

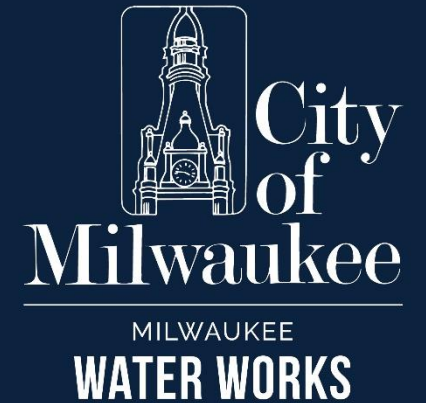


# Lead Service Line Replacement Program Semi-Annual Report

September 7, 2023

Public Works Committee

Common Council File #230411






# Lead Basics

- Lead is a toxic substance
- Lead exposure is cumulative
- There is no safe exposure to lead
- Young children are particularly vulnerable
- Goal is to remove ALL sources from the community
  - Lead-Safe Milwaukee: <https://city.milwaukee.gov/LeadSafeMKE>
    1. Safe Paint
    2. Safe Water: Lead Service Line Replacement (LSLR) program
    3. Safe Kids



 **Lead-Safe Milwaukee**  
SAFE PAINTS SAFE WATER SAFE KIDS

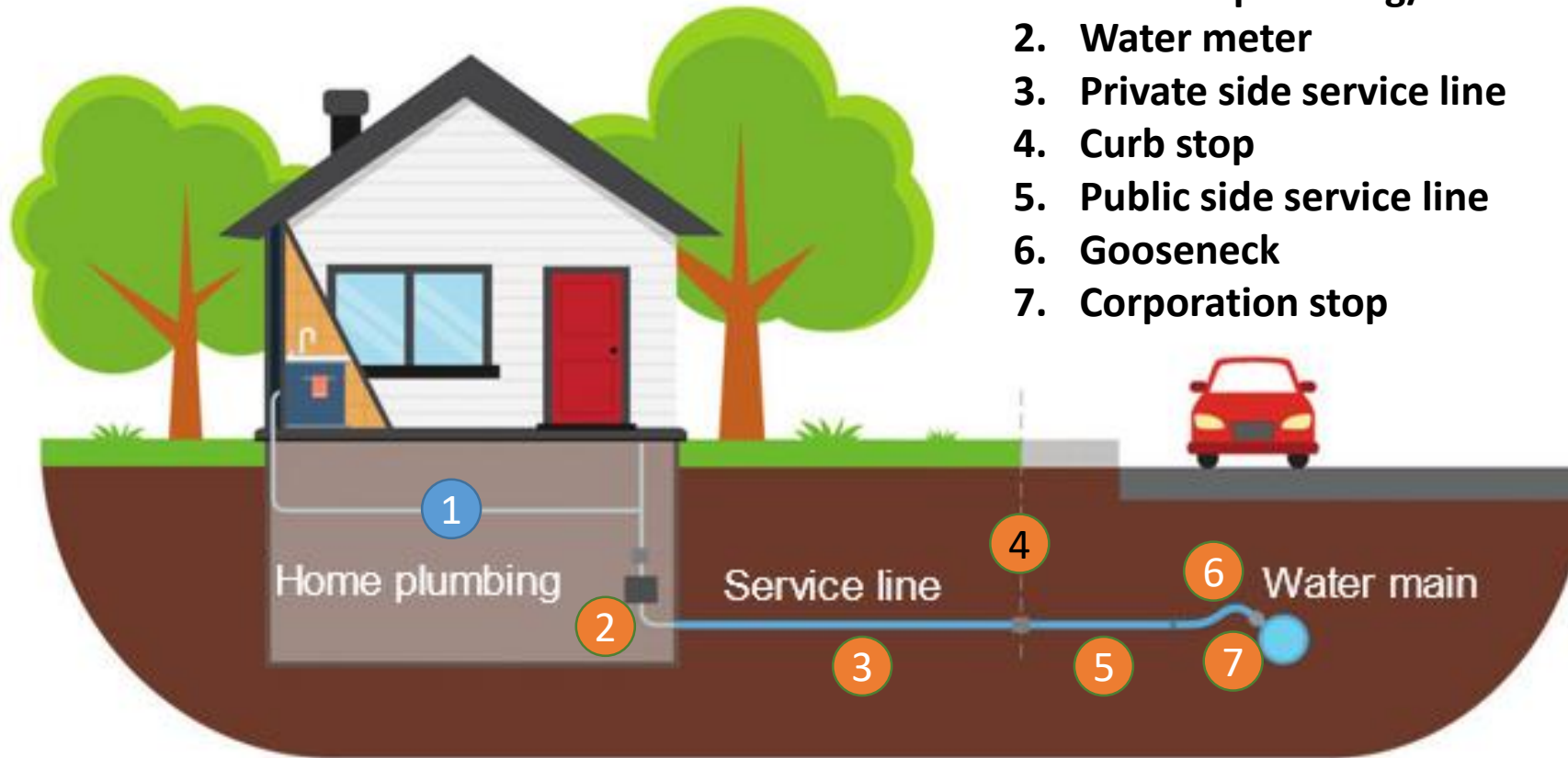
Learn About Lead   Lead-Safe Easy as 1-2-3

[CONTACT US](#)   [VERSION EN ESPAÑOL](#)

There are several sources of lead you should know about. The most common way children are exposed to high levels of lead is through chipping, peeling or cracking lead-based paint in older homes. When lead is found in drinking water, it is usually because water can dissolve the lead in pipes and plumbing. What can you do to protect your family?

- 1  
**Safe Paint:**
- 2  
**Safe Water:**
- 3  
**Safe Kids:**

# What is a lead service line?



## *Lead in water reduction efforts*

- 1951 MWW installed last public-side lead service line (LSL)
- 1962 City ordinance requiring private side copper
- 1985 Reconnection to LSL prohibited for new construction
- 1996 Corrosion Control Treatment (orthophosphate) implemented
- 1997 MWW compliance with Lead and Copper Rule
- 2015 MWW pilot study to assess lead in water
- 2016 MWW began replacing, rather than repairing, LSLs
- 2017 Lead Service Line Replacement Program established
- 2019 Corrosion Control Treatment (CCT) Reevaluation of Optimization
- 2020 Lead and Copper Rule (LCR) Compliance Sampling
- 2021 LCR Revisions published and go into effect late 2024
- 2022 Designation of optimal corrosion control treatment by WI DNR

## *Lead service line replacement mandate*

- As of January 1, 2017, full lead service line mandated to be replaced with copper when:
  - A leak or failure has been discovered on either the privately- or utility-owned portion
  - The utility-owned portion is replaced on either a planned or emergency basis
  - The property is a child care facility (licensed or certified) or school
- REPAIR or RECONNECTION to lead service line PROHIBITED
- Property owner may initiate replacement of privately-owned portion at their own expense with which MWW will pay for and replace the utility-owned portion

# LSL Replacements and Filter Distribution (2017-2023)

Reason for LSL Replacement	2017	2018	2019	2020	2021	2022	2023	Total (%)
Leak or failure	437	547	670	629	508	558	373	3722(61)
Child cares and schools	150	204	129	48	67	77	42	717 (12)
Water main relay project	18	143	177	162	198	152	15	865 (14)
Owner initiated	11	39	23	24	27	30	12	166 (3)
Other infrastructure projects	6	0	1	25	186	174	260	652 (10)
<b>Total LSL Replacements</b>	<b>622</b>	<b>933</b>	<b>1000</b>	<b>888</b>	<b>986</b>	<b>991</b>	<b>702</b>	<b>6122 (100)</b>
<b>Total Filter Distribution</b>	<b>1164</b>	<b>1359</b>	<b>1417</b>	<b>970</b>	<b>971</b>	<b>875</b>	<b>770</b>	<b>7526</b>

## *Lead service line financial impact*

- Average full replacement cost as of June 30, 2023: \$9,525
  - Private side: \$4,681
  - Public side: \$4,844
- One- to four-family residential property cost share for mandated replacements limited to \$1,592 as of March 1, 2023 (one-third the cost of private side)
- 2023 Budget – 1200 Replacements
  - 500-550 leak or failures
  - 50-75 licensed child care facilities
  - 550-600 planned projects (included with water main replacement, prior to pavement reconstruction, coordinated with sewer lateral replacement)

- Lead-safe information provided with filter pitchers
- Semi-annual insert with lead safety information in municipal service bills
- Annual mailing of lead safety information to properties
- Consumer Confidence Report bill insert with lead and water information
- Online public-side LSL inventory updated quarterly
- Information provided via MWW Customer Service (260 LSLR specific calls)
- Website
  - [city.milwaukee.gov/Water](http://city.milwaukee.gov/Water) “Lead and Water” in English and Spanish
  - [city.milwaukee.gov/LeadSafeMKE](http://city.milwaukee.gov/LeadSafeMKE)
  - [city.milwaukee.gov/Leadsafemke-espanol](http://city.milwaukee.gov/Leadsafemke-espanol)
- Lead-Safe brochures, English and Spanish, available at MHD Health Centers, MPL branches, City Hall complex buildings



# Customer outreach



OUR RECORDS INDICATE THE WATER SERVICE LINE  
THAT CONNECTS YOUR PROPERTY TO THE WATER  
MAIN IN THE STREET IS MADE OF LEAD.

## Milwaukee Water Works

Zeidler Municipal Building  
841 N. Broadway, Room 409  
Milwaukee, WI 53202

Reduce the risk of exposure to lead in drinking water from lead service lines and interior plumbing and fixtures.

Households with lead service lines whose occupants include these at-risk persons should drink and cook with tap water filtered with an NSF 53 certified filter:

- Children under 6, especially bottle-fed infants



NUESTROS RÉCORDS INDICAN QUE LA LÍNEA DE SERVICIO DE AGUA QUE  
CONECTA SU PROPIEDAD A LA LÍNEA PRINCIPAL DE AGUA DE LA CALLE ESTÁ  
HECHA DE PLOMO.

Reduzca el riesgo de exposición al plomo en el agua potable de las líneas de servicio de plomo y tubería y accesorios de plomo.

Los hogares con líneas de servicio de plomo cuyos ocupantes incluyen a personas en riesgo, dichas personas deben beber y cocinar solamente con agua del tubo filtrada por un filtro certificado NSF 53:

- Niños menores de 6 años, especialmente los infantes alimentados en botella
- Mujeres embarazadas o que podrían quedar embarazadas (edades 15-45)
- Mujeres en período de lactancia

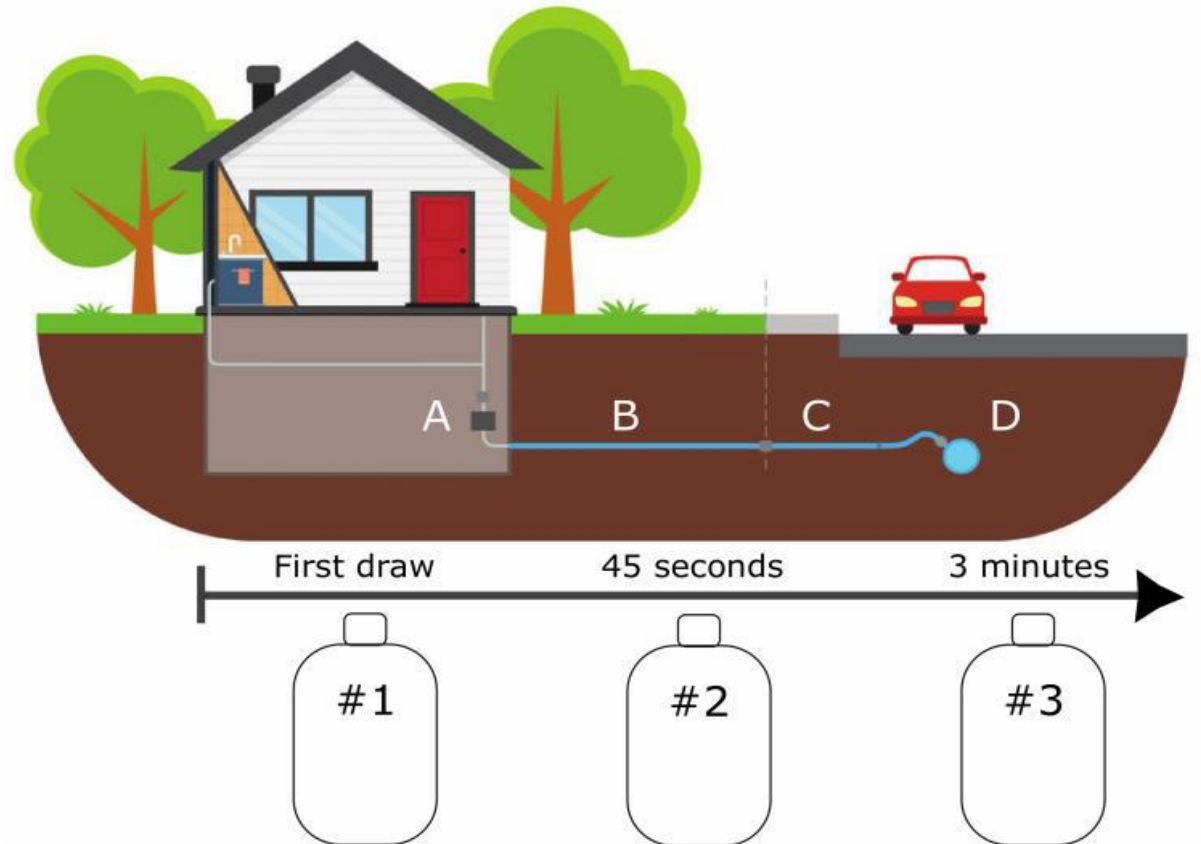
Estos clientes podrían ser elegibles para un filtro gratis de parte del Departamento de Salud de Milwaukee.

Para todos los que tienen una línea de servicio de plomo:

- Beba y cocine solamente con agua del grifo de agua fría.
- Deje correr el agua hasta que esté fría antes de usarla para beber o cocinar.
- A menudo desatornille y lave la pantalla al final de cada grifo.
- Enjuague la tubería del hogar al final de cada día de trabajo durante el reemplazo de la tubería principal, la reconstrucción de la calle y del alcantarillado y trabajo de plomería. Los clientes afectados inmediatamente por ciertos proyectos de construcción de la Ciudad reciben un cupón de parte de Milwaukee Water Works.



# Lead Testing – 3 Bottle Protocol



## Sample 1:

Represents your home plumbing: everything from inside the faucet to the water meter (A).

## Sample 2:

Represents your private service line (B) and the public service line (C).

## Sample 3:

Represents the water coming from the public water main (D).

## January - June 2023 Lead Testing Updates

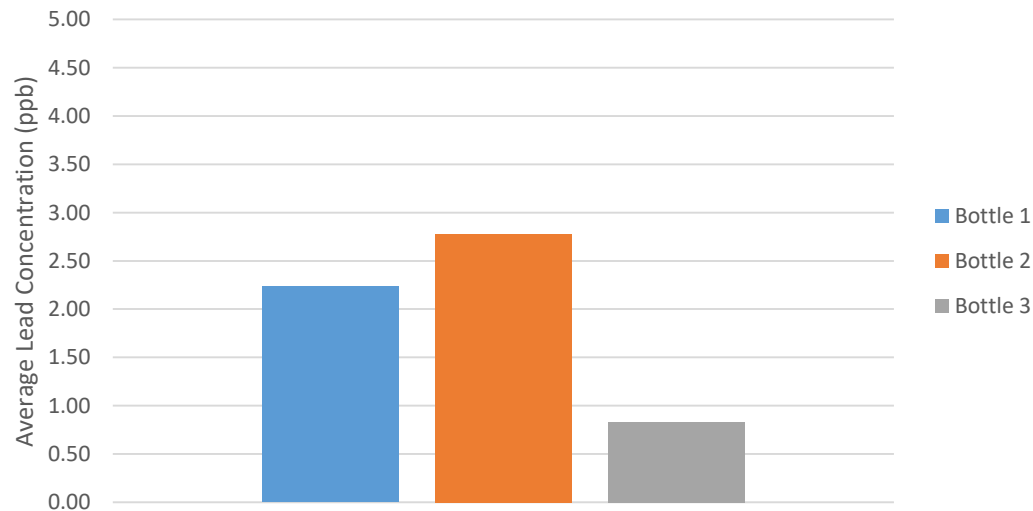
# of Lead Tests	Pre-LSLR	Post-LSLR	Total
Residences	15	69	84
Childcares	15	30	45
Total	30	99	129

- 129 samples tested for lead (42 properties + re-test)
- One property > 15 ppb
  - Owner reported staying elsewhere with family
  - Confirmed extremely low water usage at property
  - Post LSLR, bottle #1 – internal plumbing issue
  - Flushed and re-tested below 10 ppb

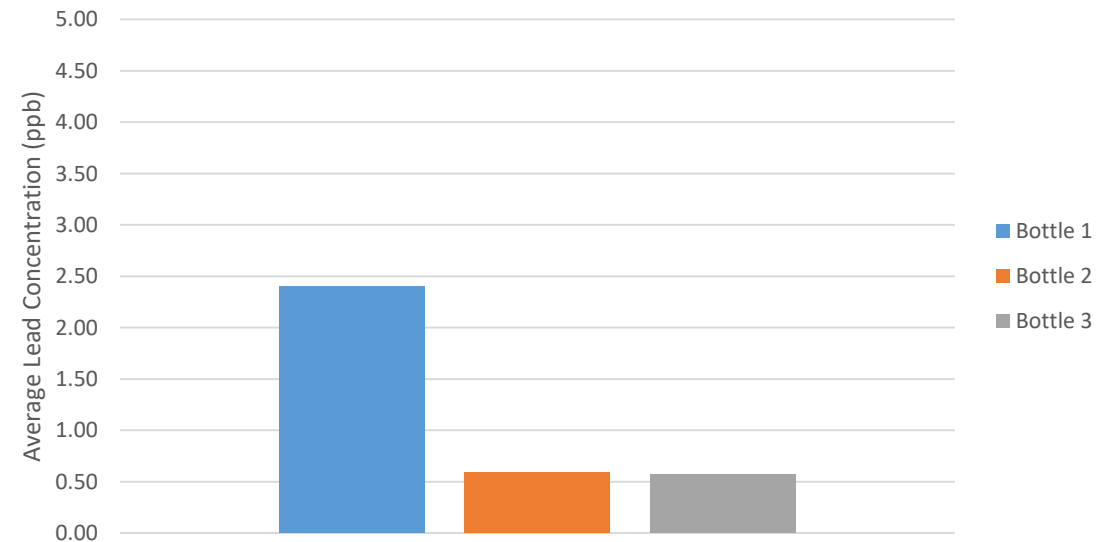
## January - June 2023 Lead Testing Updates

- Pre-LSLR results slightly higher than post-LSLR on average
- Pre-LSLR results highest in bottle #2 (represents LSL)
- All pre-LSLR testing below 15 ppb action level
- Post-LSLR results highest in bottle #1 (represents internal plumbing)
- Average lead concentrations were below 5 ppb, even with a LSL

2023 Pre-LSLR Lead Testing



2023 Post-LSLR Lead Testing

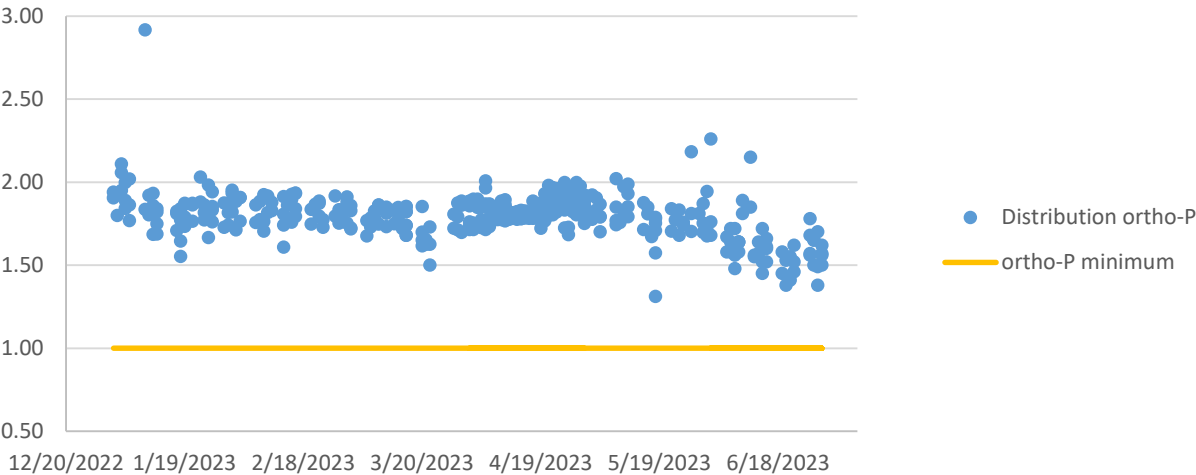




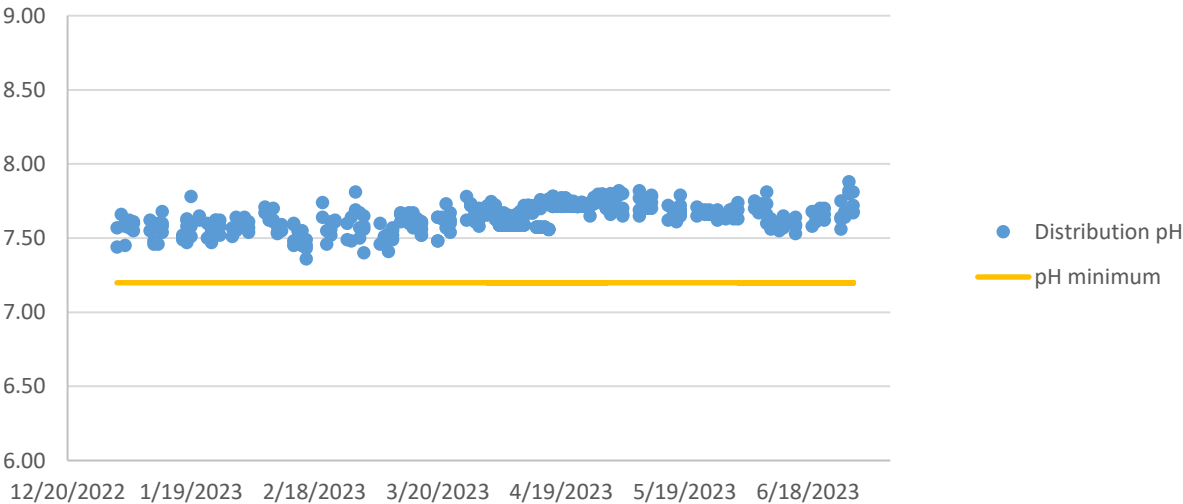
# January - June 2023 Optimal Water Quality Parameter Results

pH and orthophosphate (ortho-P) are monitored closely to prevent corrosion of lead service lines and lead internal plumbing

Milwaukee Water Works ortho-P Levels



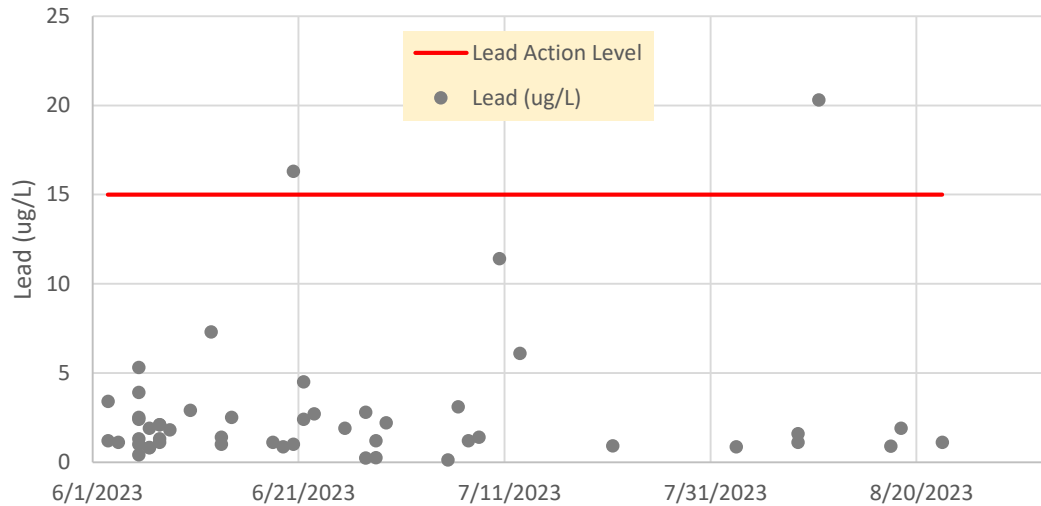
Milwaukee Water Works pH Levels



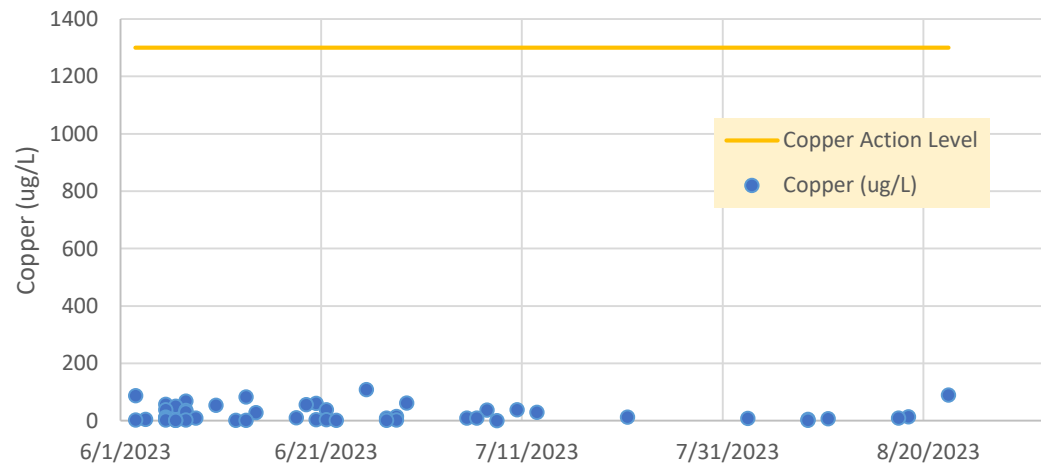
Alkalinity around 105 mg/L also helps to prevent corrosion

# 2023 Lead and Copper Rule Compliance Sampling Update

2023 LCR Compliance Testing - Lead



2023 LCR Compliance Testing - Copper



## Lead and Copper Rule

- Once every 3 years (frequency increasing next year) – **June 1<sup>st</sup> through September 30<sup>th</sup>**
- 50 samples from customer taps (100 starting next year) (kitchen or bathroom sinks)
- Must have lead service line with no filter
- First draw sample (5<sup>th</sup> liter starting next year)
- Analyzed for lead and copper
- Third set of results received today, a few more samples possible
- Compliance based on 90<sup>th</sup> percentile
- Action levels: **15 ppb** for lead, **1300 ppb** for copper
- Two samples above 15 ppb – both customers contacted immediately

## LSLR Prioritization and Expansion Plan

- EPA allocations to State of WI
  - \$48.3M for FFY 2022 and \$81.2M for FFY 2023
  - Administered by DNR through Safe Drinking Water Loan Fund (SDWLP)-LSLR Program
    - Funds for FFY 2022 & 2023 are available for SFY 2024
  - 49% principal forgiveness; 51% low interest (0.25%) loans
  - FFY 2024-2026 allocations are expected to be \$81.2M
  - EPA funding is anticipated to last more than 5yrs
- WI DNR Safe Drinking Water Loan Program(SDWLP)-LSLR Program for SFY 2024
  - Two applications (city wide and census tract) submitted in June - 3,000 replacements, \$30.1M
  - Replacements to occur from July, 2023 through 2024
  - The City of Milwaukee qualifies for principal forgiveness (PF) funding
  - Public side costs are now eligible – low interest loan funding anticipated
  - Funding award anticipated in September – will include PF and loan funding

## LSLR Prioritization Plan and Expansion Program

- Prioritize replacements by census block group utilizing three factors
  - Area Deprivation Index (ADI) – 70% weight
  - Incidences of Elevated Blood Lead Levels (EBLL)(5 mcg/dL) – 25% weight
  - Density of LSL's – 5% weight
- Assign a score to each census block group to create a prioritization order
- Acknowledge the geographic disparities in the City
  - Approximately 60% of LSL's, EBLL incidences, and census blocks that have high ADI scores are on the north side
- Projects located in prioritized areas (census tract data) are eligible for a higher percentage of principal forgiveness funding (100% vs 75%)



## LSLR Prioritization Plan and Expansion Program

- Increase the number of LSLR's by 1,000 per year in 2024
  - Retain an Owners Representative to administer the program
    - RFP advertised on August 9. Proposals due on September 14
    - Administer all aspects of program from customer outreach to record updating
  - Establish a base for additional increases in subsequent years
- Potential Ordinance Changes
  - Eliminate or reduce the property owner cost-share
  - Reduce timeline for consent on planned projects from 30 to 10 days
  - Codify the disadvantaged community prioritization as a planned project

*Thank you*



Lead and Water Information

[Milwaukee.gov/Water/WaterQuality/Lead and Water](https://milwaukee.gov/Water/WaterQuality/Lead%20and%20Water)