



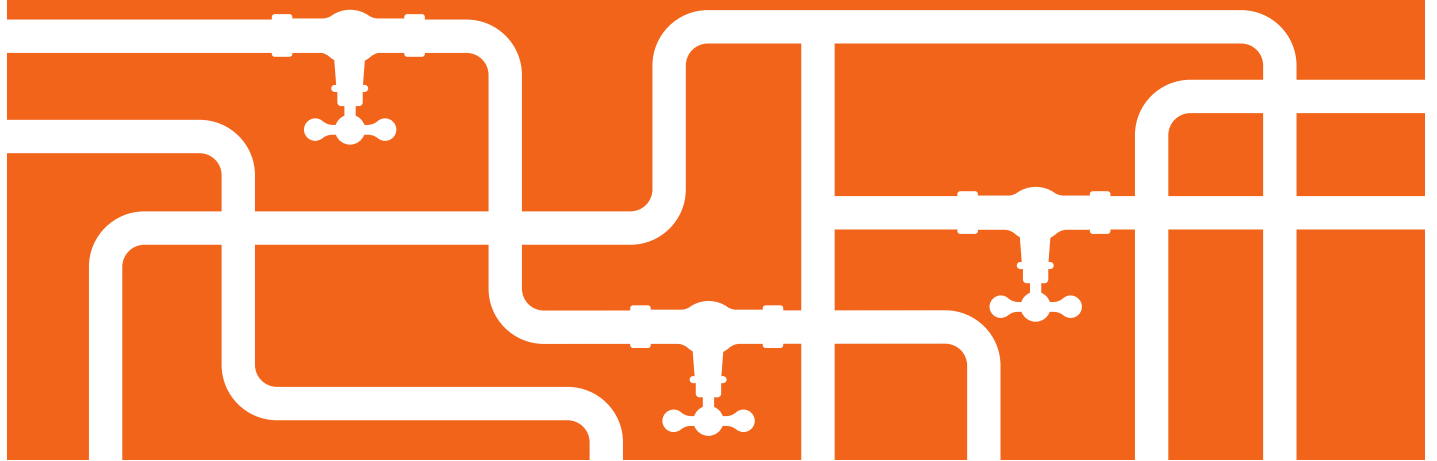
NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

May
2023

LEAD AND COPPER RULE REVISIONS

Lead Service Line Inventory

GUIDANCE AND FREQUENTLY ASKED QUESTIONS



LEAD AND COPPER RULES

Abbreviations / Key Terms

AL – Action Level

ANSI – American National Standards Institute

BSDW – Bureau of Safe Drinking Water

CWS – Community Water System

GRR – Galvanized Requiring Replacement

LSL – Lead service line

LCR – Lead and Copper Rule

LCRR – Lead and Copper Rule Revisions

NTNC – Non-Transient Non-Community Water Systems

OFA – Office of Financial Assistance

PWS – Public Water System

SL – Service Line

TL – Trigger level

U.S. EPA – United States Environmental Protection Agency



Overview

DISCLAIMER: This document is intended to provide answers to questions that may arise regarding developing a lead service line inventory in community and non-transient non-community water systems. This document is non-regulatory and for guidance only. Nothing in this document supersedes any statutory or regulatory requirements or permit provisions for public water systems.

The United States Environmental Protection Agency (U.S. EPA) issued revisions to the federal Lead and Copper Rule (LCR) on January 15, 2021. U.S. EPA's new Lead and Copper Rule Revisions (LCRR) strengthen every aspect of the LCR to better protect communities, children in elementary schools and childcare facilities from the impacts of lead exposure. The new LCRR will get the lead out of our nation's drinking water and empower communities through information. The LCRR will require community water systems (CWS) and non-transient non-community water systems (NTNC) throughout the United States to conduct an inventory of service lines and determine the material of those lines. U.S. EPA will not delay the service line material inventory requirements in the LCRR.



FREQUENTLY ASKED QUESTIONS



1. What are the new requirements and what must be included in the Lead Service Line (LSL) Inventory under the Lead and Copper Rule Revisions?

- All community and non-transient non-community public water supply systems must comply with the LCRR. Water systems must develop an inventory to identify service line materials connected to the public water systems (PWSs) by **October 16, 2024**.
- Community and non-transient non-community water systems with one or more lead, galvanized requiring replacement, or lead status unknown service line(s) must submit a lead service line replacement plan.
- Community water systems must submit a list of licensed schools and childcare facilities served by their systems.

Items to be submitted by the October 16, 2024, deadline:

1. Lead Service Line Inventory:
[40 CFR 141.84\(a\)](#)
2. Lead Service Line Replacement Plan:
[40 CFR 141.84\(b\)](#)
3. List of licensed schools and childcare facilities:
[40 CFR 141.92\(a\)\(1\)](#)

2. What service line materials must be identified in the LSL Inventory?

1. Lead service lines
2. Non-lead service lines
3. Galvanized Steel Requiring Replacement (GRR)
4. Lead status unknown

3. What is the regulatory history on lead free in Nevada?

June 19, 1986: Congress enacted the Safe Drinking Water Act Amendment of 1986, which prohibited the use of pipe, solder, or flux in PWSs that is not “lead free”, defined “lead free”, and that plumbing must be “lead free”.

- “Lead free” was defined as solders and flux may not contain more than 0.2 percent lead, and the pipes and pipe fittings may not contain more than 8.0 percent lead.

March 22, 1989: Nevada public water system regulations require plumbing installed in water supplies to comply with the 1986 SDWA amendments for “lead free” and updated compliance from the 1982 to the 1988 edition of the Uniform Plumbing Code (NAC 445.412).

June 26, 1989: Nevada law approved to require updated requirements from the 1985 to the 1988 edition of the Uniform Plumbing Code for any construction, alteration or change in the use of a building (NRS 444.350).

October 1, 1989: NRS 444.350 Uniform Plumbing Code law effective (NRS 218D.330).

January 4, 2014: The Reduction of Lead in Drinking Water Act went into effect nationally. This amendment to the Safe Drinking Water Act introduced a new definition of “lead free” in 40 CFR § 143.12. “Lead free” means:

- Not containing more than 0.2 percent lead when used with respect to solder and flux; and
- 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.

4. What is the date after which any construction is assumed to be “lead-free”?

- In the State of Nevada, any construction **after 9/30/1989** was required by State law to not contain lead.
- Homes or other service connections with water lines installed after **9/30/1989** may be assumed to have no lead service lines, unless the PWS is aware of installations that did not comply with State law.
- A PWS can determine if a local ordinance banned the use of lead in plumbing construction at an earlier date. Documents referring to an earlier ordinance or building code may be used instead of the Nevada law ban of **10/01/1989**.

5. Where is lead likely to be found in plumbing materials?

- Homes or other service connections built **before 10/01/1989** are more likely to have lead pipes, fittings, fixtures, and/or lead solder.
- Although a home may be legally “lead-free,” before 2014, solder once may have contained up to 0.2% lead; pipes, plumbing materials, and chrome and brass faucets may have had up to 8% lead.

6. Do PWSs need to maintain records on lead solder?

- Lead solder alone does not qualify the line as a lead service line.
- It is still necessary for PWSs to document lead solder when records exist to identify the sampling pool (e.g., Lead Sample Plan, tiering).

7. Will NDEP allow the water system to use “non-lead” designation for any pipe greater than 2” diameter?

- Yes, pipes greater than 2 inches in diameter may be assumed non-lead regardless of construction year, unless the PWS is aware of pipes in their system that are greater than 2 inches and contain lead.

8. Will NDEP validate service line inventory records produced by PWSs?

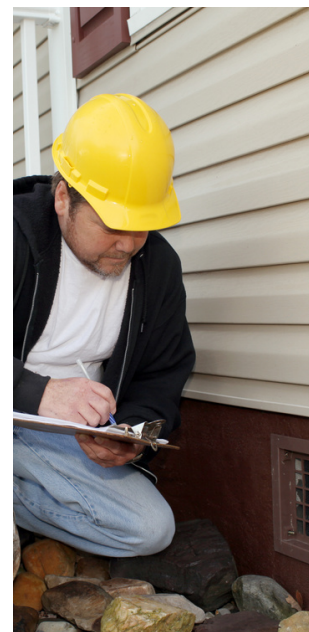
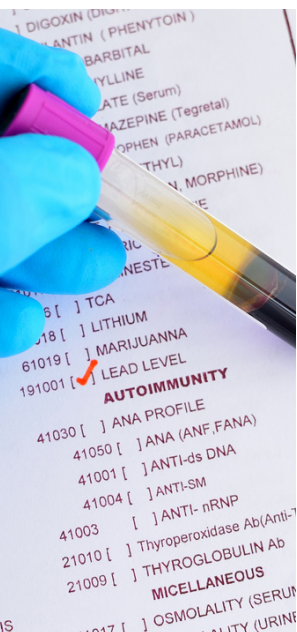
- No, PWSs need to verify their own records. The PWS may decide what types of records they are willing to accept as legally defensible.

9. How much field verification is needed to validate staff interviews?

- Historical knowledge is useful for prioritizing field verifications, but physical verification will likely be necessary to confirm historical knowledge and document the materials.
- If a record exists (e.g., plumbers' receipt, building permit record, title company record), visual inspection may not be needed.

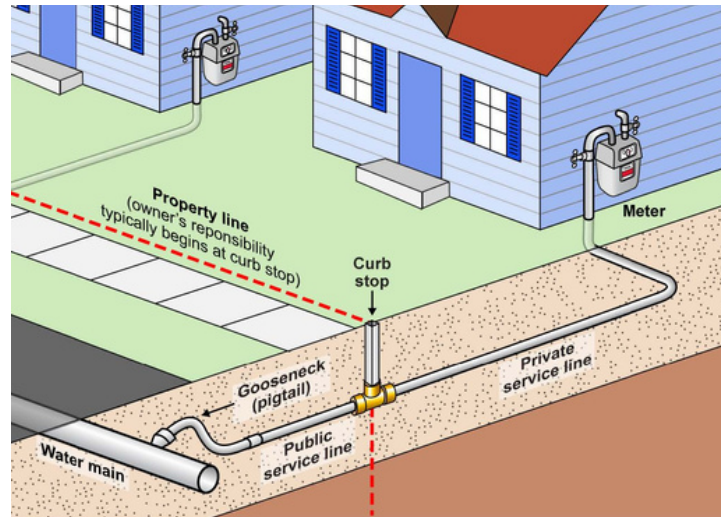
10. What methods may PWSs use to determine the materials of the service line?

1. Homeowner photographs with test results (e.g., magnet, scratch test, lead test)
2. Lead test kits
3. Scratch test
4. Potholing
5. Hydrovaccing
6. Plumbing records
7. Other methods will be considered on a case-by-case basis



11. How many locations must be verified on the private side of the service line?

- The PWS must verify enough locations on the service line as needed to ensure the inventory is accurate and legally defensible.
- If using a visual inspection, verify at least one private side location downstream of the connection to the PWS (e.g., on the private side of the meter or the private side of the curb stop).



12. What is a pigtail? Does a pigtail qualify the line as lead? Should lead pigtails be replaced?

- A pigtail (also called "gooseneck") is a flexible connector sometimes used to connect the saddle on the main to the horizontal service line. They can also be inside a home connecting to an appliance (e.g., water fountain, water heater, fridge). Before poly flex hose was available, these were commonly made of flexible metal (e.g., lead) that would not pinch off when bent.
- Pigtails/goosenecks are not considered part of the service line. If the pigtail/gooseneck is made of lead, but the remainder of the service line has no lead or galvanized steel, the line should be listed as "non-lead." However, a note should be made on the inventory.
- Lead pigtails/goosenecks should be replaced during routine maintenance.

13. How does a water system document galvanized steel water distribution lines downstream of confirmed lead distribution lines?

- Galvanized steel water distribution lines that are downstream of confirmed lead distribution lines or may have historically been downstream of lead are considered Galvanized Requiring Replacement (GRR) and must be replaced.
- Galvanized steel water distribution lines upstream from known lead distribution lines do not have to be replaced.

14. May sampling be used to determine the service line materials?

- Sampling may only be used to determine a lead service line but not to determine a non-lead service line.

15. Will NDEP review and approve predictive modeling and emerging methods used to develop an inventory?

- These types of tools for developing an inventory will be considered on a case-by-case basis.
- They will need to be robust and legally defensible.
- If after submittal and approval a determined non-lead service line is determined to be a lead service line, the whole method will need to be reviewed and physical verification of other non-lead service lines will be necessary.

16. Do all lead service lines need to be replaced?

- Yes, all lead service lines must be replaced per replacement plan, during routine maintenance, and during emergency repairs.

17. How does the PWS address “unknown” service lines in the initial LSL inventory?

- If the material of construction of a water service line cannot be verified during the initial inventory, the service line should be identified as “unknown”.
- Unknown service lines must be included in the Service Line Replacement Plan for either replacement or to be designated as non-lead after material confirmation.
- The PWS should rank the water connections by how likely it may contain lead.
- The PWS should also notify the property resident and homeowner annually that the service line may contain lead.

18. What are the rules regarding NTNC water systems?

- NTNC water systems traditionally are connected directly to the source and do not contain service lines. Examples include schools and private businesses.
- NTNC water systems will need to inventory all piping from the source to the building inlet. U.S. EPA is developing additional guidelines for these systems.

19. What information is needed for schools and childcare centers?

- Each community PWS must compile a list of schools and childcare facilities served by the water system **by October 16, 2024**.
- U.S. EPA has provided guidance specific to schools and childcare facilities.
- “Childcare facility” means a location that houses a licensed provider of childcare, day care, or early learning services to children, as determined by the State, local, or tribal licensing agency.
- “School” means any building(s) associated with public, private, or charter institutions that primarily provides teaching and learning for elementary or secondary students. A secondary school is considered a middle school (usually 6 to 8 grade) and high school.



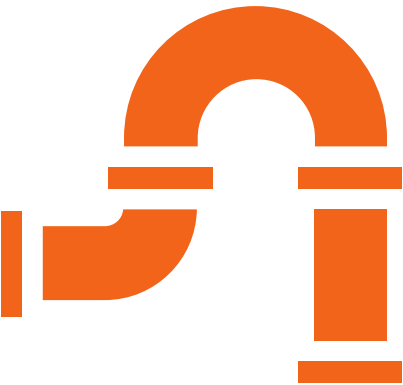
20. If a water system is replacing lead pipes, GRR or lead goosenecks, connectors, or fittings, what procedures should be followed to prevent lead exposure to customers?

- The LCRR requires the PWS that has an approved replacement plan to follow procedures to prevent lead exposure to the landowner/customer during construction.
- NDEP recommends a PWS conducting construction on any lead pipe, GRR, gooseneck, connector or fitting to determine the service line material on the landowner/customer property.
- If the landowner/customer is unwilling to allow the PWS to determine the service line material, the PWS should document the interactions with the landowner/customer.
- If the landowner/customer-owned service line is also lead, the PWS needs to inform the customer of the lead service line and work with the landowner/customer to remove all lead materials at the same time.
- The PWS is not required to bear the cost of the replacement of the portion of the affected service line not owned by the PWS.
- If the landowner/customer-owned service line is lead and the landowner/customer is unwilling to replace the service line, the PWS may continue the system-owned user service line replacement.
- Provide the person served by the PWS at the service connection with educational information about the potential for elevated lead levels in drinking water because of the disturbance.
- Provide the person served at the service connection with flushing instructions for the building following the replacement.
- Provide a pitcher filter certified by an American National Standards Institute (ANSI) accredited certifier to reduce lead, instructions to use the filter, and six months of filter replacement cartridges or an equivalent certified ANSI point of use device.
- Offer to the consumer to take a follow-up tap sample after completion of the service line replacement.

21. What are the Lead and Copper sample and tiering requirements under the LCRR?

- A water system whose distribution system contains lead service lines must collect all monitoring samples from sites served by a lead service line. A water system that cannot identify sufficient number of sampling sites served by lead service lines must still collect samples from every site served by a lead service line and collect the remaining samples in accordance with tiering requirements. Generally, sites with lead status unknown service lines may not be used as sampling sites.

LCRR TIERING REQUIREMENTS



Community Water System (CWS)

- Tier 1 sampling sites are single-family structures that are served by a lead service line.
- Tier 2 sampling sites are buildings, including multiple-family residences that are served by a lead service line.
- Tier 3 sampling sites are single-family structures that contain galvanized lines identified as being downstream of a lead service line currently or in the past, or known to be downstream of a lead gooseneck, pigtail or connector.
- Tier 4 sampling sites are single-family structures that contain copper pipes with lead solder installed **before 10/1/1989**.
- Tier 5 sampling sites are single-family structures or buildings, including multiple family residences that are representative of sites throughout the distribution system.

Non-Transient Non-Community (NTNC) Water System

- Tier 1 sampling sites consist of sites that are served by a lead service line. NTNC water systems with insufficient Tier 1 sites can complete its sampling pool with Tier 3 sampling sites.
- Tier 3 sampling sites are sites that contain galvanized lines identified as being downstream of an lead service line currently or in the past, or known to be downstream of a lead gooseneck, pigtail, or connector.
- Tier 5 sampling sites are sites representative of the water distribution system.

LCR SAMPLING FREQUENCY

Population Served by Public Water System	Standard Monitoring Sample Sites (6-month Schedule)	Reduced Monitoring Sample Sites (Annual or Triennial Schedule)
>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

23. What are the Standard (6 months) and Reduced Monitoring (Annual or Triennial) requirements for systems that exceed the Action Level (AL)?

- Standard monitoring samples are collected and tested on a six (6) month schedule.
- Two rounds of consecutive standard monitoring with results below the AL may qualify the PWS for reduced monitoring.

24. Does my water system need to return to standard monitoring in January 2025?

- If the LSL Inventory indicates new locations for sampling, the water system must return to standard monitoring **in January 2025**. The new sampling pool must be identified, and the first six-month sampling event must be completed in January to June 2025.

25. How can I calculate my 90th percentile if I'm required to collect five samples or less?

1. Place lead or copper results in ascending order.
2. Take the average of the 4th and 5th highest sample. This is the 90th percentile level.
3. Compare the 90th percentile level against the lead or copper action level. If your 90th percentile value is higher than 0.015 mg/L, an exceedance has occurred.

(Spreadsheet calculator is provided at the end of this document)

26. How can I calculate my 90th percentile if I'm required to collect more than five samples?

1. Place results in order from lowest to highest value.
2. Assign each sample a number 1-10.
3. Multiply the total number of samples by 0.9.
4. Compare the 90th percentile level to the action level. If the 90th percentile value is higher than 0.015 mg/L, an exceedance has occurred.

(Spreadsheet calculator is provided at the end of this document)

27. Is funding available to develop the inventory and replace lead service lines?

- U.S. EPA is harmonizing regulatory requirements with unprecedented funding through President Biden’s Bipartisan Infrastructure Law to make rapid progress on removing harmful lead from America’s drinking water.
 - U.S. EPA will provide funding to states to help pay for utility service line inventory development and replacement of lead service lines to qualifying PWSs. U.S. EPA funding will go to the State of Nevada’s financial assistance programs, including loan and grant funding. Please reach out to the Bureau of Safe Drinking Water (BSDW) or Office of Financial Assistance (OFA) for more information.
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GENERAL RESOURCES

[Inventory Template \(NDEP\)](#)

[Lead and Copper Rule Main Page \(NDEP\)](#)

[Lead and Copper Rule Overview \(U.S. EPA\)](#)

[Guidance for Developing and Maintaining a Service Line Inventory \(U.S. EPA\)](#)

[90th Percentile Calculator \(U.S. EPA\)](#)



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