## Revised Lead and Copper Rule (LCRR) Rundown

A guideline to the new rule

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#### How to ask questions?

- Please enter your questions in the Questions box.
- Q&A at the end.

#### **Can I get a certificate of completion?**

 Yes, webinar attendees will receive a certificate the same week of the webinar. Please email <u>marketing@all4inc.com</u> if you have any questions.

#### Will I get a copy of the slides?

• Yes, we will post a recording of the webinar and a copy of the slides on our website. A link will be emailed to participants.









- Lead and Copper Rule Background
- Service Line Inventory
- Lead Service Line Replacement Plan
- Lead and Copper Sampling Plan
- Tap Sampling Procedure
- Water Quality Parameters
- Small System Flexibility
- Lead and Copper Rule Improvements



https://www.waterrf.org/sites/default/files/styles/full\_width/public/image/2022-09/lead-copper.jpg?itok=OCFhXR6I

## What is the purpose of the Lead and Copper Rule?

- The United States Environmental Protection Agency (U.S. EPA) originally published a regulation in 1991 to control lead and copper in drinking water.
- The rule has gone through revisions throughout the years with the latest revision being the LCRR in December of 2021.
- The U.S. EPA revised the Lead and Copper Rule to enhance implementation in the areas of monitoring, treatment, customer awareness, and lead service line replacement.
- The rule applies to all Community Water Systems (CWS) and Non-Transient Non-Community Water Systems (NTNCWS)





## **Compliance Requirements of the LCRR**

- Lead MCLG of zero
- Action level (AL) of 15 ppb for lead.
- Trigger level (TL) of 10 ppb for lead
- The AL for copper remains at 1300 ppb.
- If 10 percent of the samples have water concentrations that are greater than the AL, then the system must perform actions such as public education and implement compliance options.



https://www.sehinc.com/hs-fs/hubfs/Website/Blog-News/Lead-Copper.png?width=679&height=488&name=Lead-Copper.pn





## **Compliance Timeline**

□ The compliance date for the LCRR is October 16, 2024

- An initial Service Line Inventory is due to the State by October 16, 2024.
- Sampling Plans are due to the State before the start of the first monitoring period of the year.





https://www.epa.gov/system/files/documents/2023-06/Final%20Small%20System%20Entity%20Inventory%20Guide 508.pdf



## Who needs a Service Line Inventory?

- All Community Water Systems (CWS) and Non-Transient Non-Community Water Systems (NTNCWS) must create a service line inventory.
  - A CWS is a public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents
  - A NTNCWS is a public water system that regularly serves at least 25 of the same persons over six months per year.
    - This includes manufacturing facilities, hospitals, and schools.

## **Service Line Inventory**

- Service lines can be connected:
  - From water main to building
  - From well to building
  - From pressure tank to building
  - From building to building
- Includes fire suppression lines and those lines connected to vacant or abandoned buildings.
- Can be customer and/or water supplier owned connections





### **Service Line Identification**

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https://www.harriswatermainandsewers.com/wp-content/uploads/2019/01/4105-Fort-Hamilton-Pkwy-Tap-Card-2.jpg

Sources may include:

- Historical construction/plumbing codes
- Water system records
- Distribution system maps
- Standard Operating Procedures (SOPs)
- Past and present inspections
- Meter installation records/meter repair records
- Any resource provided or required by the state
  - This may include visual inspection such as pot holing, CCTV, or excavation



- The service line must be classified based on material composition.
- Must include material of both extension and connection if different.
  - Lead (LSL)
  - Galvanized requiring replacement
     Lead status unknown (GRR)
- Non-lead



Copper

Galvanized Steel & valve

## **Service Line Inventory Templates**

#### □ Each state may require their own service line template.

	Detailed Inventory
Name:	
ID:	
e Last Updated:	

Purpose of this worksheet: To provide a customizable format water systems can use to track materials for each service line in their distribution system

General Instructions: Each row in this worksheet represents one service line connecting the water main to the customer's plumbing. The worksheet includes required and recommended elements; the columns with the aqua shading are required by the LCRR. Systems can customize by adding or deleting columns. Important notes for each column are in Row 12; also see the **Template Instructions** worksheet for detailed instructions. Note that users can freeze panes to enable them to see the headings and notes when entering data. The worksheet includes examples in rows 13 - 20 and is formatted for approximately 10,000 entries.

Location Information			System-Owned Portion											
Unique Service	Unique Service	Location	Identifier	Sensitive Population?	Disadvantaged	System-Owned Portion	If Non-Lead in Column G,	Service Line	Service Line	Basis of Material Classification	Was the Service Line	If "Yes" Service Line Mate	rial Was Field Verified:	Notes
	Line ID	Street Address	Other Location Identifier	(Yes/No)	(Yes/No)	Service Line Material Classification	Previously Lead?	Installation Date	Size		Verified?	Describe the Field Verification Method	Enter the Date of Field Verification	Notes
r	A Unique ID is recommended for each service line.	Water systems must track ac their internal inventory. I version, location identifier galvanized requiring replace use addresses for their loca could include GPS coordina block, or other details to sp	Idresses of all service lines in for the publicly accessible some required for lead and ment. If the system does not tion identifier, other options tes, landmark, intersection, eecify service line locations.	Select Yes if sensitive subpopulation, e.g., day care, school, multifamily home. If Yes-Other, describe in the Notes field.	Does location meet state affordability guidelines or other measures?	Dropdown list includes recommended subclassifications. If "Non-Lead Other", describe in Notes field	Select Yes, No, or Don't know. Important for determining if downstream/ customer- owned galvanized service line requires replacement	Date, year, or estimated date range when the service line was installed or replaced	Diameter in inches	Select option from drop down list. If "Other," describe in the Notes field	Select Yes or No	Select option from drop down list. If "Other," describe in the Notes field	Enter approximate date of field verification or date that the record was updated	Can use this field for documenting additional relevant information, including when classification changes.
	Example 1	1234 Test St., City, State, Zip Code	Intersection of Test and Elm St.	No	No	Non-Lead - Plastic	Yes	1997	2	Installation date after lead ban	Yes	Visual inspection at the meter pit	5/1/2019	
	Example 2	4321 Test St., City, State, Zip Code	Intersection of Test and Main St.	No	No	Non-Lead - Plastic	No	Fall 1980	2	Installation record (e.g., tap card)	Yes	Mechanical excavation at one location	9/10/2020	
	Example 3	16 Capital St., City, State, Zip Code		No	No	Non-Lead - Copper	Don't know	1985	1 1/2	Service line repair or replacement record	No			
	Example 4	1 Water Avenue, City, State, Zip Code		No	No	Unknown - Likely Lead		1940's	2		No			
	Example 5	67 Children's Place, City, State, Zip Code		Yes - Day Care	No	Unknown - Material Unknown		1950-1960	3/4		No			



2024 Company Confidentia



\*Discrepancies may be occasionally encountered. If they are repeatedly encountered, systems should reassess their confidence in their inventory's accuracy.

#### **Replace Lead Service Lines**

Replacing lead service lines can occur anytime in the steps shown STRATEGY WITH SOLUTION.



## **Updates to the Inventory**

- Notify consumers within 30 days after completion of the initial inventory and repeat annually until only non-lead service lines remain.
- Make publicly available and include a location identifier for any LSLs, GRR, or lead status unknown.
- Report to the state that the notification was delivered and provide a copy of the notification annually to the state by July 1st for the previous year.

#### EGLE

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

#### ANNUAL SERVICE LINE REPLACEMENT REPORT

Issued under authority of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), MCL 325.1001 et seq., and its administrative rules. Failure to submit this form is a violation of Act 399 and may subject the water supply to enforcement actions.

Administrative Rule R 325.11604(c)(vii) states, "A supply with lead service lines shall annually provide the department a summary of service line repairs or replacements in a form and manner specified by the department." Complete this form and return it to the appropriate Michigan Department of Environment, Great Lakes, and Energy (EGLE) via your Michigan Environmental Health and Drinking Water Information System (MiEHDWIS) account or via email to your EGLE district office email address **by March 31** following the year covered by the report. District office contact information is provided on page 4 of this report.

Water supplies with lead or galvanized previously connected to lead (GPCL) service lines must submit this report annually until all lead and GPCL service lines have been removed from the distribution system.

Water Supply: \_\_\_\_\_ WSSN: \_\_\_\_ County: \_\_\_\_

- 1. Calendar year (January 1 December 31) covered by this report.
- 2. Number of lead/GPCL service lines replaced in the year covered by this report.
- 3. Were at least five percent (5%) of known or presumed lead/GPCL service lines replaced in the year covered by this report?
- If the answer to question 3 is NO, describe reasons and plans to maintain a five percent (5%) average service line replacement rate designed to meet the 20-year replacement requirements of R 325.10604f(6).

5. Number of emergency lead/GPCL service line repairs/partial replacements that occurred in the year covered by this report.

Water supplies were required to submit a Preliminary Distribution System Materials





https://www.wbez.org/stories/this-procedure-can-spike-lead-levels-in-your-water-but-you-probably-wouldnt-know-about-it/297dd3ca-b5fe-4e7a-8dc5-798f3a067732

- All water systems with one or more LSL, GRR, or lead status unknown service lines in their distribution system must submit a LSLR plan to the state by October 16, 2024.
- Plans must include:
  - Procedure for identifying lead status unknown lines
  - Replacement strategy

## Service Line Replacement

- Notice must be provided to consumer(s) <u>BEFORE</u> the affected service line is returned to service.
- Prior to returning the line to service, provide consumers with:
  - A pitcher filter or point-of-use (POU) device that is NSF/ANSI 53 certified to reduce lead in drinking water.
  - Six months of replacement cartridges.
  - Instructions for use of the filter and replacement cartridges.
  - If the affected service line serves more than one building, the water system shall provide the items listed to every sink in the building.
  - Must be provided before line is returned to service.



## **Service Line Replacement**

EGLE

LEAD AND COPPER REPORT AND CONSUMER NOTICE – FORM A EQP5942a

### After line replacement:

- Offer to collect follow up tap samples.
  - Collect samples three to six months after replacement.
  - Provide results to consumers.

#### CONSUMER NOTICE OF LEAD AND COPPER RESULTS IN DRINKING WATER SITE WITH A LEAD SERVICE LINE

Water Supply Name:	
Sample Site Address:	WSSN:
Sample Location:	Date Sampled:

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below. Your home is served by a lead service line. This means that the pipe that brings water to your home contains lead. The first liter sample represents the water you are likely to drink when turning on the tap, and the fifth liter sample likely represents the water in the service line.

Contaminant	Action Level	Maximum Contaminant Level Goal	1st Liter Result	5th Liter Result
Lead (ppb)	15	0		
Copper (ppb)	1,300	1,300		

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. ppb: Parts per billion or micrograms per liter. ND: Not detected.

To reduce exposure to lead and copper in drinking water:

- 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.
- Use cold water for drinking, cooking, and preparing baby formula. Do not cook with or drink water from the hot water tap. Lead and copper dissolve more easily in hot water.
- Do not boil water to remove lead and copper. Boiling water will not reduce lead and copper levels.
- Everyone can consider using a filter to reduce lead in drinking water. The Michigan Department of Health and Human Services (MDHHS) recommends every household use a certified lead filter to reduce lead from their drinking water, especially households with a child, pregnant person, an individual with high blood pressure, or people residing in houses built before 1987. MDHHS also recommends



making baby formula or cooking with filtered water I eak for filtere that are

## Lead and Copper Sampling Plan

System size (number of people served)	Number of sites (standard monitoring)	Number of sites (reduced monitoring)
>100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
≤100	5	5

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- Each water system shall identify a pool of targeted sampling sites based on the service line inventory.
- Sampling plans should contain enough sites for standard monitoring.
  - Reduced monitoring
    - Must have two consecutive six-month monitoring periods where lead 90th percentile level is ≤ 5 ppb and the copper 90th percentile level is ≤ 650 ppb.







## **Sample Site Tiering**

**Community Water System** 

Tier 1	Single-family structures that are served by a lead service line	Tier 1	Buildings served by a lead service line
Tier 2	Buildings, including multiple-family residences that are served by a lead service line	Tier 3	Buildings that contain galvanized lines identified as being downstream of an LSL currently or in the past, or known to be downstream of a lead gooseneck, pigtail, or connector
Tier 3	Single-family structures that contain galvanized lines identified as being downstream of a lead service line (LSL) currently or in the past, or known to be downstream of a lead gooseneck, pigtail or connector	Tier 5	Sites that are representative of sites throughout the distribution systema representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system
Tier 4	Single-family structures that contain copper pipes with lead solder installed before the effective date of the State's applicable lead ban.		
Tier 5	Sampling sites that are representative of sites throughout the distribution system		

Non-Transient Non-Community Water System



## **Tap Sampling Procedure**

#### Lead Service Line

- Must be sampled first before other tiers
- 6 hours of stagnancy
- Do not remove aerator
- Do not flush prior to sampling
- Take 1L first draw sample
- Take 5L sample

#### Non-Lead Service Line

- 6 hours of stagnancy
- Do not remove aerator
- Do not flush prior to sampling
- Take 1L first draw sample





## Lead and Copper Results

- The lead trigger level is exceeded if the 90th percentile concentration of lead is greater than 10 µg/L or 10 ppb.
- The lead action level is exceeded if the 90th percentile concentration of lead is greater than 15 ug/L or 15 ppb.
- The copper action level is exceeded if the 90th percentile concentration of copper is greater than 1.3 mg/L or 1300 ppb.

## **90th Percentile Calculation for Lead**

Sample #	Sample ID	Lead (mg/L)
1	123 Main St.	0.002
2	123 Oak St.	0.003
3	123 Elm St.	0.004
4	123 Bond St.	0.007
5	123 Maple St.	0.009
6	123 Aspen St.	0.010
7	123 Cherry St.	0.011
8	123 Walnut St.	0.012
9	<mark>123 Pine St.</mark>	<mark>0.013</mark>
10	123 Poplar St.	0.030

- Arrange in ascending order
- Multiply number of samples by
   0.90 to find which sample is your
   90th percentile sample
- □ 10 samples (0.90)= 9
- Your 90th percentile
   concentration for lead is 0.013
   mg/L or 13 ppb

## **Consumer Notification of Results**

Results	Action
No TL or AL exceedance	Within 30 days of learning the results, all systems must deliver a "consumer tap notice" of the lead tap water results to persons served by the water at sites that are sampled.
TL exceedance	Within 30 days of the end of the tap sampling period in which the trigger level exceedance occurred. Must provide additional information about service line replacement plan.
AL exceedance	<ul> <li>For individual samples that exceed 15 ppb of lead, no later than 3 calendar days after the water system learns of the tap monitoring results.</li> <li>A Tier 1 notification must be completed if 90<sup>th</sup> percentile is exceeded.</li> <li>If NTNCWS notification posting and distribution to all employees (can be electronic).</li> <li>For a NTNCWS Within 60 days after the end of the tap sampling period in which the exceedance occurred public education materials must be delivered</li> </ul>





- All systems that exceed the AL
- Small and NTNCWS that exceed the TL
- Small-size water systems with corrosion control treatment (CCT) that exceed the TL
- Any system that exceeds the TL with CCT where State has not designated optimal WQPs
- The water's alkalinity and pH should be monitored.
- Any system that installs or modifies CCT must monitor the parameters every six months until the State specifies new WQP values for optimal CCT.
  - pH, alkalinity, orthophosphate, and silica should be monitored.



https://www.gopracticals.com/chemical/basic-chemical/alkalinity-water-titrating-sulphuric-acid/



https://www.alsglobal.com/en/geochemistry/generative-exploration/conductivity-ph-and-neutralisatior

## Number of Sites Required for WQP monitoring

System Size	# sites required for WQP	System Size	# sites required for WQP
>100,000	25	>100,000	10
10,001 to 100,000	10	10,001 to 100,000	7
3,301 to 10,000	3	3,301 to 10,000	3
501 to 3,300	2	501 to 3,300	2
101 to 500	1	101 to 500	1
<=100	1	<=100	1

#### **Standard Monitoring**

#### **Reduced Monitoring**

To qualify for reduced WQP distribution monitoring, lead 90<sup>th</sup> percentile must be  $\leq$  10 ppb and the system must meet its optimal WQPs.





## Small Water System Compliance Flexibility

- A NTNCWS or small system that exceeds the lead trigger level but does not exceed the lead and copper action levels, must collect water quality parameters and evaluate compliance options.
- A compliance option must be recommended to the state within six months of the end of the tap sampling period in which the exceedance occurred.
- The state must approve this option or designate an alternative compliance option within six months of the water system recommendation.
- If the water system subsequently exceeds the lead action level, it must implement the approved compliance option.

## **Compliance Options**

- Lead service line replacement
- Corrosion control treatment
- POU devices
- Replacement of lead-bearing plumbing



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## **Compliance Actions**



### Compliance Option #1 Lead Service Line Replacement

- Must be completed within 15 years AND
- Must continue LSLR treatment even if its 90th percentile is at or below the action level in future sampling periods.







### Compliance Option #2 Corrosion Control Treatment

A system must install and maintain corrosion control treatment even if its 90th percentile is at or below the action level in future sampling periods.

Timeline varies with State



SEPA How Orthophosphates Coat and Protect Water Pipes



### Compliance Options #3 Point-of-Use(POU) Devices

- The system must install and maintain POU devices in every tap that is used for cooking and/or drinking on a schedule specified by the State, but not to exceed three months AND
- A water system must install, maintain, and monitor POU devices in each building even if its 90th percentile is at or below the action level in future tap sampling monitoring periods.





### Compliance Option #4 Replacement of Lead-Bearing Plumbing

A water system that has control over all plumbing in its buildings, and no unknown, galvanized, or lead service lines, must replace all plumbing that is not lead free in accordance with Section 1417 of the Safe Drinking Water Act AND
 Replacement must not exceed 1 year.





## **Reporting Requirements to the State**

Report Type	Due Date
Water Quality Parameters	10 days after end of each applicable tap sampling period
Lead and Copper Results	10 days after end of each applicable tap sampling period
Site Sample Plan	By the start of the first applicable tap sampling monitoring period
Consumer Confidence Report (CWS)	Annually by July 1
Initial Service Line Inventory	October 16, 2024
Service Line Replacement Plan	October 16, 2024



## Lead and Copper Rule Improvements (LCRI)

- Proposed rule published in the code of federal regulation on 12/6/23.
- Let will have a compliance date of 3 years after the rule is finalized and published in the CFR.

LCRR	LCRI
Action Level for lead 15 ppb	Action Level for lead 10 ppb
Establishes 10 ppb trigger level for lead	Eliminates trigger level
LSLs must be replaced within 15 years	LSLs must be replaced within 10 years
4 compliance options for small systems	Removes replacement of lead service lines as a compliance option for small systems.
CCT is a compliance option for small systems	Allows NTNCWS, in lieu of CCT requirements, to choose POU devices or replacement of lead-bearing plumbing
Trigger level exceedance requires goal-based LSLR and steps taken towards CCT installation or re-optimization.	P90 level above lead action level of 10 ppb or copper action level of 1300 ppb requires actions including installation or re-optimization of CCT, and public education and 24-hour public notification (for lead action level exceedances)



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## How Can ALL4 Help You?

We can assist with the following requirements of the LCRR:

- Service Line Inventory
- Sampling Plan
- Communication Plan
- Lead Service Line Replacement Plans
- In addition, ALL4 can help with additional drinking water compliance for any public water system.

## **Questions or Comments?**

**Contact Information:** 

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