



We work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water.



LEAD & COPPER RULE: ROUTINE MONITORING & SITE SELECTION

Washington State Department of Health
Office of Drinking Water



Contact Information

Kay Rottell, P.E.
Assistant Regional Manager
Southwest Regional Office

360-236-3024
kay.rottell@doh.wa.gov

doh.wa.gov/DrinkingWater



handle: WADeptHealth



Overview

- Regulation of Lead and Copper in Drinking Water
- Materials Assessment / Service Line Inventory
- Sampling Plan
- Sampling Methods



Regulations





A Brief History: Lead and the Safe Drinking Water Act

- 1986 SDWA Lead Ban
- 1991 Lead and Copper Rule (LCR) enacted
- 2000 LCR Minor Revisions
- 2004 LCR minor corrections and clarifications
- 2007 Short-Term Revisions to LCR
- 2011 Reduction of Lead in Drinking Water Act: redefined "lead-free" definition (Codified in SDWA 2020)
- 2021 LCR Long-Term Revisions



LCR: Long-Term Revisions

Published in Federal Register January 15, 2021

Effective Date extended until June 17, 2021

Proposed Comply by Date September 16, 2024



Lead and Copper Rule

Community and NTNC water systems

- Minimize lead and copper at the tap
- Treatment Technique Rule (Demonstrate or install OCCT)
- Lead/copper as Action Level (AL), not MCL





Lead and Copper Rule: Action Levels (AL)

Lead

Action Level = 0.015mg/L

New Trigger Level = 0.010 mg/L

MCLG = 0 mg/L

Copper

Action Level = 1.3 mg/L

MCLG = 1.3 mg/L





Lead And Copper Monitoring



Lead and Copper Tap Monitoring

- Targets highest-risk locations based on Tier to ensure water is not corrosive

High Risk Locations

- Sample locations based on system's material assessment and new Service Line Inventory

Materials Assessment

- Can be challenging to rely on customer participation, so select extra locations

Participation

- Recommend using a form to ensure samples collected correctly **before** submitting to lab

Collection Procedures



Materials Assessment

- Required to be completed in 1991
- Community Water Systems were required to identify materials in their distribution system:
 - Lead from piping, solder, interior lining in distribution mains, alloys and home plumbing
 - Copper from piping and alloys service lines and home plumbing
 - Galvanized piping, service lines, and home plumbing
 - Cast Iron, Steel, Asbestos Cement piping



New LCRR Requirement: Service Line Inventory

Service Line Type	
Lead Service Line	Any portion of the line that connect the water main to the building inlet that is made of lead. This may be owned by the water system, the property owner, or both.
Galvanized Requiring Replacement* *If ever downstream of lead service line	A galvanized service line that is or has ever been down stream of a lead service line. If the system is unable to demonstrate the galvanized service line was never downstream of a lead service line it must presume there was upstream lead component. If the only upstream lead component is or was a lead connector (or gooseneck) it is not considered a galvanized service line requiring replacement.



New LCRR Requirement: Service Line Inventory

Service Line Type	
Non-lead	A service line that is determined, through evidence-based record, method, or technique, not to be lead or galvanized requiring replacement. The water system may wish to classify the specific material such as plastic or copper.
Lead Status Unknown	Where the service line material is unknown and there is no documented evidence to support the service line classification.



Developing Service Line Inventories

- Historic construction and plumbing codes
- Existing records or documents of service line material
- Distribution maps and drawings
- Meter installation records
- Historic capital improvement and master plans
- Standard operating procedures
- Inspections and records indicating service line material





Current: Sample Selection Tiering Criteria

Community	NTNC
<p>Tier 1 sampling sites are single family structures</p> <ul style="list-style-type: none">• With copper pipes with lead solder installed 1983–1986 or• Served by a lead service line	<p>Tier 1 sampling sites are buildings</p> <ul style="list-style-type: none">• With copper pipes with lead solder installed 1983–1986 or• Served by a lead service line
<p>Tier 2 sampling sites consist of buildings that meet the Tier 1 criteria</p>	<p>Tier 2 sampling sites consist of buildings with copper pipes with lead solder installed before 1983</p>
<p>Tier 3 sampling sites consist of single family structures with copper pipes with lead solder installed before 1983</p>	
<p>Representative Sample: If a system can't collect enough samples from tiered sites, it must collect them from sites where the plumbing is similar to that used at other sites the water system serves.</p>	





New LCRR: Sampling Tiers

Tier	Description
Tier 1	Single family structures served by lead service lines. When multifamily residences comprise at least 20% of the structures served by the water system they can be used in your Tier 1 sampling pool.
Tier 2	Buildings, including multifamily residences that are served by lead service lines.
Tier 3	Single family structures served by galvanized service lines requiring replacement or known to be downstream of a lead connector such as a gooseneck.
Tier 4	Single family structures that contain copper pipes with lead solder installed prior to the State's lead ban. (1986)
Tier 5	Single family structures and buildings, including multifamily residences that are representative of the plumbing systems within the water system's distribution system.

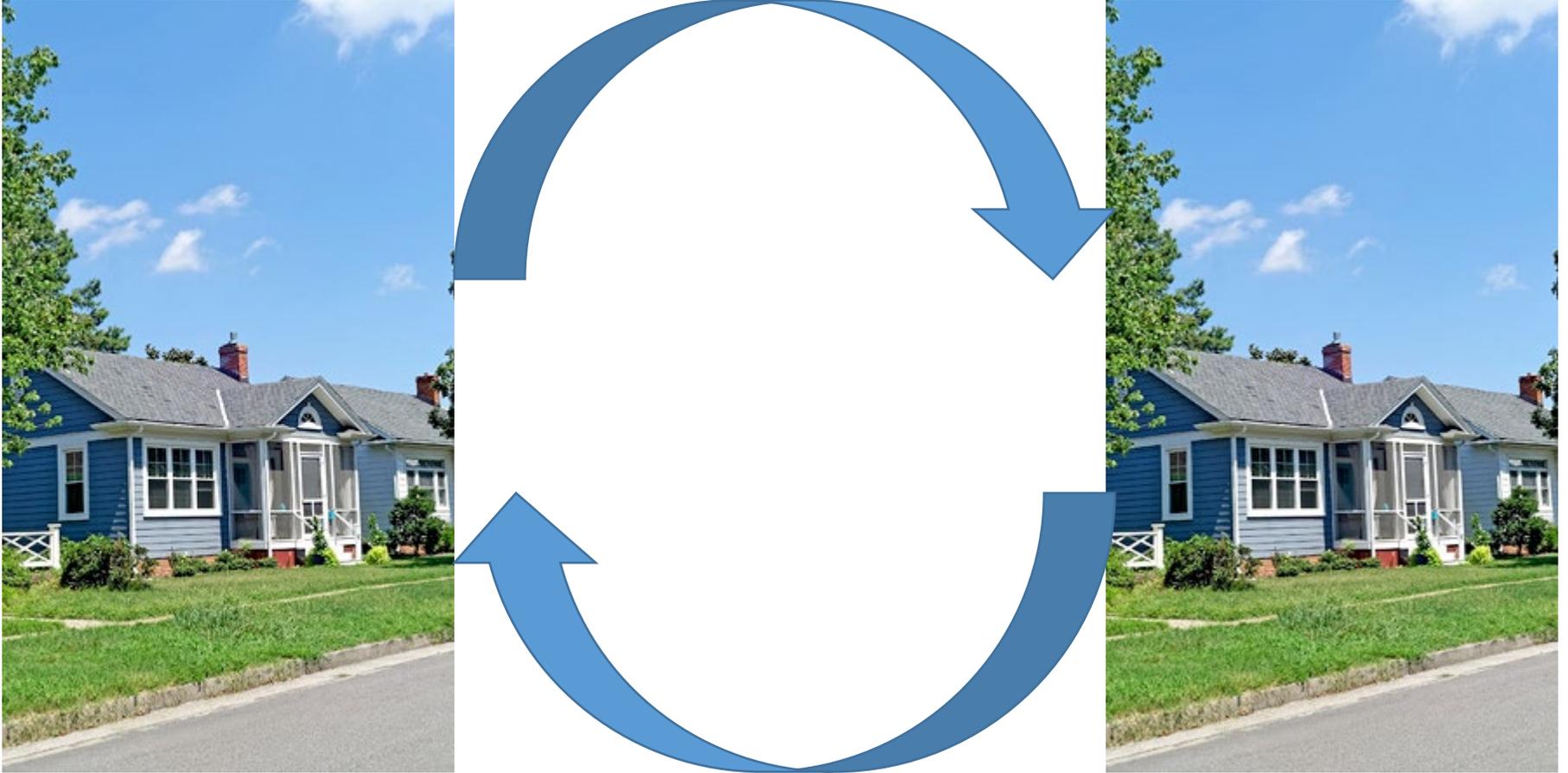


**Must develop your
sample pools from
your Materials
Assessment and
Service line
Inventory.**

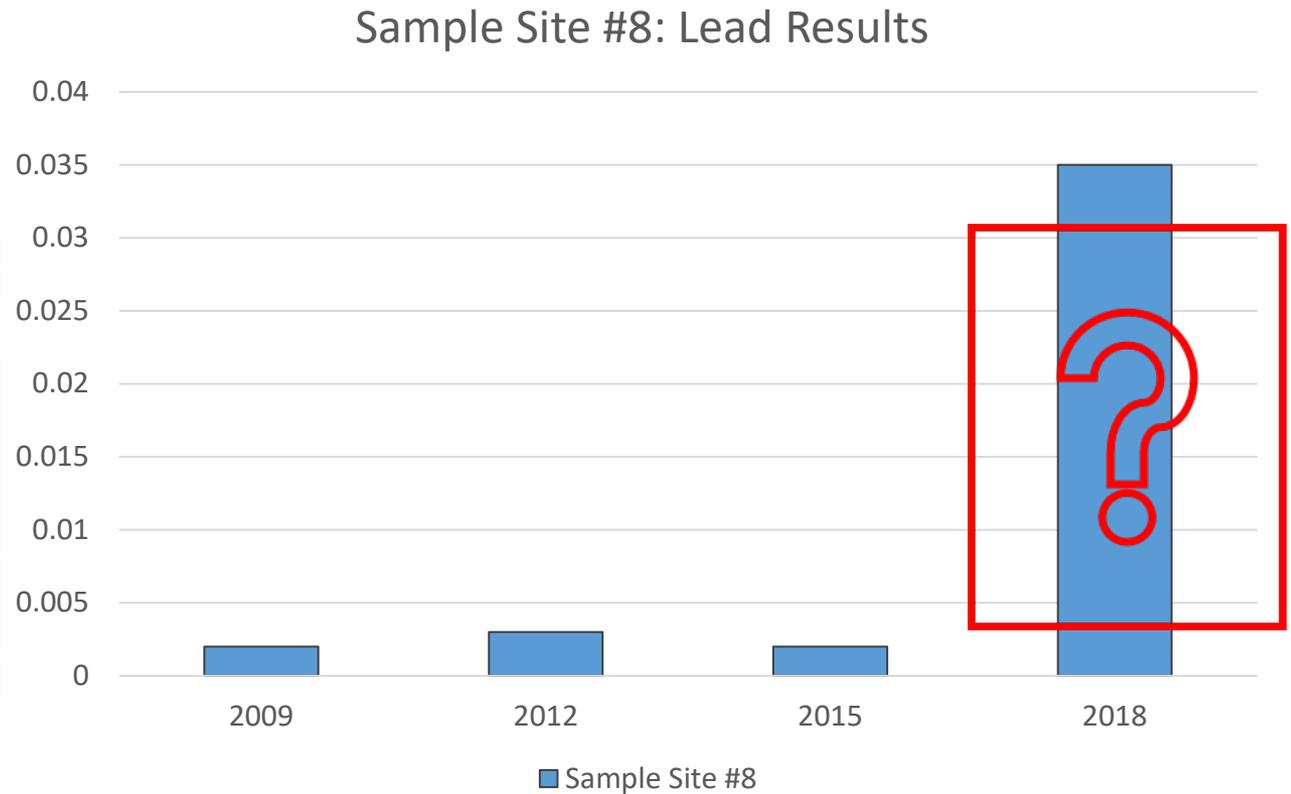
**Continue to create or
update your sample
pool**



Sample the Same Sites



Sample the Same Sites





Sample Collection



Encourage Customer Participation

- Reach out to homeowners prior to sampling period
- Periodic education on sources of lead and copper in drinking water
- Annual notifications to residents served by lead, galvanized in need of replacement, and unknown service lines.
- Water bill credit programs for participating



Lead and Copper Sample Collection

- Collect 1-liter first-draw samples after water sits in pipes for at least 6 hours, but recommend no more than 12 hours

1 Liter First Draw

- Collect from cold-water tap of regularly used kitchen or bathroom faucet. Consumption taps for NTNCs.

Regularly Used Taps

- Collect between June and September for annual or 3-year periods

June to September

- Ensure you know if aerators removed or about any changes in plumbing/treatment.

Physical Changes



Typically Collected by Homeowners

- Assume customers don't have any idea of how to sample!
- Be specific in your instructions
- DOH 331-227 (June 2016)
– Lead and Copper Sampling Procedure



Typically Collected by Homeowners

- Do NOT advise flushing plumbing night before.
- Do NOT advise removal/cleaning of aerators to prepared for sampling



Key Points for Customers

- Samples **must** come from regularly used kitchen or bathroom tap;
- No water should be used for 6 hours;
- First-draw sample must come from cold tap;
- Open tap at full flow.



**Make sure you are
taking samples from
appropriate locations
and under
appropriate
conditions**



Avoiding Problems with Collection



Written, signed questionnaire

- What sink did you use to fill sample bottle?
- Was the home vacant for longer than 24 hours the day before sampling?
- Aerator removed or cleaned? (Y/N)



Potential Sample Problems if:

- ✓ "Garage sink"
- ✓ "House was empty – vacation"
- ✓ "Of course! We're a clean family"





Sampling Sites That Don't Represent Typical Water Quality

- Vacant homes
- Occupants on vacation
- Janitorial sinks
- Schools—collected during or after breaks or summer vacation
- Outside faucets, frost-free faucets, and yard hydrants
- Homes with filters (POE/POU)
- From the source

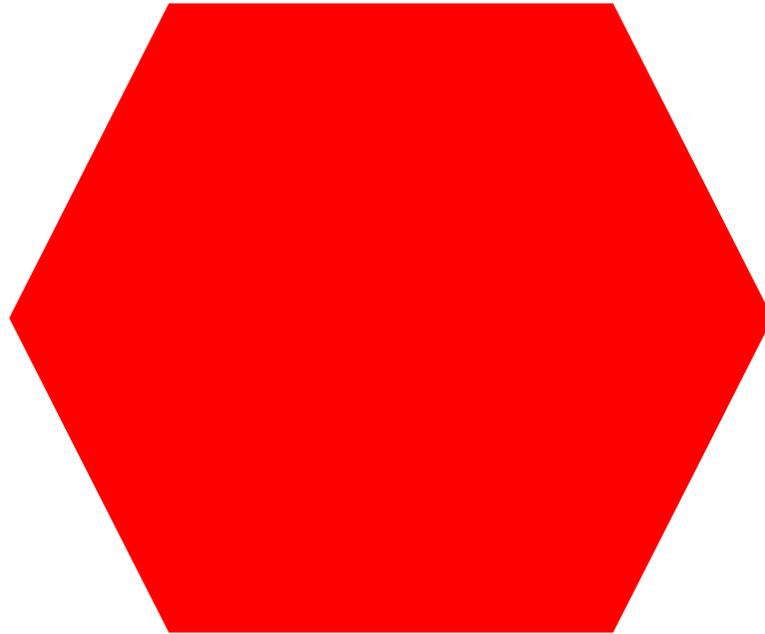


Conditions that Don't Represent Typical Water Quality

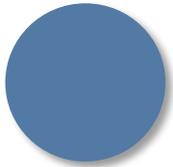
- Hot water side of faucets
- Removing aerator just before collection
- New faucet, or
- "Recent" plumbing work (past six months)
- After extended standing time
- Faucet flushed before sampling



**Sample early, have back-up sites,
once sent to lab it's done!**



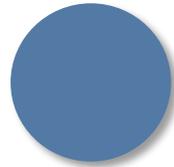
Washington State Regional Contacts



Southwest

Sophia Petro

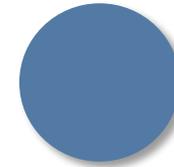
[sophia.petro@
doh.wa.gov](mailto:sophia.petro@doh.wa.gov)



Northwest

Steve Hulsman

[steve.hulsman@
doh.wa.gov](mailto:steve.hulsman@doh.wa.gov)



Eastern

Stan Hoffman

[stan.Hoffman@
doh.wa.gov](mailto:stan.Hoffman@doh.wa.gov)





Questions?



