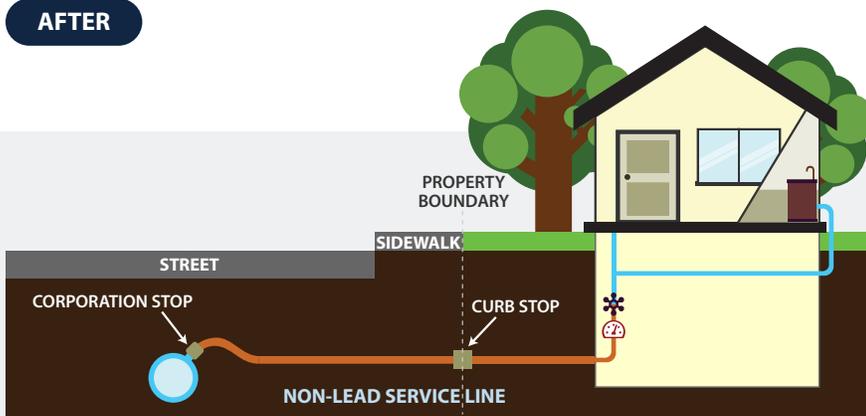
2

## NEW REQUIREMENT: COMPLETE LEAD SERVICE LINE REPLACEMENT

BEFORE



AFTER



### WHAT'S NEW?

- Water supplies are required to fully replace all lead service lines. Full replacement means removing entire lead service lines, on both public and private property. Removing only part of the lead service line is prohibited, unless emergency repairs are necessary.
- The definition of a lead service line changed. Lead service lines extend from the water main in the street to either the first water shutoff valve inside the building or 18 inches inside the building. Lead goosenecks, lead pigtails, and any other fittings made of lead between the water main and the shutoff are also considered lead service lines.
- Galvanized service lines – steel pipes with a thin coating of zinc – that are or were attached to a lead service line must also be replaced.
- Water supplies must replace an average of 5% of lead service lines each year so that all lead service lines are removed within 20 years. A water supplier can use a different replacement schedule based on the water supply's asset management plan if they receive permission from the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

### WHY?

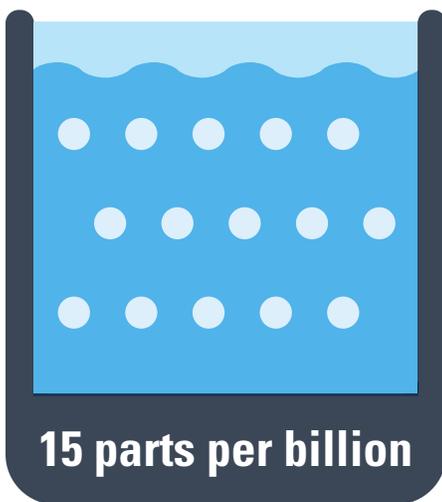
Lead service lines are the largest source of lead in contact with drinking water. Lead service line replacement permanently removes this lead source from drinking water supplies. Studies show that partial lead service line replacement can release lead particles into water, increase pipe corrosion, and can allow more lead to reach a homeowner's faucet.

# WHAT CHANGED WITH MICHIGAN'S 2018 LEAD AND COPPER RULE?

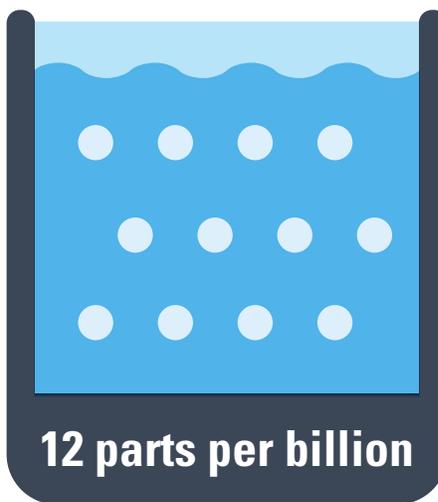
Prior to the adoption of the new Michigan Lead and Copper Rule in June 2018, Michigan's requirements were consistent with the federal Lead and Copper Rule. The new Michigan rule includes targeted changes that are detailed here.

3

## TARGETED REVISION: LOWER LEAD ACTION LEVEL



BEFORE



AFTER

### WHAT'S NEW?

- The lead action level will decrease from 15 ppb to 12 ppb on January 1, 2025.
- As in the federal Lead and Copper Rule, when a water system exceeds the lead action level, the water system is required to
  - 1) send notices to all customers,
  - 2) optimize corrosion control, and
  - 3) increase the pace of lead service line replacement to 7% per year if appropriate corrosion control had already been in place.

### WHY?

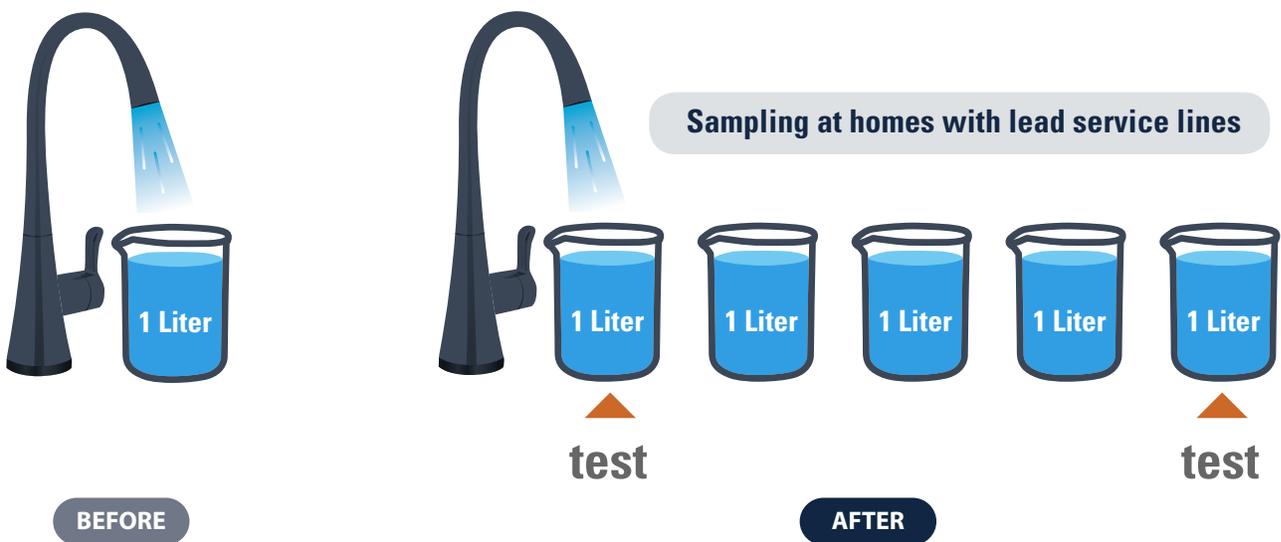
Lowering the lead action level encourages more water supplies to evaluate whether additional corrosion control can lower lead levels in the drinking water to avoid exceeding the action level. A lower lead action level may result in more water supplies exceeding the action level. If this happens, those water supplies will reduce the risk of lead exposure by improving corrosion control treatment or accelerating lead service line replacement. More consumers will receive notice of elevated lead levels and public education about lead in drinking water.

# WHAT CHANGED WITH MICHIGAN'S 2018 LEAD AND COPPER RULE?

Prior to the adoption of the new Michigan Lead and Copper Rule in June 2018, Michigan's requirements were consistent with the federal Lead and Copper Rule. The new Michigan rule includes targeted changes that are detailed here.

4

## TARGETED REVISION: NEW SAMPLING REQUIREMENTS AND METHODS



### WHAT'S NEW?

- Before, water supplies were required to test only the first liter of water collected from a tap. Now, water supplies will test both the first and fifth liters of water collected from lead service line homes.
- Water supplies must sample at buildings with lead service lines or lead pipes before sampling at buildings with other service line or plumbing materials.
- Water supplies must test their water annually, unless they meet a stricter standard for lead in the samples. The federal rule allows most water supplies that meet the lead action level (15 ppb) and copper action level (1,300 ppb) to sample every three years. Now some of these water supplies will sample annually if they are unable to meet new criteria in the Michigan rule to qualify for reduced sampling frequency.
- More water supplies using corrosion control treatment are required to sample water quality parameters more frequently than under the federal rule to ensure that corrosion control is working as planned.

### WHY?

Lead can be found in service lines that deliver water to a building. Even where there is no lead service line, lead can be found in plumbing inside the building in such things as fittings, fixtures, pipes (lead or galvanized), and solder. The first liter from the tap typically does not include water from the lead service line, which is the largest source of lead in contact with drinking water. The first liter sample can potentially show the risk of lead release from internal plumbing. The fifth liter is more likely to capture a portion of the water from the lead service line leading up to the home. The fifth liter better measures the potential range of exposure to lead in water in lead service line homes. Collecting two samples at lead service line homes also helps water supplies measure the effectiveness of corrosion control treatment for addressing multiple lead sources in plumbing. The increased sampling frequency for lead and copper and water quality parameters will provide more timely data for detecting unexpected changes in water quality.

# WHAT CHANGED WITH MICHIGAN'S 2018 LEAD AND COPPER RULE?

Prior to the adoption of the new Michigan Lead and Copper Rule in June 2018, Michigan's requirements were consistent with the federal Lead and Copper Rule. The new Michigan rule includes targeted changes that are detailed here.

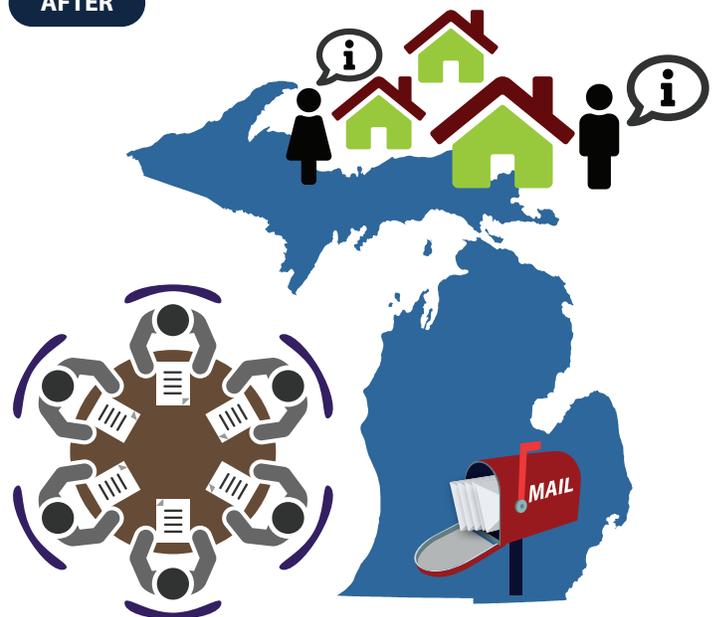
5

## NEW REQUIREMENT: PUBLIC INVOLVEMENT

### BEFORE



### AFTER



### WHAT'S NEW?

- A State Water System Advisory Council will advise the EGLE and local water supplies on lead in drinking water awareness campaigns, advise communities on action plans if lead action levels are exceeded, promote data and information transparency and management, and support all communities in Michigan on lead and other drinking water quality issues.
- Every water system with more than 50,000 customers must also have a local Water System Advisory Council. The community advisory council must have at least five members with at least one community representative who does not formally represent the interests of any incorporated organization.
- The local Water System Advisory Council will plan and provide public awareness outreach materials for all water system customers about lead in drinking water. They also will advise the water system on community level needs such as accessing homes for lead service line replacement, data transparency, and other community collaborative efforts related to lead in drinking water.

### WHY?

These two levels of Water System Advisory Councils create public participation opportunities for community and expert input supporting public awareness, emergency response, and transparency related to lead in drinking water. The water system advisory councils will provide targeted outreach to the diversity of customers the water supply serves.

# GALVANIZED SERVICE LINES

## Guidance

### WHAT ARE GALVANIZED SERVICE LINES?

**Galvanized Iron Pipes:** Galvanized pipes are iron pipes that have been dipped in a protective zinc coating to prevent corrosion and rust. Galvanized piping was commonly installed in homes built before 1970. Galvanized pipe was an alternative to lead pipe for water supply service lines.

**Service Lines:** Service lines are the underground pipes that deliver water from the water main to a home. Each service line or connection may consist of multiple plumbing material types including, but not limited to lead, copper, galvanized iron and plastic.



### HOW ARE GALVANIZED SERVICE LINES A SOURCE OF LEAD EXPOSURE?

Galvanized iron pipes can serve as a source for lead exposure in two ways.

1. Galvanized service lines can capture lead released from upstream lead service lines. This stored lead can be released into the home. The release can vary in concentration and can happen over a long period of time. In-home galvanized plumbing is also a source of potential lead exposure, if the house has or had a lead service line.
2. The zinc coating on galvanized pipes contains lead that can corrode and leach into drinking water. Older galvanized pipes, manufactured before 2014, contain a higher percentage of lead (between 0.5% and 1.4%); newer galvanized pipes intended for drinking water use must meet the Michigan Plumbing Code requirement (0.25% lead by weight).

### WHAT CAN YOU DO?

**Check if your home has a lead service line.** Homes with lead service lines have a higher risk of having high lead levels in drinking water.

**Check if your home has a galvanized service line or household plumbing.** Homes with galvanized service lines have a higher risk of having high lead levels in drinking water. A magnet will stick to galvanized iron pipes.

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

**Use a properly certified filter.** Read packaging to find a filter that meets NSF/ANSI Standards 53 for the reduction of lead and 42 for particulate (Class I). Be sure to maintain and replace the filter device in accordance with the manufacturer's instructions.

**Learn about your drinking water supply.** Read your community's Consumer Confidence Report that is mailed to each year or can be found at your local water utility's website.

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#### STARTING IN 2021

Community water supplies will be required to start replacing:

- Lead service lines
  - Galvanized lines that are, or were, connected to lead
- 

SCIENTIFIC SOURCES: Clark, B N., et al. "Lead Release to Drinking Water from Galvanized Steel Pipe Coatings." *Environmental Engineering Science*, vol. 32, no. 8, 2015, pp. 713-21, doi:doi:10.1089/ees.2015.0073.

HDR. "An Analysis of the Correlation between Lead Released from Galvanized Iron Piping and the Contents of Lead in Drinking Water." 2009, [archive.epa.gov/region03/dclead/web/pdf/galvanized%20project%20report.pdf](http://archive.epa.gov/region03/dclead/web/pdf/galvanized%20project%20report.pdf).

McFadden, M, et al. "Contributions to drinking water lead from galvanized iron corrosion scales." *Journal - American Water Works Association*, vol. 103, no. 4, 2011, pp. 76-89, doi:10.1002/j.1551-8833.2011.tb11437.x.

CONTENT DEVELOPED, IN PART, BY THE UNIVERSITY OF MICHIGAN WITH SUPPORT FROM THE CS MOTT FOUNDATION

# How to Identify Lead Free Certification Marks for Drinking Water System & Plumbing Products



## Lead Free Requirement

The *Reduction of Lead in Drinking Water Act* went into effect on January 4, 2014. The Act has reduced the lead content allowed in water system and plumbing products by changing the definition of lead free in Section 1417 of the Safe Drinking Water Act (SDWA) from not more than 8% lead content, to not more than a weighted average of 0.25% lead with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

The SDWA prohibits the use of these products in the installation or repair of any public water system or facility providing water for human consumption if they do not meet the lead free requirement. It also makes it unlawful to introduce them into commerce. This includes stocked inventories and coated or uncoated brass or bronze products. There are some exemptions to the prohibitions— for more information on the exemptions, see “EPA’s Summary of the Reduction of Lead in Drinking Water Act and Frequently Asked Questions” at <http://water.epa.gov/drink/info/lead/upload/epa815s13003.pdf>



Plumbing product with engraved certification mark

## Is lead free certification required for products?

As of March 2015, there is no mandatory federal requirement for lead free product testing or third-party certification under the Safe Drinking Water Act (SDWA).\* However, consumers can increase their level of confidence by purchasing products that have been certified as meeting the lead free requirement of the SDWA. If a product has not been certified, it may still meet the lead free requirement—in this case, contacting the manufacturer would be the best way to confirm the lead content.

*\*There may be additional state or local laws pertaining to the allowed lead content of pipes, pipe fittings, and plumbing fittings and fixtures, some of which require product certification or testing.*

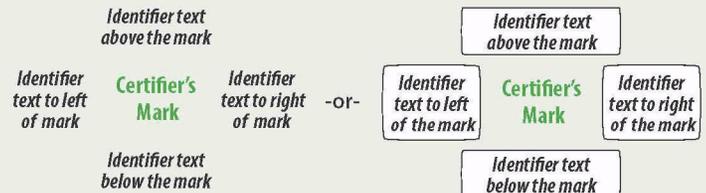
## How do I know if a product has been certified as lead free?

In the United States, there are eight American National Standards Institute (ANSI) accredited third-party certification bodies that provide product certification to the SDWA lead free requirement for manufacturers of drinking water system and plumbing products (see Table on Page 2 for list of certification bodies). Each of these certification bodies has a registered trademark that they use to certify a multitude of products for various requirements; however, the trademark alone does not necessarily mean that the product has been certified to the lead free requirement.

1. The certifier’s marks will typically be located on the front or back of the packaging or engraved on the product itself. If required, lead free certification identifier text will be included next to the mark:

Certifier’s Mark + Identifier text

2. If required, the lead free certification identifier text will be in one location near the certifier mark as free text or text enclosed in a box:



## What do the lead free certification marks look like?

Certification mark requirements for each of the certification bodies are detailed in the **Table on Page 2**, and can also be found for each certification body individually on **Pages A1–A8**. An example of an engraved certification mark is shown to the left; examples of marks and identifier text as found on product packaging are shown below.

The grid shows examples from UL, NSF/ANSI 372 Lead Free, NSF 61 NSF 372, NSF, ICC ES PMG Low Lead, UPC NSF-61/9-G, NSF/ANSI 61 NSF/ANSI 372, and ANSISF 61-8.

# Certification Marks for ANSI Accredited Third-Party Certification Bodies

The table below provides the ANSI Accredited third-party certification bodies' approved certification marks and required identifier text, as well as any additional remarks, that indicate a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

"US" = United States; "USA" = United States of America; "C" = Canada; "CA" = Canada

Certification Body	Certification Mark(s)	Required Identifier Text & Remarks
CSA Group	   	<p><b>Required Identifier Text:</b> Text indicating certification to at least one of the lead free certification identifiers (listed below the table) must accompany the marks.</p> <p><b>Remarks:</b> Based on the intended product market, the marks may be accompanied by a "C" &amp; "US" or just a "US".</p>
IAPMO R&T, Inc.	    	<p><b>Required Identifier Text:</b> Text indicating certification to at least one of the lead free certification identifiers (listed below the table) or the term "Low-Lead" must accompany the marks.</p> <p><b>Remarks:</b> Based on the intended product market, the marks may be accompanied by a "C".</p>
ICC-ES		<p><b>Required Identifier Text:</b> Identifier text is not required.</p> <p><b>Remarks:</b> Text indicating certification to a lead free certification identifier (listed below the table) may be included next to the mark, but is not required.</p>
Intertek	 	<p><b>Required Identifier Text:</b> Text indicating certification to at least one of the lead free certification identifiers (listed below the table) must accompany the marks.</p> <p><b>Remarks:</b> (1) Marks can be black or reversed in white. (2) Based on the intended product market, the marks may be accompanied by a "C" or a "US" or both.</p>
NSF International	  <p>NSF-61-372 NSF-61-G NSF-372 NSF pw-G</p>	<p><b>Required Identifier Text:</b> Text indicating certification to an NSF/ANSI Standard (listed below the table) must accompany the circular certification marks.</p> <p><b>Remarks:</b> (1) Marks can be blue, white, or black. (2) Based on the intended product market, the marks may be accompanied by a "C" &amp; "US" or just a "C". (3) Standard 61 circular and text marks may alternately include 61/9-G.</p>
Truesdail		<p><b>Required Identifier Text:</b> Text indicating certification to at least one of the lead free certification identifiers (listed below the table) must accompany the mark.</p> <p><b>Remarks:</b> Mark can be white or blue.</p>
UL	  <p>UND. LAB. CLASSIFIED UND. LAB. CLFD</p>	<p><b>Required Identifier Text:</b> Text indicating certification to an NSF/ANSI Standard (listed below the table) must accompany all the marks.</p> <p><b>Remarks:</b> (1) Based on the intended product market, the marks may be accompanied by a "C", "CA", "US", "C" &amp; "US", or "CA" &amp; "US". (2) The File No. is a unique identification for a product used to search the UL online certification directory.</p>
WQA	  <p>NSF/ANSI 372 by WQA</p>	<p><b>Required Identifier Text:</b> Text indicating certification to an NSF/ANSI Standard (listed below the table) must accompany the circular marks.</p> <p><b>Remarks:</b> (1) The marks can be either gold or black and white. (2) Based on the intended product market, the marks may be accompanied by a "C" &amp; "USA" or just a "C".</p>

**Lead Free Certification Identifier Text** (Varies between certification bodies. See the remarks column of table for clarification)

- **NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):** Dictates that a product has been certified as meeting a weighted average lead content of ≤0.25% when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.
- **NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):** Dictates that a product has been certified as meeting leachate requirements for contaminants (metals and non-metals), as well as the lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").
- **California HB AB1953, Section 116875 [AB 1953 (2006) or CA HSC §116875 [AB 1953 (2006)]]:** Dictates that a product has been certified as meeting a weighted average lead content of ≤0.25% when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

## EPA Resources

### Current Federal Law

Section 1417 of the Safe Drinking Water Act: 42 U.S.C. Section 300g-6:  
<http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm>

### Additional Resource

EPA's Summary of the Reduction of Lead In Drinking Water Act and Frequently Asked Questions:  
<http://water.epa.gov/drink/info/lead/upload/epa815s13003.pdf>

## ANSI Accredited Third-Party Certification Bodies

### CSA Group

Low Lead Requirements: <http://www.csagroup.org/us/en/industries/plumbing/low-lead-requirements>

Certification Marks: <http://www.csagroup.org/us/en/about-csa-group/certification-marks-labels>

Certified Product Listings: <http://www.csagroup.org/us/en/services/testing-and-certification/certified-product-listing>

### IAPMO R&T, Inc.

Marks of Conformity: <http://www.iapmort.org/Pages/MarksofConformity.aspx>

Product Listing Directory: <http://pld.iapmo.org/default.asp>

### ICC-ES

PMG Listing Mark: <http://www.icc-es-pmg.org/Mark/>

PMG Listing Directory: [http://www.icc-es-pmg.org/Listing\\_Directory/](http://www.icc-es-pmg.org/Listing_Directory/)

### Intertek

Certifications & Marks: <http://www.intertek.com/product-certifications/marks/>

Listed Product Directory: [https://whdirectory.intertek.com/Pages/DLP\\_Search.aspx](https://whdirectory.intertek.com/Pages/DLP_Search.aspx)

### NSF International

Lead Content Compliance (includes marks): <http://www.nsf.org/info/lowlead>

Lead Content Certified Products Database: [http://info.nsf.org/Certified/Lead\\_Content/](http://info.nsf.org/Certified/Lead_Content/)

### Truesdail

Mark and Product Listing: [http://www.truesdail.com/specialty\\_testing/plumbing.html](http://www.truesdail.com/specialty_testing/plumbing.html)

### UL

UL IQ for Certified Water Products: <http://iq.ul.com/water/>

Certification Marks and UL Badges: <http://ul.com/corporate/marks/>

Online Certifications Directory: <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.html>

### WQA

Use of the Gold Seal: [http://www.wqa.org/Portals/0/Product%20Certification/Gold\\_Seal\\_Usage\\_Policy.pdf](http://www.wqa.org/Portals/0/Product%20Certification/Gold_Seal_Usage_Policy.pdf)

Certified Products Directory: <http://www.wqa.org/Find-Products>

## Questions?

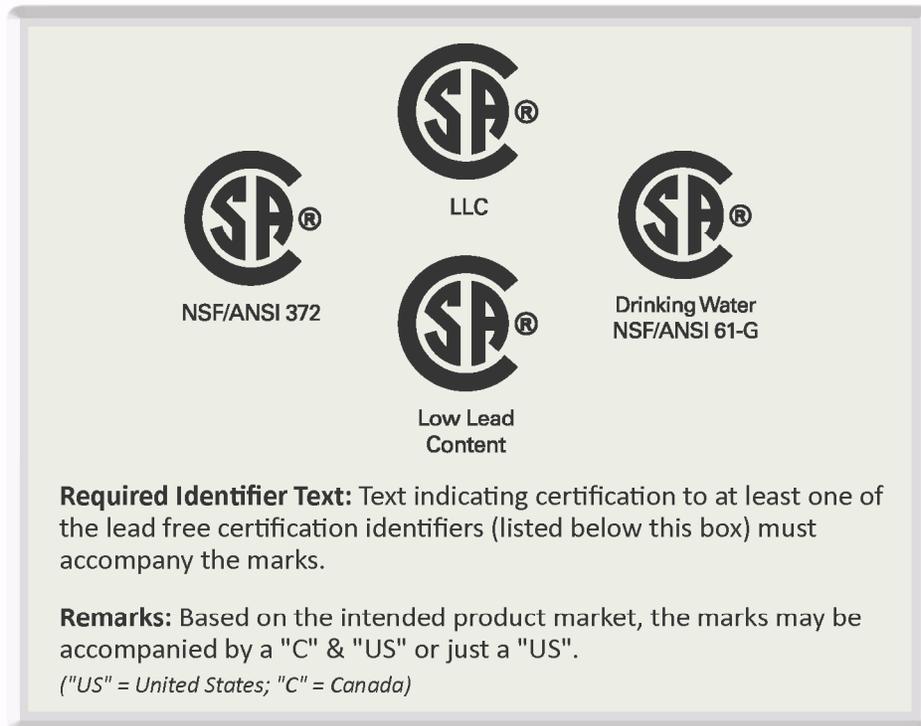
For questions regarding the lead content of a product: Contact the product manufacturer

For questions regarding this document: Contact Michelle Latham at [latham.michelle@epa.gov](mailto:latham.michelle@epa.gov)

# CSA Group Certification Marks

The box below provides the CSA Group's approved certification marks and required identifier text, as well as any additional remarks, that indicate a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

## Certification Marks



## Lead Free Certification Identifier Text

### **NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

### **NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):**

Dictates that a product has been certified as meeting leachate requirements for all contaminants (metals and non-metals), as well as the new lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").

### **California HB AB1953, Section 116875 [AB 1953 (2006) or CA HSC §116875 [AB 1953 (2006)]:**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

## Resources

Low Lead Requirements: <http://www.csaqgroup.org/us/en/industries/plumbing/low-lead-requirements>

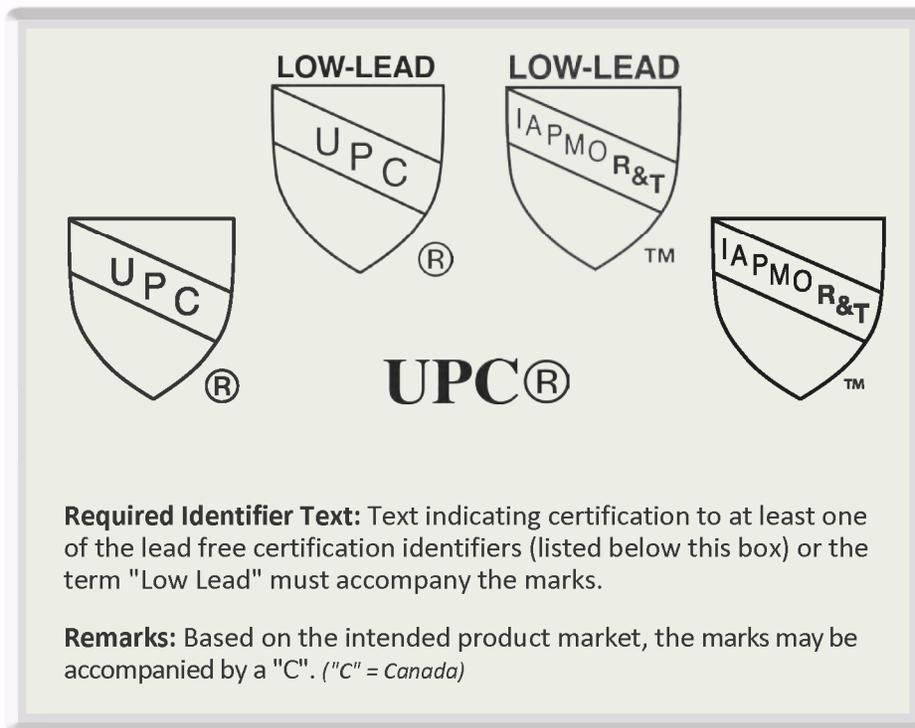
Certification Marks: <http://www.csaqgroup.org/us/en/about-csa-group/certification-marks-labels>

Certified Product Listings: <http://www.csaqgroup.org/us/en/services/testing-and-certification/certified-product-listing>

# IAPMO R&T, Inc. Certification Marks

The box below provides IAPMO R&T's approved certification marks and required identifier text, as well as any additional remarks, that indicate a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

## Certification Marks



## Lead Free Certification Identifier Text

### **NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

### **NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):**

Dictates that a product has been certified as meeting leachate requirements for all contaminants (metals and non-metals), as well as the new lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").

### **California HB AB1953, Section 116875 [AB 1953 (2006) or CA HSC §116875 [AB 1953 (2006)]]:**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

## Resources

Marks of Conformity: <http://www.iapmort.org/Pages/MarksOfConformity.aspx>

Product Listing Directory: <http://pld.iapmo.org/default.asp>

# ICC-ES Certification Marks

The box below provides ICC-ES's approved certification marks and required identifier text, as well as any additional remarks, that indicate a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

## Certification Mark



## Lead Free Certification Identifier Text

### **NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

### **NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):**

Dictates that a product has been certified as meeting leachate requirements for all contaminants (metals and non-metals), as well as the new lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").

### **California HB AB1953, Section 116875 [AB 1953 (2006) or CA HSC §116875 {AB 1953 (2006)}]:**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

## Resources

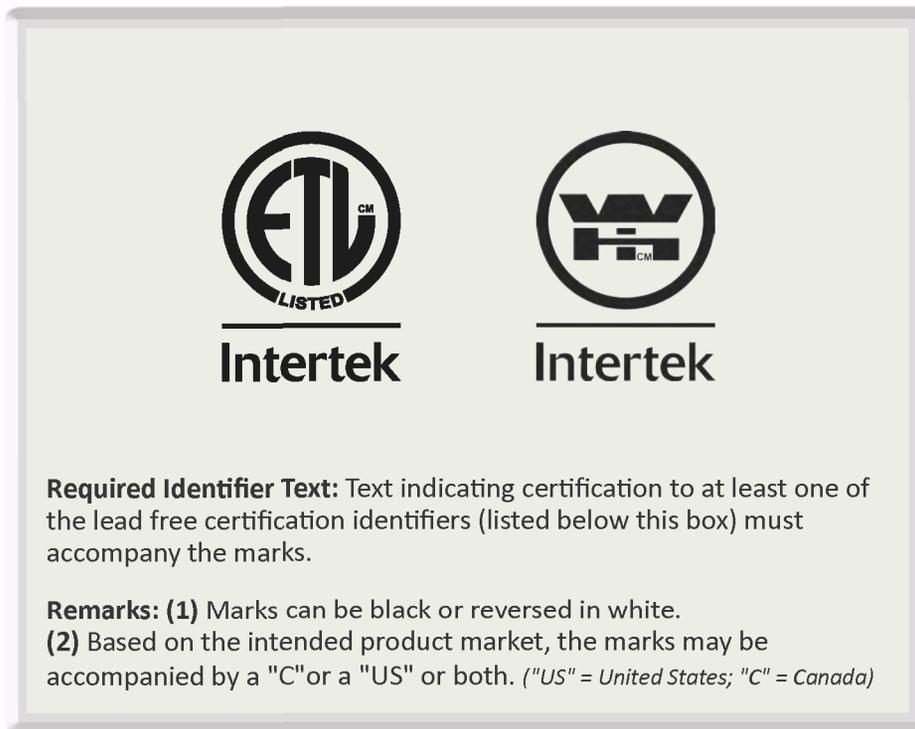
PMG Listing Mark: <http://www.icc-es-pmq.org/Mark/>

PMG Listing Directory: [http://www.icc-es-pmq.org/Listing\\_Directory/](http://www.icc-es-pmq.org/Listing_Directory/)

# Intertek Certification Marks

The box below provides Intertek's approved certification marks and required identifier text, as well as any additional remarks, that indicate a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

## Certification Marks



## Lead Free Certification Identifier Text

### **NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

### **NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):**

Dictates that a product has been certified as meeting leachate requirements for all contaminants (metals and non-metals), as well as the new lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").

### **California HB AB1953, Section 116875 [AB 1953 (2006) or CA HSC §116875 [AB 1953 (2006)]]:**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

## Resources

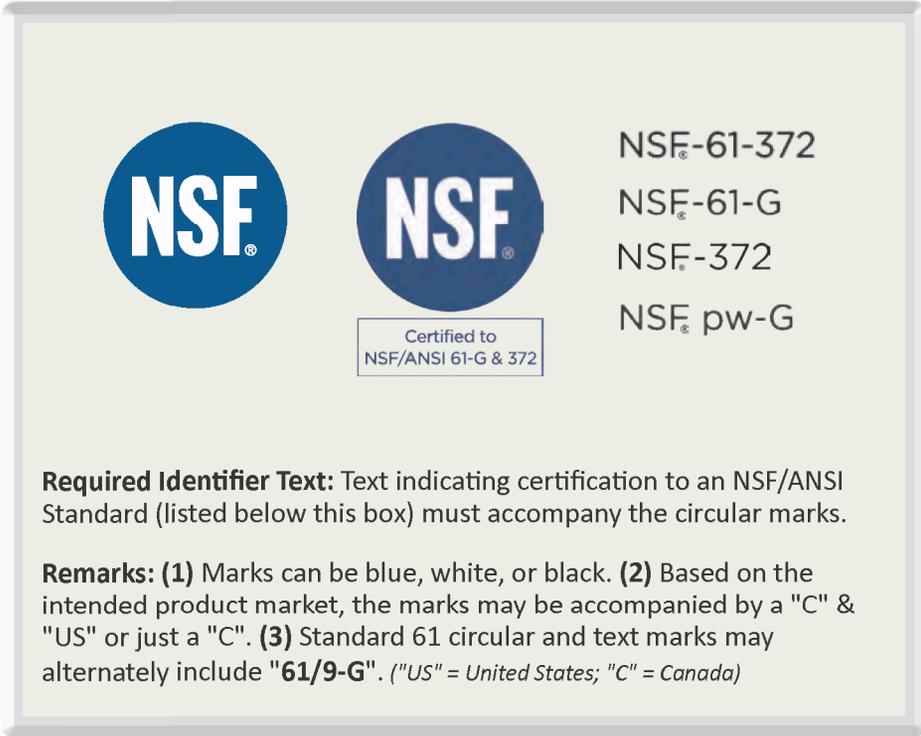
Certifications & Marks: <http://www.intertek.com/product-certifications/marks/>

Listed Product Directory: [https://whdirectory.intertek.com/Pages/DLP\\_Search.aspx](https://whdirectory.intertek.com/Pages/DLP_Search.aspx)

# NSF International Certification Marks

The box below provides NSF's approved certification marks and required identifier text, as well as any additional remarks, that indicate a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

## Certification Marks



NSF-61-372  
NSF-61-G  
NSF-372  
NSF pw-G

**Required Identifier Text:** Text indicating certification to an NSF/ANSI Standard (listed below this box) must accompany the circular marks.

**Remarks:** (1) Marks can be blue, white, or black. (2) Based on the intended product market, the marks may be accompanied by a "C" & "US" or just a "C". (3) Standard 61 circular and text marks may alternately include "61/9-G". ("US" = United States; "C" = Canada)

## Lead Free Certification Identifier Text

### NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, and plumbing fittings, and plumbing fixtures.

### NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):

Dictates that a product has been certified as meeting leachate requirements for all contaminants (metals and non-metals), as well as the new lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").

## Resources

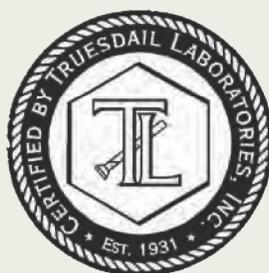
Lead Content Compliance (includes marks): <http://www.nsf.org/info/lowlead>

Lead Content Certified Products Database: [http://info.nsf.org/Certified/Lead\\_Content/](http://info.nsf.org/Certified/Lead_Content/)

# Truesdail Certification Mark

The box below provides Truesdail's approved certification mark and required identifier text that indicates a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

## Certification Mark



**Required Identifier Text:** Text indicating certification to at least one of the lead free certification identifiers (listed below this box) must accompany the mark.

## Lead Free Certification Identifier Text

### **NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

### **NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):**

Dictates that a product has been certified as meeting leachate requirements for all contaminants (metals and non-metals), as well as the new lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").

### **California HB AB1953, Section 116875 [AB 1953 (2006) or CA HSC §116875 [AB 1953 (2006)]]:**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

## Resource

Mark and Product Listing: [http://www.truesdail.com/specialty\\_testing/plumbing.html](http://www.truesdail.com/specialty_testing/plumbing.html)

# UL Certification Marks

The box below provides UL's approved certification marks and required identifier text, as well as any additional remarks, that indicate a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

## Certification Marks



The image displays three UL certification marks. On the left is the standard UL logo (UL in a circle with a registered trademark symbol). In the center is a vertical badge with 'UL' in a circle at the top, followed by 'CERTIFIED', 'HEALTH EFFECTS US-CA', and 'File No.' at the bottom. To the right of these marks are two lines of text: 'UND. LAB. CLASSIFIED' and 'UND. LAB. CLFD'.

**Required Identifier Text:** Text indicating certification to an NSF/ANSI Standard (listed below this box) must accompany all the marks.

**Remarks:** (1) Based on the intended product market, the marks may be accompanied by a "C", "CA", "US", "C" & "US", or "CA" & "US". (2) The File No. is a unique identification for a product used to search the UL online certification directory. ("US" = United States; "C" = Canada; "CA" = Canada)

## Lead Free Certification Identifier Text

### NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, and plumbing fittings, and plumbing fixtures.

### NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):

Dictates that a product has been certified as meeting leachate requirements for all contaminants (metals and non-metals), as well as the new lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").

## Resources

UL IQ for Certified Water Products: <http://iq.ul.com/water/>

Certification Marks and UL Badges: <http://ul.com/corporate/marks/>

Online Certifications Directory: <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.html>

# WQA Certification Marks

The box below provides WQA's approved certification marks and required identifier text, as well as any additional remarks, that indicate a pipe, pipe fitting, plumbing fitting, or plumbing fixture meets the lead free requirement of Section 1417 of the Safe Drinking Water Act.

## Certification Marks



**NSF/ANSI 372 by WQA**

**Required Identifier Text:** Text indicating certification to an NSF/ANSI Standard (listed below this box) must accompany the marks.

**Remarks: (1)** The marks can be either gold or black and white.  
**(2)** Based on the intended product market, the marks may be accompanied by a "C" & "USA" or just a "C".  
(*"USA" = United States of America; "C" = Canada*)

## Lead Free Certification Identifier Text

### **NSF/ANSI Standard 372 (NSF/ANSI 372 or NSF-372):**

Dictates that a product has been certified as meeting a weighted average lead content of  $\leq 0.25\%$  when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

### **NSF/ANSI Standard 61, Annex G (NSF/ANSI 61 Annex G or NSF 61-G):**

Dictates that a product has been certified as meeting leachate requirements for all contaminants (metals and non-metals), as well as the new lead free requirements of NSF-372 (Standard 61 text may alternately include "61/9-G").

## Resources

Use of the Gold Seal: [http://www.wqa.org/Portals/0/Product%20Certification/Gold\\_Seal\\_Usage\\_Policy.pdf](http://www.wqa.org/Portals/0/Product%20Certification/Gold_Seal_Usage_Policy.pdf)

Certified Products Directory: <http://www.wqa.org/Find-Products>

# The History of Plumbing...so far!

The creation of modern plumbing with its delivery of clean water and removal of waste is credited with being one of the single most important inventions ever. Toilets, and the delivery of clean water into homes, are widely acknowledged to have saved more lives than anything else in the world, including modern medicine and vaccines.



Roman aqueducts carry 1.2 billion liters of water a day a distance of 57 miles in order to bring fresh water to Rome.

1700 BC

Plumbers construct an elaborate system of sewage disposal and drainage, the first of its kind, and create the first flush toilet in Crete.

Boston builds the USA's first city waterworks system to be used by fire brigades. *Historical Note: most of the pipes at this time were built from hollowed out trees.*

312 BC



Queen Elizabeth I installs the first flushing toilet in England, invented by her godson Sir John Harrington... hence the nickname, "the John".

1596



Philadelphia becomes the first city to switch entirely to cast iron pipes to create their intricate new system of water delivery, making them a global leader in plumbing.

1652

Alexander Cummings receives the first patent for a flushing toilet.

1775

Cholera outbreak occurs due to a contaminated well in England.

1804

Boston's Tremont Hotel offers indoor plumbing; the first hotel to do so.

1829

Chicago becomes the first large American city to build a comprehensive sewer system.

1848

England passes the National Public Health Act which includes notes on water safety and will be adapted for countries around the globe.

1854



The New York Metropolitan Board of Health forms in response to a growing demand for government study into the cause of serious health outbreaks and rapid spread of disease. Their studies will confirm the link between contaminated water and the spread of disease leading to a call for better sanitation.

1855

Louis Pasteur, the "father of microbiology" and the inventor of the vaccine, uncovers the link between bacteria and disease.



1868

Chicago amazes the world with the installation of the first city water tower.

1869

Private homes begin to see the first installation of water heaters; although understanding on proper temperatures and safety guidelines will follow much later.

1870

High Tank water closets enter the market using a whopping 10 gallons of water per flush!



1880's

Today's 'National Association of Plumbing, Heating, Cooling Contractors (PHCC)' then known as the 'National Association of Master Plumbers,' holds their first official meeting.

1883

The world's first drinking water treatment systems are built in Massachusetts to reduce turbidity and microbial contamination.

1890

Tank type water closets emerge onto the market using 5 to 7 gallons of water per flush, reducing previous water consumption by 30-50%.



1906

William E. Sloan invents the flushometer valve that uses pressure from the water supply system to discharge water for waste removal from toilets and urinals as opposed to using gravity.

1920's

The International Association of Plumbing and Mechanical Officials (IAPMO) is founded. They begin writing a model code to protect the health of people from inept plumbing practices.

1926

A tragic outbreak of dysentery, leading to nearly 100 deaths during the World's Fair in Chicago is traced to a faulty plumbing system that leaked contaminated water.

1933

The Sanitary Brass Institute and the Tubular Plumbing Goods Institute combine to form the Plumbing Brass Institute (PBI).

1937

Alfred M. Moen invents the single handle mixing faucet.



1939

Paul C. Symmons invents the first compensating shower valve to guard against thermal shock.

1954

PBI gets approval for the standard on fixture fittings known as ANSI A112.18.1 helping to regulate industry standards.

1954

1954 - Plumbing Brass Institute's (PBI) first president, Arthur H. Goepel, appoints the first plumbing standards committee for fixture fittings. *Historical Note: PBI, later renamed Plumbing Manufacturers Institute, is today's Plumbing Manufacturers International (PMI).*

1969

American Society of Sanitation Engineering (ASSE) issues standard ASSE 1016 for compensating shower valves to help increase safety.



1973

The US passes the Safe Drinking Water Act.

1974



PBI changes its name to Plumbing Manufacturers Institute (PMI).

1975

The first 3.5 gallons of water per flush (gpf) toilet is introduced; previous versions used between 5.0 to 10.0 gpf or more!

1977

California issues a new law requiring toilets to use no more than 3.5 gpf.



1978

USA amends the Clean Water Act to expand on the Federal Water Pollution Control Act of 1948.

1984

USA passes the Lead Contamination Control Act.

1988

The National Sanitation Foundation (NSF) forms NSF 61 joint committee with the American National Standards Institute (ANSI) to test all fixtures that come in contact with potable water.

1988

The American Society of Mechanical Engineers issues new standards conformance to ASSE 1016 for compensating shower valves to create harmony in the industry and in North America.

1989

The NSF/ANSI 61 standard is officially published.

1990

Congress passes the Environmental Policy Act of 1992 (EPAct'92) to conserve water mandating maximum water consumption for toilets at 1.6 gpf, urinals at 1.0 gpf, faucets at 2.5 gallons per minute (gpm) and 2.5 gpm for showerheads. President George H. W. Bush signs it into law.

1991

NSF/ANSI-14 is adopted as a standard regulating plastic piping components.

1992

The US Environmental Protection Agency (EPA) promulgates the Lead Copper Rule. The first domestic set of lead-free plumbing products are introduced.

1993



Building Officials and Code Administrators (BOCA) Plumbing Code now makes shower compensating valves required.

1994

EPAct '92 officially goes into effect.



1994

The International Code Council (ICC) is established as a non-profit organization dedicated to developing a single set of comprehensive and coordinated model construction codes, including the International Plumbing Code (IPC).

1998

PMI reorganizes into a focused, self-managed, independent association.

2003

EPAct'92 is revised to lower faucet flow rates to 2.2 gpm from 2.5 gpm.

2005

PMI signs a MOU with the US Department of Commerce.

2005

The United Nations (UN) declares 2005-2015 the International Decade for Action, "Water for Life" with a focused list of goals to raise awareness and support of better sanitation and world issues relating to water and plumbing.



2005

PMI signs a Memorandum of Understanding (MOU) with the UK's Bathroom Manufacturers Association (BMA).

2006

California enacts AB 1953 which mandates lead content in plumbing fixtures be <0.25%.

2006



EPA launches the voluntary WaterSense program providing performance standards for water conserving fixtures and establishing High Efficiency plumbing products; PMI becomes a WaterSense Partner.

The World Health Organization publishes a guide, *Health Aspects of Plumbing*, noting that "sustainable health, especially for children, is not possible without access to safe drinking water and basic sanitation facilities."

2006

PMI signs a MOU with Plumbing Products Industry Group of Australia.

2007

EPA WaterSense issues high efficiency specifications for toilets and lavatory faucets.

2007

NSF/ANSI 61 adds Annex F further reducing the allowable lead content in potable water fixtures.

2007

PMI supports California efforts to encourage and provide for the gradual conversion to WaterSense plumbing fixtures for toilets and urinals through the passage of a new law, AB 715, mandating that all toilets and urinals sold in the state must be WaterSense certified by 2014.

2007

PMI launches www.SafePlumbing.org to provide safe, reliable information about the plumbing industry.

2008



PMI advocates passage of the Vermont Act 193 on lead and NSF/ANSI 61 adds Annex G which further regulates the allowable lead content in potable water fittings.



2008

California enacts PMI-sponsored SB 1334 to add 3rd party certification to water conserving plumbing fittings, and SB 1395 requiring state testing and evaluation.

2008

PMI signs MOU with the Canadian Institute of Plumbing and Heating (CIPH).

2008

PMI works with the Alliance for Water Efficiency, IAPMO, ICC and PHCC to form the Plumbing Efficiency Research Coalition (PERC) dedicated to developing research projects to support the development of water efficiency and sustainable plumbing products, systems and practices.

2009

EPA WaterSense issues an official specification for urinals.



2010

EPA WaterSense issues an official specification for showerheads.



2010

PMI changes its name to Plumbing Manufacturers International to reflect its expanded scope.

2010

NSF/ANSI 372 is published, issuing new standards for testing procedures to test for lead in potable water system components.

2010

PMI recognizes the important role certifiers, suppliers, and other industry groups play in the plumbing manufacturing industry, by creating its Allied Member category of membership.

2011

PMI spearheads introduction and passage of "Reduction of Lead in Drinking Water Act" (P.L.111-380) to harmonize certain state lead laws by reducing lead content in certain plumbing fixtures from 8% to a maximum of 0.25% weighted average, and provide a 36 month implementation period. President Obama signs the law to take effect January 4, 2014.

2011

PMI signs a MOU with the International Association of Plumbing and Mechanical Officials (IAPMO).

2011

PMI works with Louisiana state legislature to ensure lead-free legislation (HB 471) conforms to provisions in the California law in the spirit of harmonization. Louisiana Governor signs HB 471 into law, effective January 1, 2013.

2011

NSF implements the Dezincification Standard.

2011

PMI joins other industry organizations in forming the Get The Lead Out of Plumbing Consortium to provide education on the new Federal Lead Law being enacted in 2014.

2012



PMI joins ASPE and IAPMO in founding the Plumbing Industry Leadership Coalition (PILC). 11 other organizations sign on: AWE, ARCSA, American Supply Association (ASA), Copper Development Association, ICC, MechanicalHub, PHCC, United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of US, Canada and Australia, and the Water Quality Association.

2012

Georgia signs a comprehensive water efficiency law, the "Water Stewardship Act" (SB 370), which requires higher efficiency standards for toilets, faucets and urinals. It is the first state to require sub-metering of multi-unit residential, commercial and industrial buildings, effective July 2012.

2012

PMI efforts at state harmonization continue as Maryland and Vermont pass laws that reduce the allowable lead content of plumbing fixtures.



2012

PMI signs a MOU with the American Rainwater Catchment Association (ARCSA).

2013

PMI signs a MOU with the American Society of Plumbing Engineers (ASPE).

2013

EPA WaterSense releases a PMI supported specification on commercial pre-rinse spray valves.

2013

PMI works with state legislators as California AB 715 and Texas HB 2667 on water efficiency go into effect.

2014

The Federal Law "Reduction of Lead in Drinking Water Act" reducing lead content in plumbing fixtures from 8.0% to maximum 0.25% weighted average goes into effect.



2014

President Obama signs the "Water Resources Reform Development Act" to address water infrastructure issues.

2014

In consultation with PMI, Colorado adopts high efficiency plumbing standards (SB 14-103), the "Phase in High Efficiency Water Fixtures Options," which requires the use of WaterSense fixtures for all tank-type toilets, urinals, faucets and showerheads. Colorado Governor signs the law, effective September 1, 2016.

2014

PMI co-convenes the 4th International Emerging Technology Symposium along with ASPE, CIPH, IAPMO, Mechanical Contractors Association of America, Plumbing Contractors Association, PHCC, United Association and the World Plumbing Council.

2014

PMI continues to work with local, state and federal policymakers, industry leaders and professionals to achieve their vision of "Safe, responsible plumbing. Always."

Present

- International
- Emerging Technology
- Symposium

