

FYI in 45

# Sweeping Implications of the Lead and Copper Rule Revisions

Panelists:

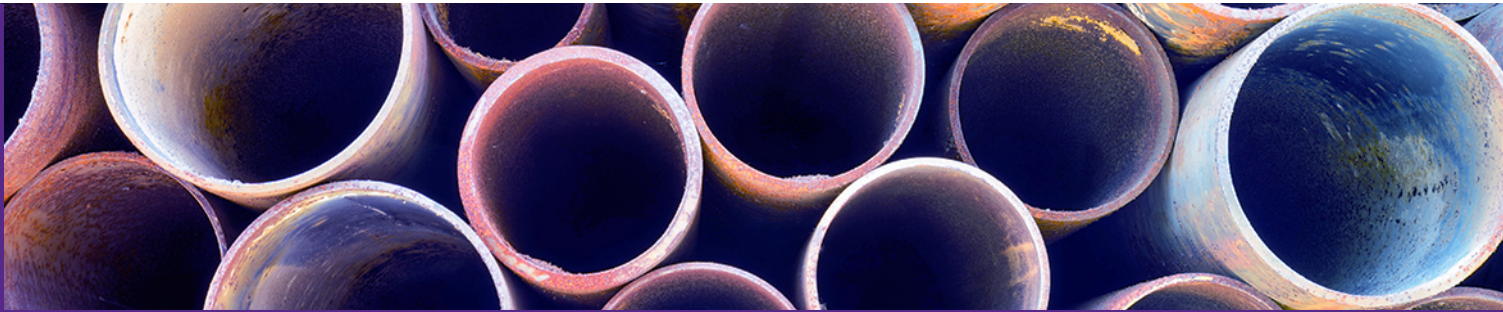
Sandra Kutzing

Amrou Atassi

Moderated by:

Andrew Beaton

*January 29, 2020*



**CDM  
Smith**

# Today's Discussion Will Focus On

- Key takeaways from the proposed LCR revisions
- Methods to analyze existing corrosion control
- Tactics to evaluate alternatives to optimize corrosion control
- Lessons learned on point-of-use filtration



# Before We Begin...



**Technical  
Difficulties\***



**Webinar is  
being recorded**



**Questions are  
encouraged**



**PDH  
certificate**

\* Contact our webinar executive producer: Danielle Jackson

# Meet the Experts



**Sandra Kutzing, PE, PMP**  
Environmental Engineer  
Principal



**Amrou Atassi, PE, BCEE, PMP**  
Environmental Engineer  
Vice President

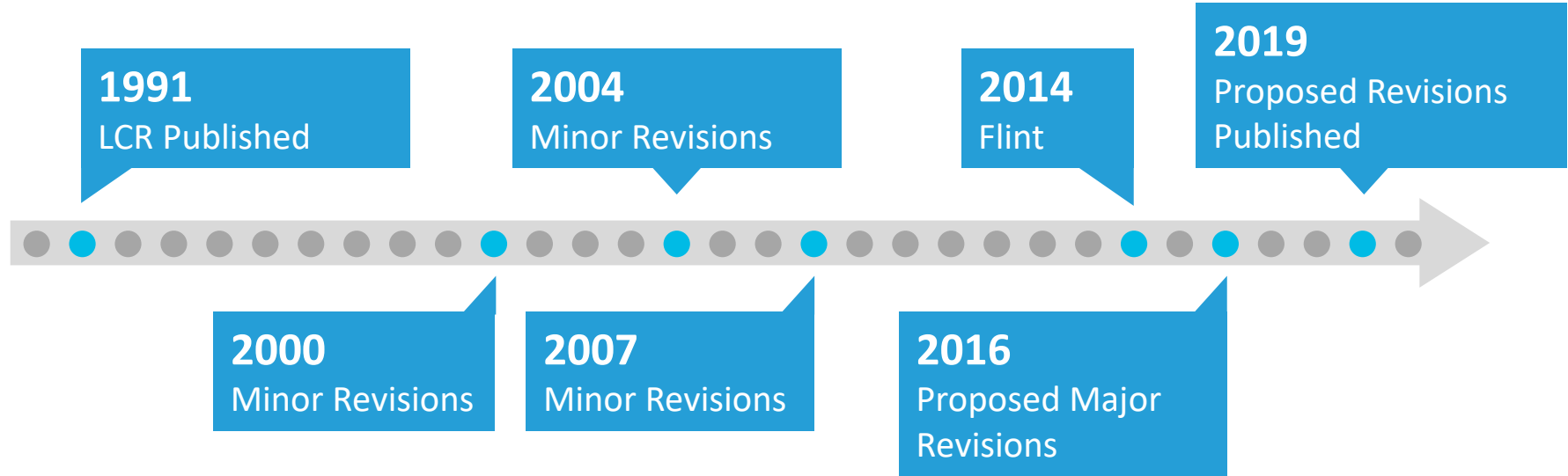


# What You Need to Know about LCR Changes

# US EPA Lead and Copper Rule



# History of the US EPA Lead and Copper Rule



# Proposed Changes to Sampling

- 1 Focusing sampling on sites served by LSLs
- 2 Changes in sample procedures
- 3 Notification within 24 hours
- 4 “Find and Fix”

# Trigger Limit and Sampling Frequency

<b>P90 &gt; 15 <math>\mu\text{g/L}</math></b>	Semi-annually at the standard number of sites
<b>P90 &gt; 10-15 <math>\mu\text{g/L}</math></b>	Annually at the standard number of sites
<b>P90 &lt; 10 <math>\mu\text{g/L}</math></b>	Potentially triennially at reduced number of sites using same criteria as current rule

# Trigger Limit and Corrosion Control Treatment

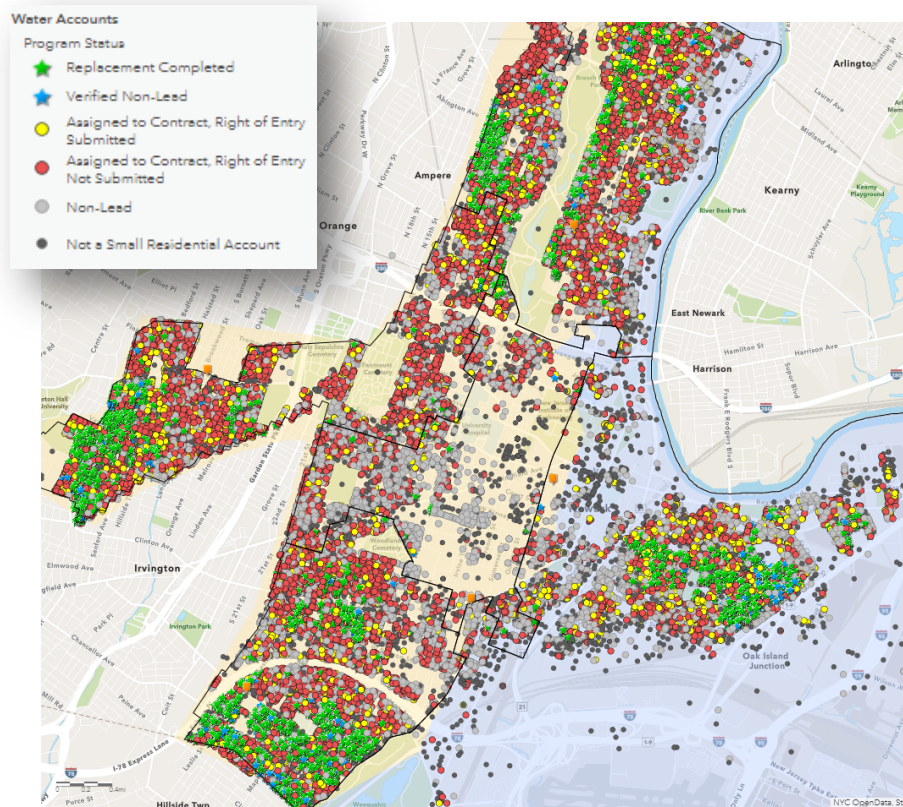
P90 > 15 $\mu\text{g/L}$	No CCT	Complete CCT installation
	Have CCT	Reoptimize
P90 > 10-15 $\mu\text{g/L}$	No CCT	Conduct study, make recommendations to State
	Have CCT	Reoptimize
P90 < 10 $\mu\text{g/L}$	No CCT study required	



# Trigger Limit and Lead Service Line Replacement

<b>P90 &gt; 15 <math>\mu\text{g/L}</math></b>	Replace 3% of full LSLs annually
<b>P90 &gt; 10-15 <math>\mu\text{g/L}</math></b>	Implement an LSLR program with replacement goals set by State
<b>P90 &lt; 10 <math>\mu\text{g/L}</math></b>	Develop an inventory and LSLR plan

# Lead Service Line Replacement Plan



- Develop a materials inventory
- If you do not have a replacement plan, need to develop one
- You'll need procedures to conduct full LSLRs

# Lead Service Line Replacement Considerations




- Funding strategy is required
- Unknown service lines initially count towards total LSL
- Partial replacements no longer count
- Verifying unknown SL as non-lead does not count towards replacement total



# Public Education & Outreach



# US EPA Reference Guide



**Reference Guide for Public Water Systems:  
Lead and Copper Rule Proposal Comparison**

EPA's proposed Lead and Copper Rule (LCR) includes a suite of actions to reduce lead exposure in drinking water where it is needed the most. The proposed rule will identify the most at-risk communities and ensure systems have plans in place to rapidly respond by taking actions to reduce elevated levels of lead in drinking water. For more information on the proposed rule, please visit: [www.epa.gov/safewater/LCRproposal](https://www.epa.gov/safewater/LCRproposal)

The following table compares the major differences between the current Lead and Copper Rule (LCR) and proposed Lead and Copper Rule revisions (LCRR). In general, requirements that are unchanged are not listed. For existing rule requirements please visit: <https://www.epa.gov/dwreginfo/lead-and-copper-rule>

CURRENT LCR	PROPOSED LCRR
<b>Action Level (AL) and Trigger Level (TL)</b>	
<ul style="list-style-type: none"> <li>90<sup>th</sup> percentile (P90) level above lead AL of 15 µg/L or copper AL of 1.3 mg/L requires additional actions.</li> </ul>	<ul style="list-style-type: none"> <li>90<sup>th</sup> percentile (P90) level above lead AL of 15 µg/L or copper AL of 1.3 mg/L requires more actions than the current rule.</li> <li>Defines trigger level (TL) of P90 &gt; 10 and ≤ 15 µg/L that triggers additional planning, monitoring, and treatment requirements.</li> </ul>
<b>Lead and Copper Tap Monitoring</b>	
<b>Sample Site Selection</b> <ul style="list-style-type: none"> <li>Prioritizes collection of samples from sites with sources of lead in contact with drinking water.</li> <li>Highest priority given to sites served by copper pipes with lead solder installed after 1982 but before the ban on lead pipes and/or lead service lines (LSLs).</li> <li>Systems must collect 50% of samples from LSLs, if available.</li> </ul>	<b>Sample Site Selection</b> <ul style="list-style-type: none"> <li>Changes priorities for collection of samples with a greater focus on lead service lines.</li> <li>Prioritizes collecting samples from sites served by LSLs.</li> <li>No distinction in prioritization of copper pipes with lead solder by installation date.</li> <li>Systems must collect all samples from sites served by LSLs, if available.</li> </ul>
<b>Collection Procedure</b> <ul style="list-style-type: none"> <li>Requires collection of a one-liter sample after water has sat stagnant for a minimum of 6 hours.</li> </ul>	<b>Collection Procedure</b> <ul style="list-style-type: none"> <li>Adds requirement that samples must be collected in wide-mouth bottles.</li> <li>Prohibits sampling instructions that include recommendations for aerator cleaning/removal and pre-stagnation flushing prior to sample collection.</li> </ul>

1
October 2019

The background of the image is a dense, overlapping pattern of numerous circular openings, resembling the ends of pipes or tubes. These openings are colored in various shades of blue and purple, with some showing a slight gradient from light to dark. The overall effect is a textured, almost abstract pattern that fills the entire frame.

# Optimizing Your Corrosion Control

# Optimizing Your Corrosion Control

## Methods to Analyze Existing Corrosion Control

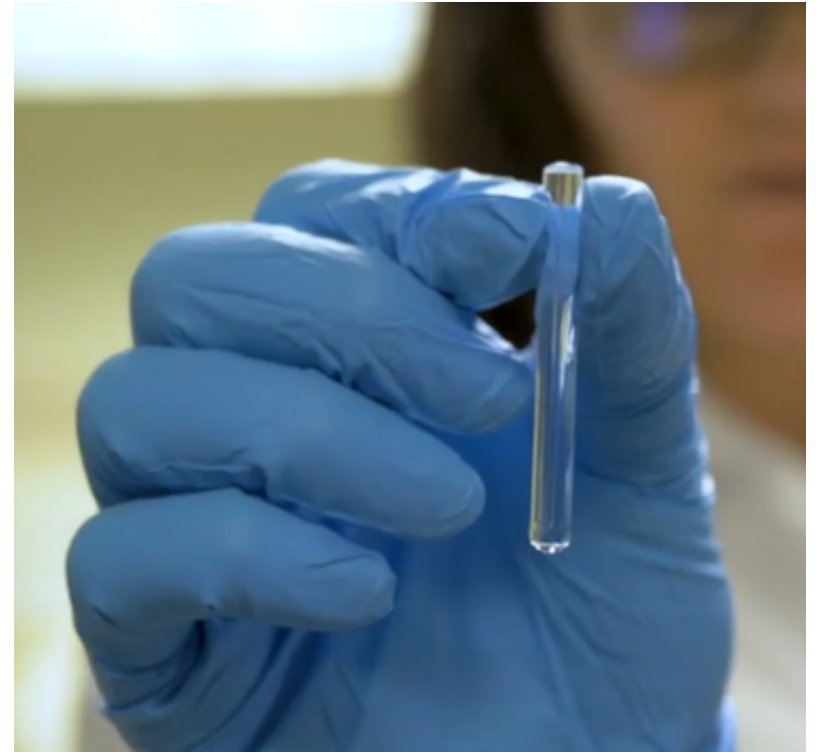
- Water Quality Studies
- Desktop Studies
- Scale Analysis
- Sequential Sampling

## Methods to Evaluate Alternatives to Optimized Corrosion Control

- Coupon Studies
- Pipe Loops
- Repeated Sequential Sampling

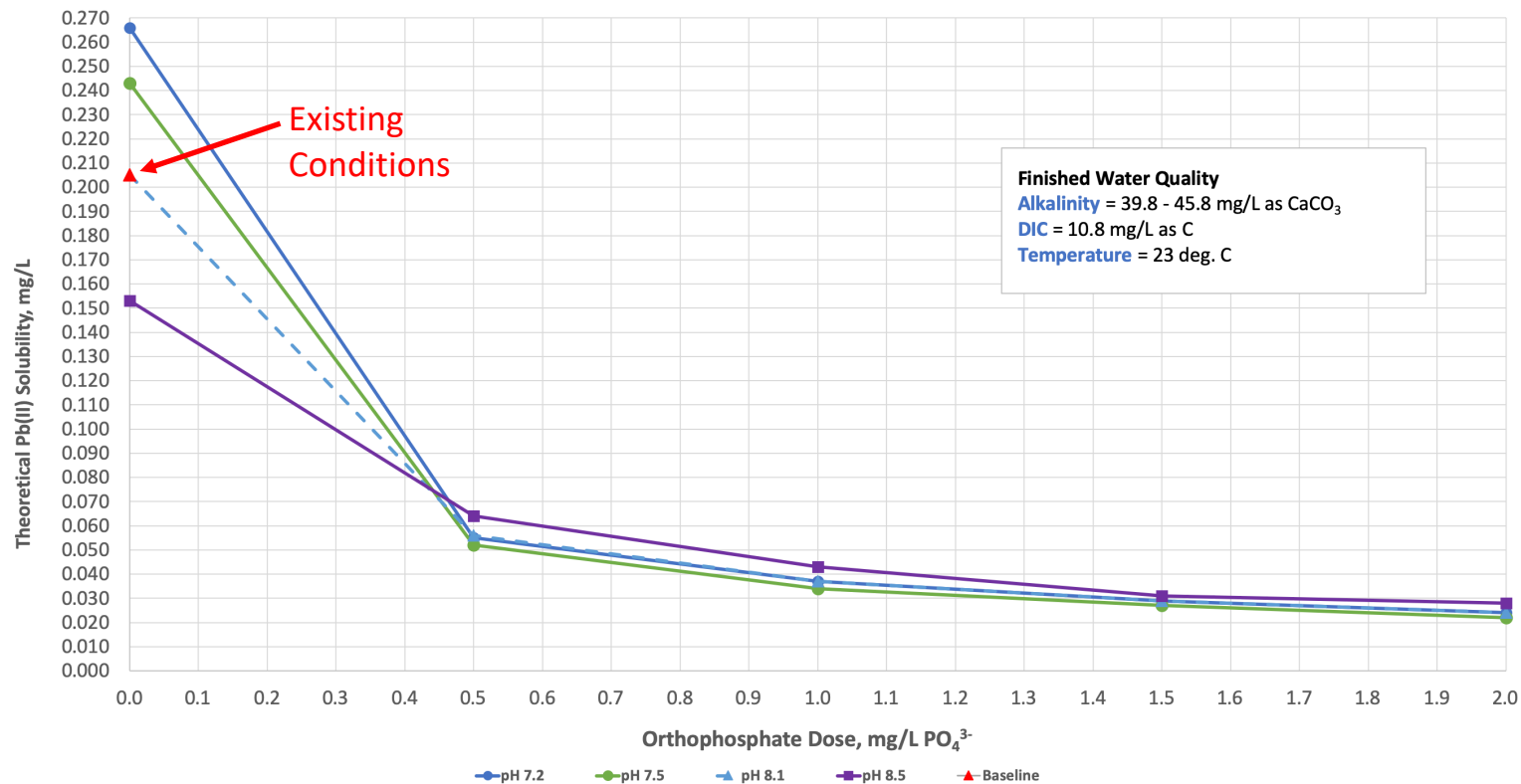


# Water Quality Studies

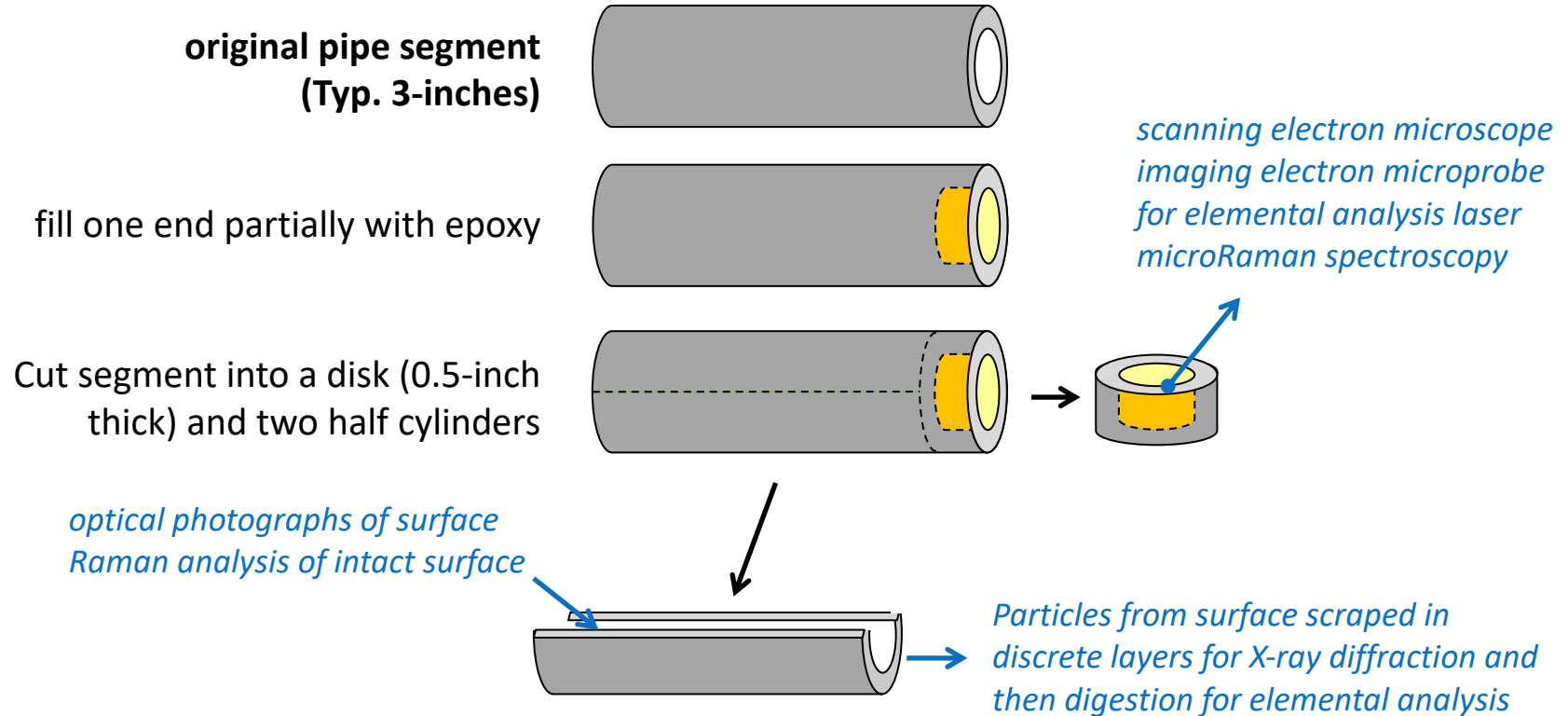




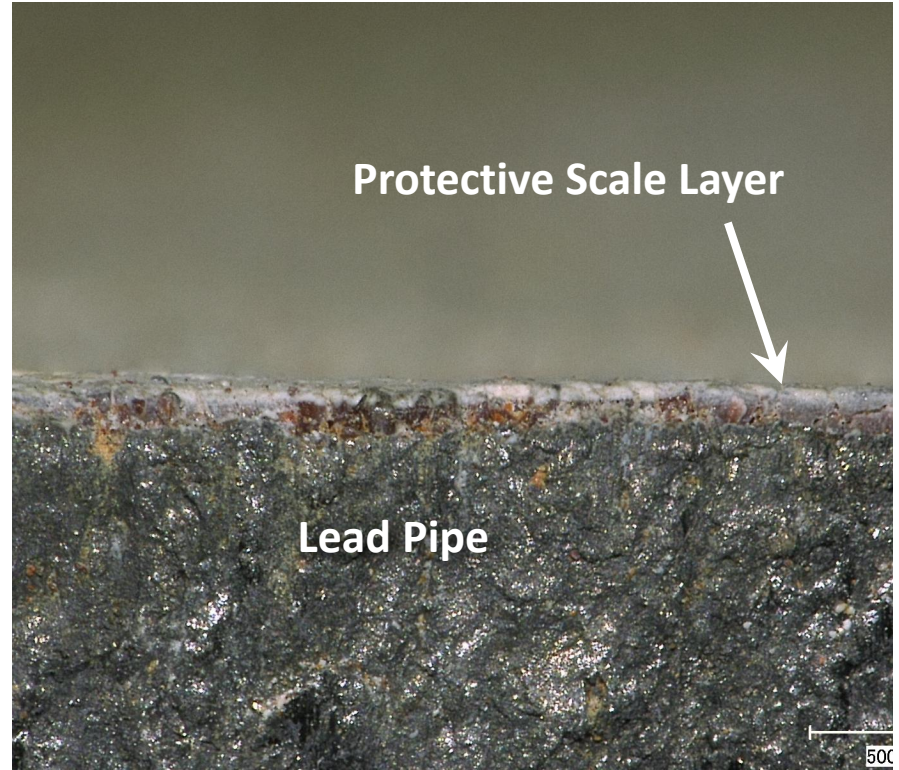
# Desktop Studies



# Scale Analysis



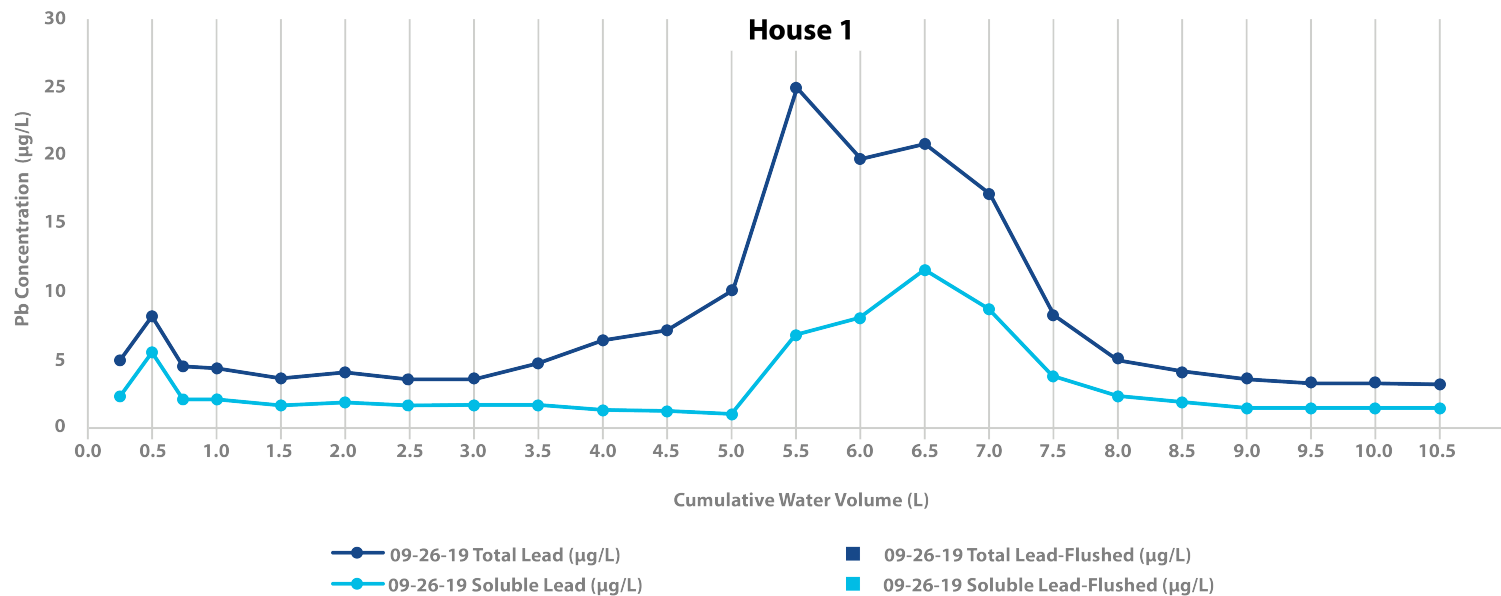
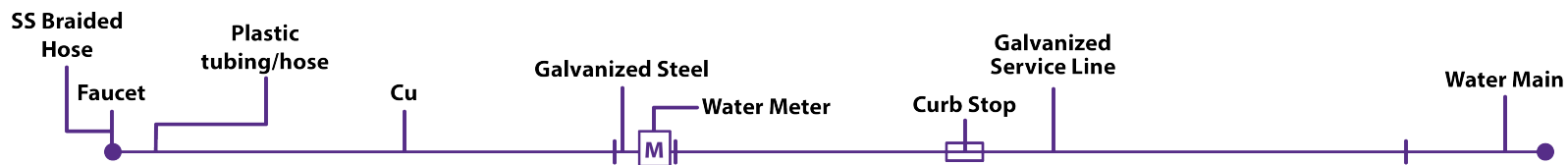
# Scale Analysis



# Sequential Sampling

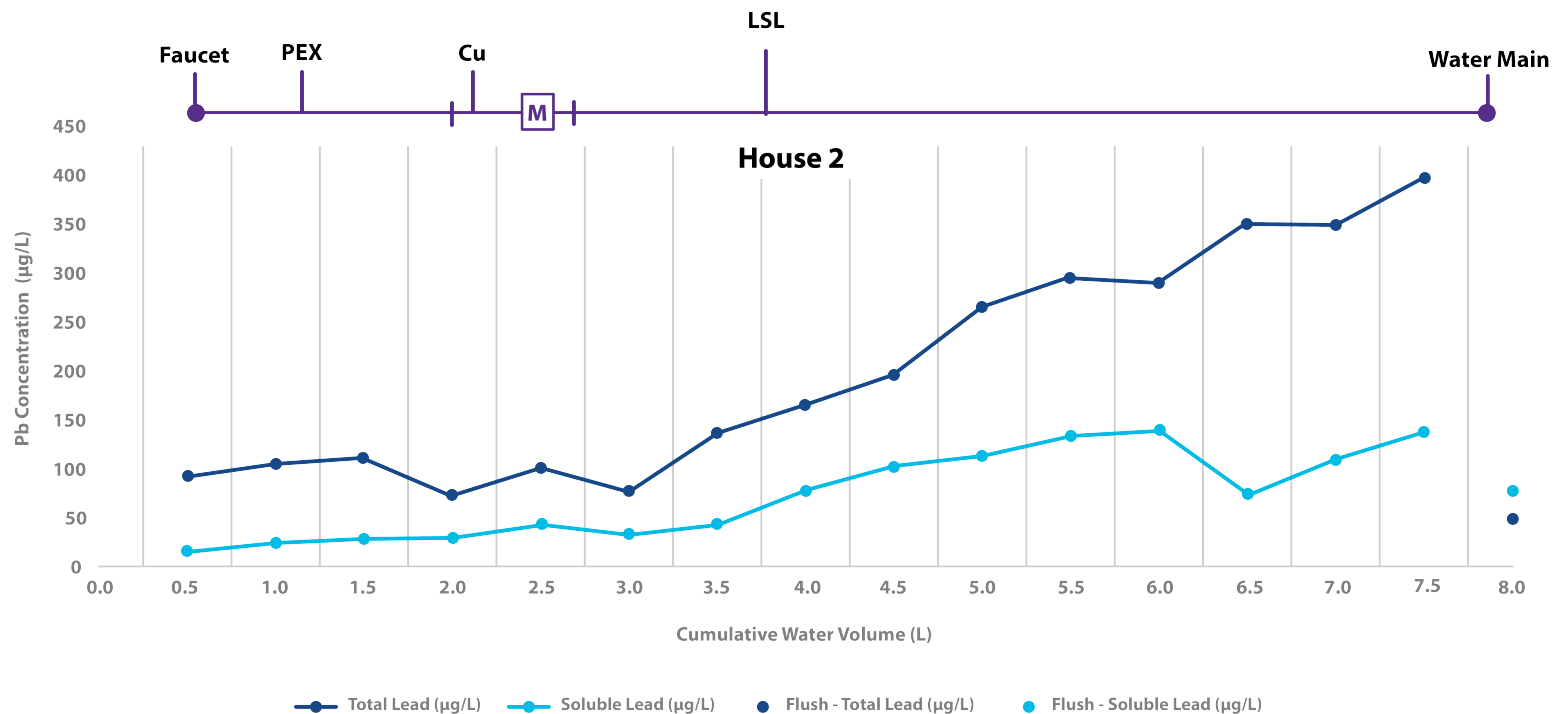


# Sequential Sampling

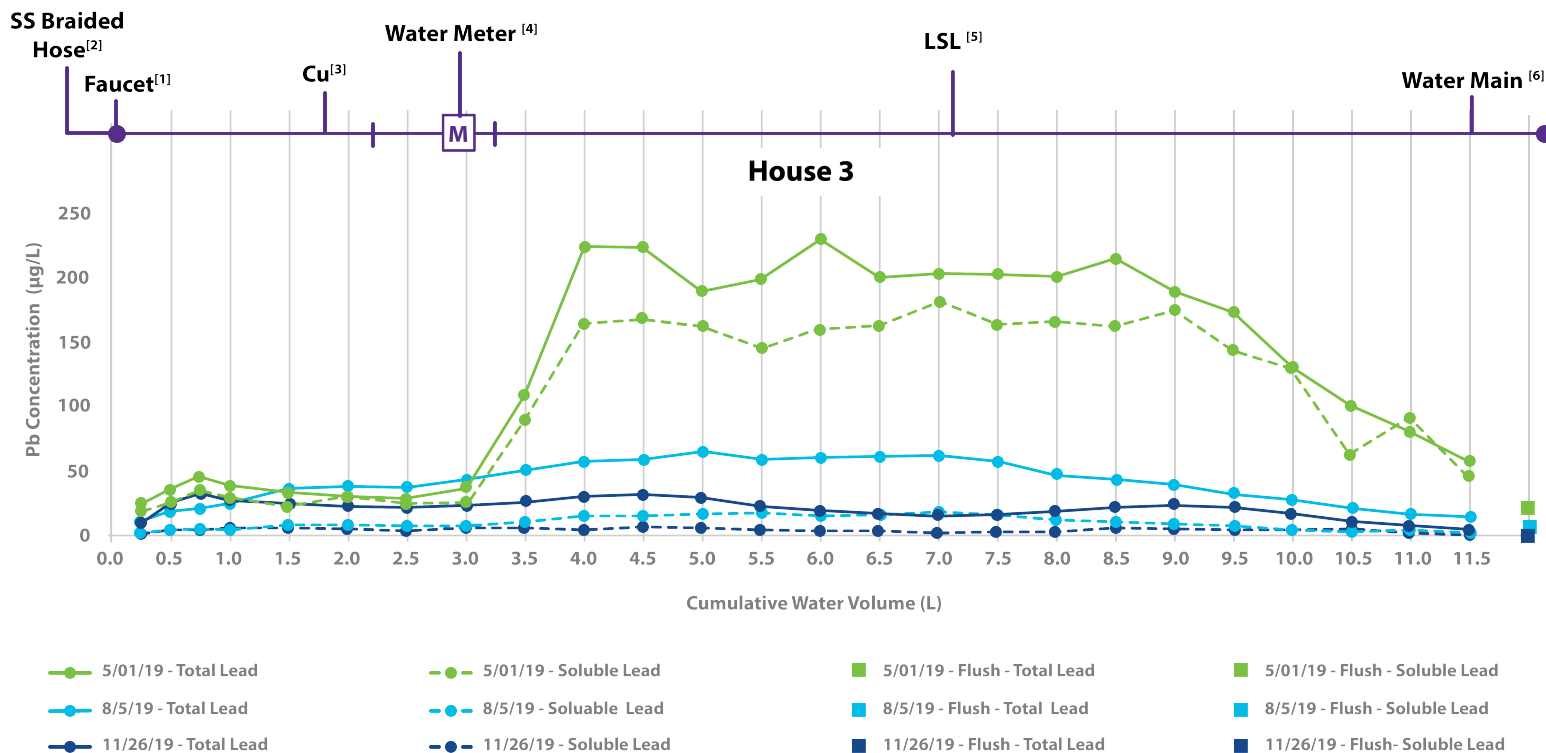




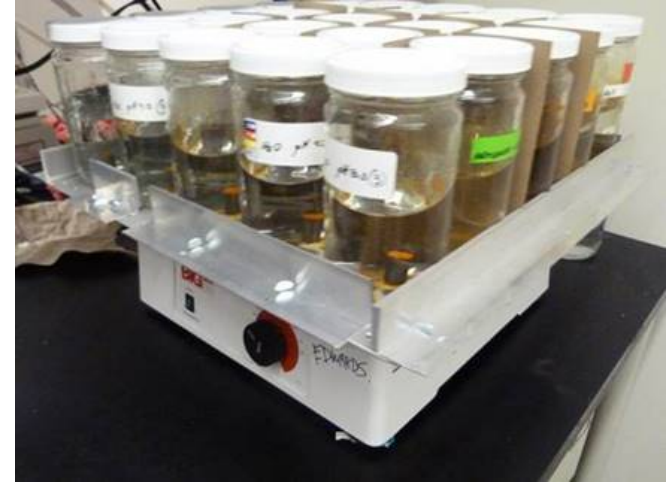
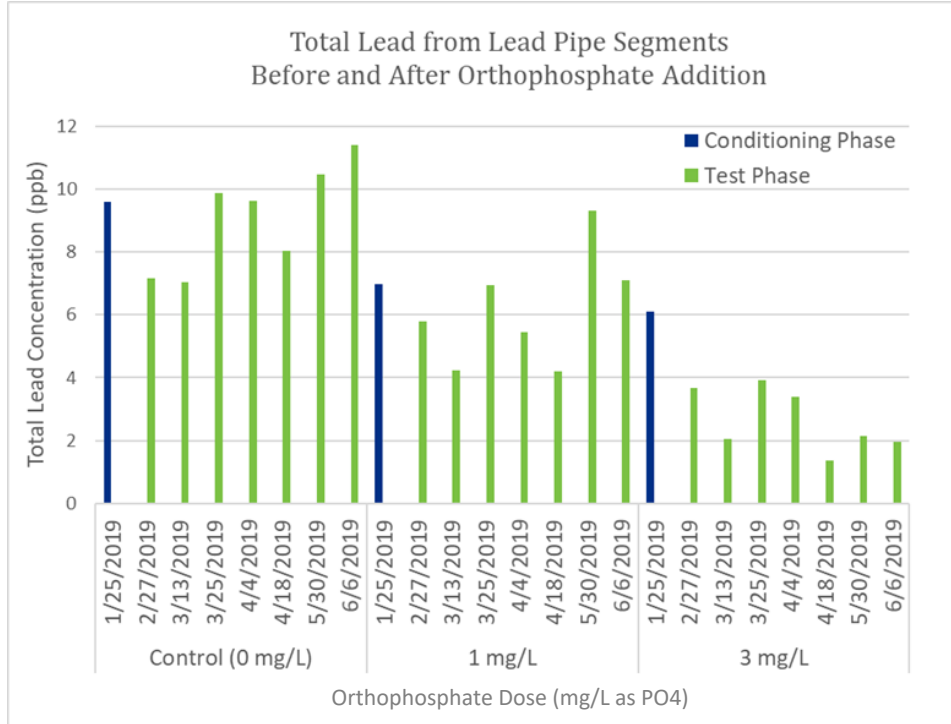
# Sequential Sampling



# Sequential Sampling

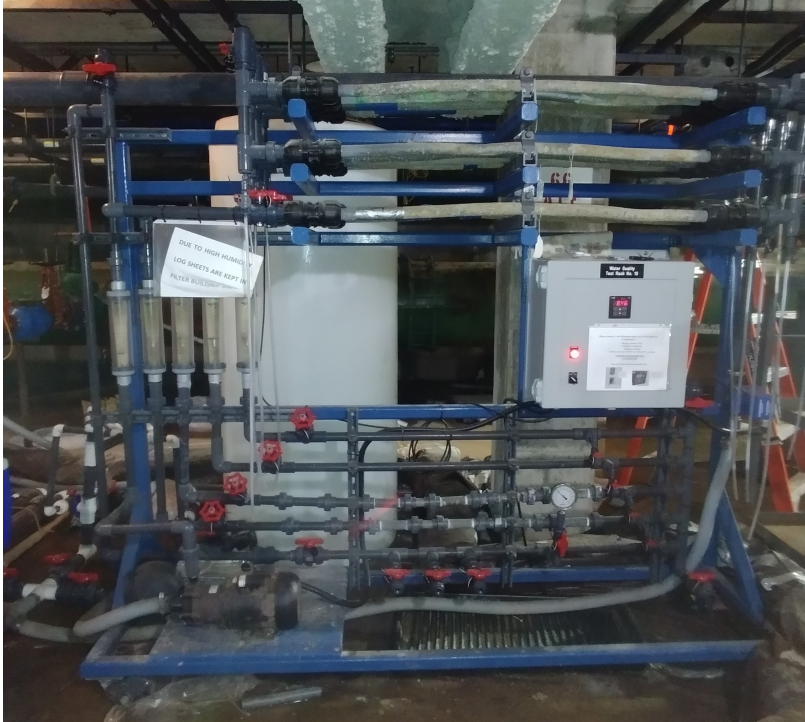


# Coupon Studies





# Pipe Loops



# Where Should You Start?

1

Evaluate what's in your system:

- Desktop study
- Sequential sampling
- Scale analysis

2

Start your materials inventory now



# Achieving an Effective POU Filter Program

# POU Filters in Newark



**38,000**

POU Filters



**2/3**

Exceeded 10ppb

# POU Filters in Newark: Expanded Sampling



**316**

Homes



**4**

Weeks

# Flushing Before Sampling

Filters were found to be most effective when the service line was flushed for at least 5 minutes prior to filtering

All Flushed samples when WM reached	Without flushing first
100% of the filters tested reduced lead to below 10 ppb	97.5% of filters reduced lead to below 10 ppb



## CITY OF NEWARK, NEW JERSEY Lead Service Line Replacement Program

Overview

Water Filters

Service Line Replacement

Health Info

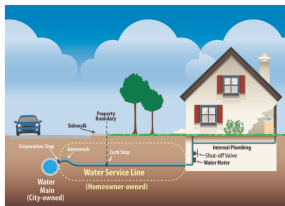
### WHAT IS A WATER SERVICE LINE AND WHO OWNS IT?

A water service line is the pipe that runs from the water main to a home or building's internal plumbing. They are the pipes that carry water from the City's water main in the street into homes and other buildings. The water service lines in Newark are owned by the individual property owners, from the water main in the street to the water meter in the home.

### WHAT IS A LEAD SERVICE LINE?

A lead service line is a water service line that is completely or partially made of lead components. In Newark, property owners own the entire lead service line.

### WHAT IS A FULL LEAD SERVICE LINE REPLACEMENT?



3. Use a key or coin to gently scratch the pipe (like you would scratch a lottery ticket). If the pipe is painted, use sandpaper to expose the metal first.
4. Place the magnet on the pipe to see if it sticks to the pipe.
5. Determine your pipe material and send your results and address to [info@newarkleadservice.com](mailto:info@newarkleadservice.com)

#### Your Test Results



If your pipe is **copper**:  
The pipe may appear dull brown on the outside but will be the color of a bright penny if gently scratched. A magnet won't stick to a copper pipe.

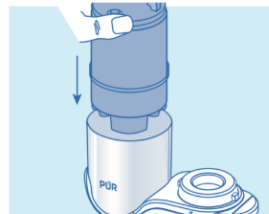


If your pipe is **lead**:  
The pipe will appear dull and soft but will turn a shiny silver color when scratched. A magnet won't stick to a lead pipe.



If your pipe is **galvanized steel**:  
The scratched area will remain a dull gray, and a magnet will stick to the surface. If you have a galvanized steel pipe, you may still have a lead gooseneck on your service line.

Please send your results and address to [info@newarkleadservice.com](mailto:info@newarkleadservice.com)



## Lead Service Line Replacement Program

The largest opportunity to reduce the risk of exposure to lead in drinking water is to remove the lead service line that brings water to your home from the water main in the street. The City of Newark is launching a Lead Service Line Replacement Program that will remove 15,000 lead service lines over the next eight years.

replaced to date

336

#### ON THIS PAGE

[About the Program](#)

[Lead Service Lines](#)

[Check Your Line](#)

[Replacing Your Line](#)











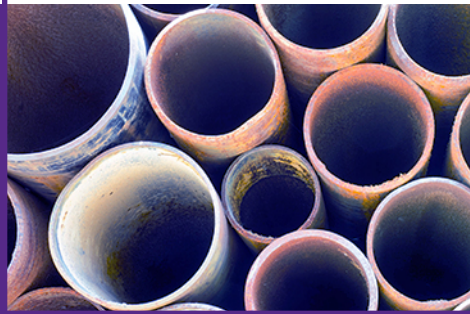
# Final Thoughts

# Biggest potential impacts

- 1 Orthophosphate preference
- 2 Unknowns counted as LSLs
- 3 New trigger limit
- 4 Larger sampling pool
- 5 The need for more funding!



# Questions & Answers



Thank You