

Lead & Copper Rule: Service Line Inventory and the Proposed LCRI

May 15th, 2024

Public Water Supply Section



Service Line Inventory

- **INITIAL** Service Line Inventory due October 16th, 2024.
 - Includes all service lines connected to the distribution system.
- BASELINE Service Line Inventory due on the LCRI Compliance Date.*
 - Includes all service lines AND connectors connected to the distribution system.

*Requirements related to the baseline inventory are subject to change with the final version of the LCRI.



Initial Inventory: General Requirements

- Required for all community and non-transient, non-community water systems.
- All service lines must be classified regardless of ownership status. Classifications include:
 - Lead
 - Galvanized Requiring Replacement
 - Non-lead
 - Unknown



Scratched Lead

Copper

Galvanized Steel & valve

Goosenecks, Pigtails, and Connectors

- INITIAL INVENTORY: Not required.
- *BASELINE INVENTORY: Required to be classified.
- What does this mean?
 - Track your connectors on the initial inventory! Include lead status, if known.



*Requirements related to the baseline inventory are subject to change with the final version of the LCRI.



Investigation Methodology

- Historical Records Review (Required)
 - Previous Materials Evaluation
 - Construction Records and Plumbing Codes
 - Water System Records
 - Distribution System Inspections and Records
- NCDEQ Accepted Methods
 - Visual Inspection
 - Water Quality Sampling
 - Excavation
- Methods Requiring NCDEQ Approval
 - Statistical Methods/Predictive Modeling
 - "Emerging Methods"
 - CCTV Inspection





Public Accessibility Requirements

- All inventories must be publicly available.
- Systems serving 50,000 people or less are not required to post inventory online.
- Systems service more than 50,000 people must post inventory online.
- Community water systems must include access instructions in the consumer confidence report.
- Systems with only non-lead can release a statement that they have no lead, GRR, or unknown service lines and include a summary of methodology.



Public Notices

- Confirmed Lead Service Line:
 - Include information on how to replace service line, available financing programs to assist with replacement, and a statement that the system must replace its portion if the property owner replaces theirs.
- Confirmed GRR Service Line:
 - Include information on opportunities to replace the service line.
- Unknown Service Line:
 - Include information on opportunities to verify the service line material.





Template

- Use the template available on the NCDEQ Service Line Inventory website https://www.deq.nc.gov/about/divisions/water-resources/drinking-water/lead-service-line-inventory
- Select the template appropriate for your water system.

Lead Service Line Inventory Template

Water systems in North Carolina are required to use the appropriate template provided by the Public Water Supply Section. Please contact the Public Water Supply Section's Lead and Copper compliance team at pwss.lcr@deq.nc.gov if you need assistance in accessing your template.

- <u>Template for water systems with 500 or fewer connections</u>
- <u>Template for water systems with greater than 500 but no more than 50,000 connections</u>
- <u>Template for water systems with greater than 50,000 connections</u>

Submission Portal – Login



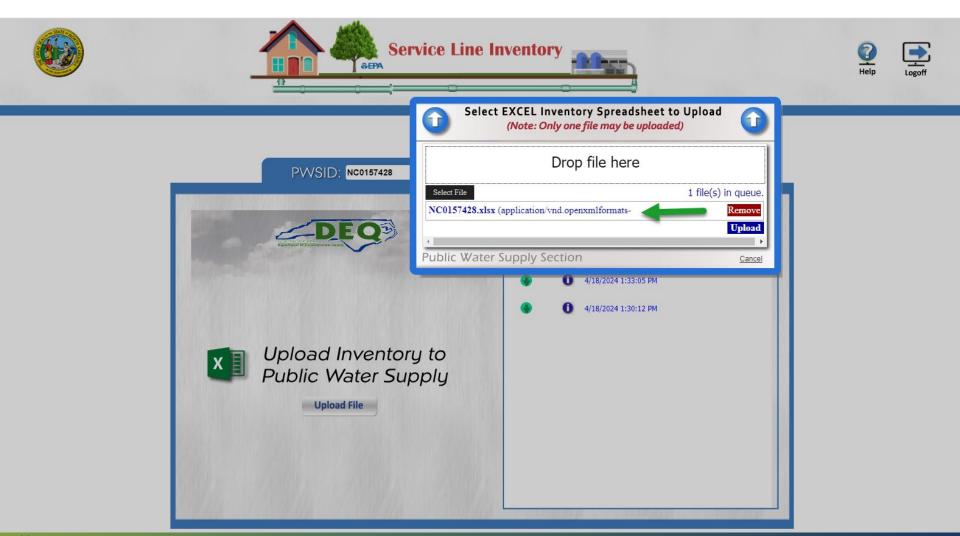


Submission Portal – Main Page





Submission Portal - Upload

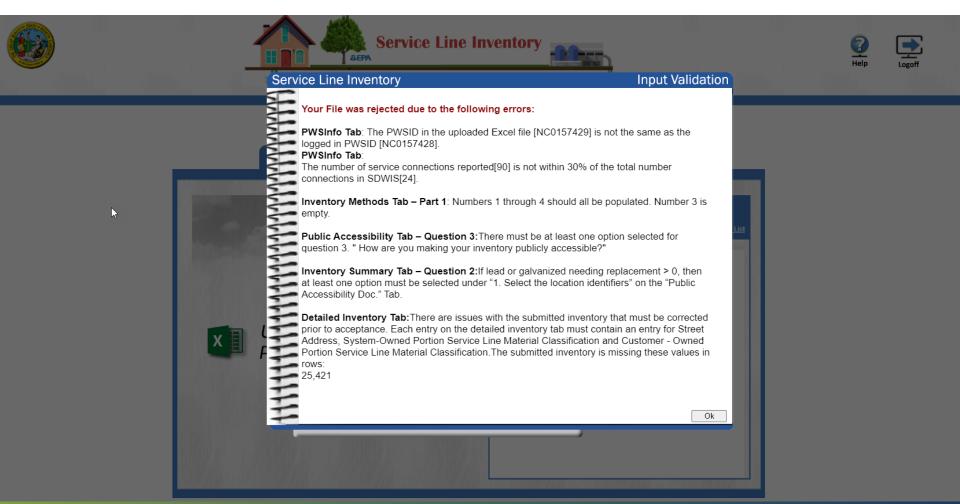


Submission Portal – Successful Initial Upload



PWSID NC0123456 Name: Undefined Congratulations! Thank you for submitting the Initial Service Line Inventory for Test Water ry System (NC0123456) on5/14/2024. If you have Refresh List any questions, contact the lead and copper team at pwss.lcr@ncdenr.gov. SUCCESS! Ok Upload Inventory to X 5/8/2024 9:24:21 AM Public Water Supply 5/7/2024 2:14:04 PM Upload File 5/7/2024 2:06:03 PM 5/7/2024 1:51:17 PM 6 5/7/2024 10:00:07 AM

Submission Portal – Unsuccessful Initial Upload



Submission Portal – Successful Upload Email

Successful Inventory Check



SLI Email Generator <SLI@ncdenr.gov> To OMattison, David P

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Successful Inventory Check

To: <u>david.p.mattison@deq.nc.gov</u> Subject: Initial Service Line Inventory Accepted

Thank you for submitting the Initial Service Line Inventory for Test Water System (NC0123456) on 5/14/2024. The inventory data are valid based on the data requirements.

If service lines are classified as lead, galvanized requiring replacement, or unknown, you must provide notice to each affected location within 30 days. This notice should include information about the classification of their service line and any necessary actions they need to take.

If you have any questions, contact the lead and copper team at pwss.lcr@ncdenr.gov.



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.



Submission Portal – Unsuccessful Upload Email

SLI Submission Validation Report

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SLI Email Generator <SLI@ncdenr.gov> To O Mattison, David P



Failed Inventory Check

To: <u>david.p.mattison@deq.nc.gov</u> Subject: Initial Service Line Inventory Rejected

Thank you for submitting the Initial Service Line Inventory for LBJ JOB CORPS (NC0157428) on 5/14/2024.

There are issues with the submitted inventory that must be corrected prior to acceptance. Each entry on the detailed inventory tab must contain an entry for Street Address, System-Owned Portion Service Line Material Classification and Customer-Owned Portion Service Line Material Classification. The submitted inventory is missing these values in rows:

Please correct these errors and resubmit the inventory workbook.

If you have any questions, contact the lead and copper team at pwss.lcr@ncdenr.gov.



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Questions on Service Line Inventory?



The Proposed LCRI

DISCLAIMER: This information is subject to change with the final LCRI.

Overview

- 1. Monitoring Requirements
- 2. Corrosion Control Treatment
- 3. Water Quality Parameters
- 4. Service Line Replacement
- 5. Public Education
- 6. Other Notices
- 7. Lead Sampling in Schools and Child-Care Facilities
- 8. Small Systems Compliance Flexibility



LCRI Dates

- October 16th, 2024 Some requirements are due/go into effect.
- LCRI Compliance Date Rest of the LCRI Requirements are due/go into effect.
 - This date is not set yet but is likely sometime in 2027.



Monitoring Requirements – What is the same?

- Copper Action Level: 1.3 mg/L
- Number of required sample sites.

System size (Number of	Standard number of sites for	Reduced number of sites for
People Served)	lead and copper monitoring	lead and copper 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

- Criteria for Reduced Monitoring (annual and 3-year).
- Timeframe for monitoring.



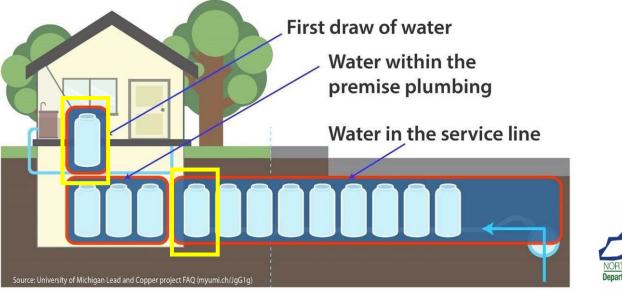
Monitoring Requirements – What's new?

- Lead Action Level: 0.010 mg/L (10 ppb) [reduced from 0.015 mg/L]
- Tier Sites:
 - Tier 1 single family homes with premise plumbing made of lead and/or served by a lead service line.
 - Tier 2 buildings, including multifamily homes, with premise plumbing made of lead and/or served by a lead service line.
 - $\circ~$ Tier 3 include single family homes that are either:
 - Sites served by a lead connector,
 - Sites served by a galvanized service line ever downstream of an LSL or lead connector, or
 - Sites with galvanized premise plumbing ever downstream of an LSL or lead connector.
 - Tier 4 sites containing copper pipes with lead solder installed before the state lead ban (March 1987).
 - Tier 5 sites that are representative of locations throughout the distribution system.



Monitoring Requirements – What's new (cont.)?

- Sample Procedure:
 - 1 L in volume, after at least 6 hours of stagnation (same as LCR).
 - Residential housing samples must be collected from a kitchen or bathroom tap. Non-residential samples must be collected from a tap typically used for consumption (same as LCR).
 - NEW: 1st and 5th Liter Samples
 - For ALL sites, the 1st liter sample must be analyzed for lead and copper.
 - For Tier 1 and 2 sites only, a 5th liter sample must also be analyzed for lead.





Monitoring Requirements – What's new (cont.)?

- 90th Percentile Calculation
 - For systems with only Tier 3, 4, or 5 sites, all lead and copper samples must be included in the 90th percentile calculation (same as LCR).
 - **NEW**: Calculation for systems with sufficient Tier 1 and 2 sites to meet the minimum number of required sample sites.
 - For **lead**, use the higher result from the 1st or 5th liter for each site. Calculate the 90th percentile as normal.
 - For copper, use the 1st liter result for all sites and calculate the 90th percentile as normal.
 - Cannot use any samples collected from Tier 3, 4, or 5 sites in this calculation.
 - NEW: Calculation for systems with insufficient Tier 1 and 2 sites to meet the minimum number of required sample sites.
 - For **lead**, use the higher result from the 1st or 5th liter for each Tier 1 and 2 site and the highest samples from Tier 3, 4, or 5 until minimum is met. Calculate the 90th percentile.
 - For copper, use all 1st liter samples from Tier 1 and 2 sites first, then highest samples from Tier 3, 4, or 5 until minimum is met. Calculate the 90th percentile.
 - Any remaining Tier 3, 4, or 5 samples cannot be included in the 90th percentile calculations.



Corrosion Control Treatment – What is the same?

- General steps:
 - Submit optimal CCT Recommendation to State, including evaluation WQPs collected for analysis.
 - State reviews recommendation and designates optimal CCT.
 - System installs (or adjusts) optimal CCT.
 - System collects follow-up samples (operational WQPs and lead & copper tap).
- Sample out eligibility.
- Long-term changes in treatment or source requirements.



Corrosion Control Treatment – What's new?

- Water systems must continue to conduct routine lead & copper **tap sampling** during CCT steps.
- Service Line Replacement Deferment
 - A system doing service line replacement does not have to complete CCT steps if it completes service line replacement within 5 years of the first lead action level exceedance (small & medium) or lead PQL (0.005 mg/L) exceedance (large).
 - Replacement rate must be a minimum of 20% per year.
 - Systems with CCT must maintain and operate treatment while completing service line replacement.
 - If the system exceeds either action level after completing replacement, then it must complete CCT steps.



Corrosion Control Treatment – What's new?

Re-optimization

- All water systems that have CCT installed must re-optimize if they exceed the lead or copper action level unless the system:
 - Has already re-optimized CCT after the LCRI Compliance Date AND
 - Is meeting the optimal WQPs designated by the State AND
 - Is continuing to operate and maintain CCT properly.
- If a water system that exceeds the lead or copper action level does not have CCT installed, then it must complete CCT installation steps.

Mandatory Pipe Rig Study

- Large or medium systems with Lead Service Lines that exceed the lead action level must harvest LSLs from their distribution system and construct a flow through pipe rig, operating the rig with finished water.
- After completing the pipe rig study, the system must recommend optimal CCT to the State based on the results of the study.



Corrosion Control Treatment – What's new?

- Distribution System and Site Assessment
 - When an individual lead tap result exceeds 0.010 mg/L, the water system must conduct an assessment using the following steps:

Step	Timeframe	Description
CCT Assessment	Within 5 days of receiving	Collect WQPs at a site that is on the same size main in
	sample results	the same pressure zone, within ½ mile of the high
		sample site. Measure pH, alkalinity, ortho (if used), and
		silica (if used).
Site Assessment	Within 30 days of receiving	Collect and analyze a follow-up lead sample. May use
	sample results	different volumes or collection procedures to assess
		source of elevated lead.
Evaluate Results &	Within 6 months of the end of	Evaluate results of sampling to determine if localized or
recommend treatment	the sampling period	centralized CCT adjustment or other distribution system
		actions are need and submit recommendation to State.
State Approval	Within 6 months of receiving	State must approve the treatment recommendation or
	recommendation	specify alternative approach.
Modifications to OCCT	Within 12 months of State	Water system must make specified adjustments to CCT
	approval	
State OWQP designation	Within 6 months of CCT	State must review CCT modification and designate
	adjustment	OWQPs
Operate in Compliance	Continuous	Continue to operate OCCT within designated
		specifications.

Water Quality Parameters – What is the same?

- Large water systems with CCT installed are required to monitor for WQPs at taps and entry points.
- Small and medium water systems must collect WQPs following a lead or copper action level exceedance.



Water Quality Parameters – What's new?

- Large water systems without CCT that exceeds 0.005 mg/L for lead must collect WQPs.
- Medium water systems with CCT installed are required to monitor WQPs at taps and entry points.
- Calcium is no longer a required WQP.



Service Line Inventory

Initial Inventory (service lines only) due October 16, 2024.

- Baseline Inventory (service lines & connectors) due LCRI Compliance Date.
- Inventory Updates (post LCRI Compliance Date):
 - Inventories (including publicly available inventories) must be updated annually.
 - All unknowns must be identified within 10 years after the LCRI Compliance Date.
 - Updates must include any new information from records, field investigations, or replacements.
 - If a customer contacts the system about a suspected incorrect classification, the system has 60 days to respond and offer to inspect the service line.



Service Line Inventory

- Validating the accuracy of non-lead classifications
 - Any service line classified as non-lead by a method other than records, 2-point visual inspection, or replacement must be in the "validation pool" for verification.
 - System must confirm the material of a random sample of service lines from the pool via 2-point visual inspection. The system must confirm enough to meet a 95% confidence level.
 - Validation must be completed no later than 7 years after the LCRI Compliance Date.



- Service Line Replacement Plan
 - Must be submitted by the LCRI Compliance Date.
 - Must be made publicly available. For water systems serving > 50,000 people, must be made available online.
 - Plan must include:
 - A strategy for identifying unknowns.
 - SOP for full service line replacement
 - Communication strategy to inform people before a service line replacement.
 - A procedure for people to flush after replacement.
 - A prioritization strategy to conduct service line replacement, including how to address local communities disproportionately impacted by lead and populations sensitive to lead effects.
 - A funding strategy for replacement, including how the system intends to assist customers who are unable to pay for replacement of the customer-owned portion.
 - A communication strategy for informing the public about the service line replacement plan and program.

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 Identification of any laws, regulations, and/or water tariff agreements that affect the water system's ability to conduct full service line replacement, including any that require customer consent and/or require/authorize customer cost sharing.

- Mandatory Full Service Line Replacement
 - Water systems must replace all LSLs and GRRs "under their control" within 10 years after the LCRI Compliance Date.
 - "Under their control" means where a water system has legal/physical access to conduct full service line replacement.
 - If the water system does not have control of the service line, document why, citing any specific laws, regulations, or tariffs.
 - Where owner consent is required, the water system must make a "reasonable effort" to obtain consent.
 - "Reasonable effort" means at least 4 communication attempts with at least 2 different methods of communication.
 - If owner refuses, water system is not required to replace the service line. If ownership changes, water system must make a "reasonable effort" to obtain consent from the new owner within 6 months.
 - Minimum Average Annual Replacement Rate (only counts full service line replacements)
 - At least 10% per year over a rolling 3-year period.



- Mandatory Full Service Line Replacement (cont.)
 - Mandatory replacement must be completed within 10 years of the LCRI Compliance Date, unless a different timeline is established:
 - Shortened deadline where the State determines it is feasible.
 - Deferred deadline may be given where a system meets one of the following:
 - If 10% of total service lines needing replaced is greater than 10,000 service lines per year, then the system may complete replacement by a deadline that corresponds with replacing 10,000 service lines a year.
 - If 10% of total service lines needing replaced results in the annual number of replacements to exceed 39 replacements per 1,000 households (0.39), then the system may complete replacement by a deadline that corresponds with a rate of 39 replacements per 1,000 households.
 - Replacement pool
 - Replacement pool = LSLs + GRRs + Unknowns
 - Recalculate every year, removing unknowns ID'd as non-lead and adding non-leads ID'd as LSLs or GRRs.



- Public Outreach for Failure to Meet Replacement Rate
 - A system that fails to meet the service line replacement rate must conduct at least one outreach activity listed below in the year following the deadline for calculating the rolling average and annually thereafter until the replacement rate is met.
 - One Activity Required:
 - Townhall Meeting
 - Participation in a community event to inform the public on replacement program.
 - Contacting customers via phone, text, email, or door hanger.
 - Combination of Two Activities Required:
 - Email customers with LSLs or GRRs to inform them of replacement program and opportunities to replace.
 - Conducting a social media campaign.
 - Outreach via media (radio, TV, etc.)
 - Visiting targeted customers to discuss replacement program and opportunities to replace.



- Replacement of Lead Connectors
 - Must replace when encountered unless the connector is not under the water system's control.
- Customer-Requested Replacements
 - If a customer notifies that they intend to replace their portion of a service line, then the water system must replace their portion ASAP after the customer replaces, but no later than 45 days.
 - If the system fails to meet this deadline, then it must notify the State within 30 days and complete the replacement no later than 180 days after customer replacement.
 - If a customer notifies that they replaced their portion of a service line in the previous 6 months, the system must replace any remaining portion within 45 days of the awareness date.
 - If a customer replacement occurred more than 6 months in the past, the water system is not required to replace its portion but is required to update the inventory.



- Partial Replacements
 - Prohibited unless conducted as part of an emergency repair or in coordination with infrastructure work (unless the planning infrastructure work is a replacement project).
 - Unless the newly installed service line is plastic, the water system must include a dielectric coupling to separate the remaining service line from the newly installed service line to prevent galvanic corrosion.



24-Hour Exceedance Public Notice

- If a system exceeds the lead action level, notice must be given within 24 hours of the system learning of the results.
 - Requirement to begin October 16, 2024.
 - EPA is encouraging systems to begin 24-hour notice prior to October 16, 2024.
 - EPA Template Available:

https://www.epa.gov/system/files/documents/2024-04/lead-action-level-exceedance-tier-1-public-noticetemplate_492024_508.pdf



Public Education

- Must be delivered within 60 days after the end of the tap monitoring period in which the lead exceedance occurred.
- Updated lead health effects language.
- Limited English Proficiency requirements.
 - Translated public education document or,
 - Translated information on importance of the materials and contact information to obtain a copy of or assistance with the translated materials.
- Delivery Requirements
 - CWSs serving >50,000 must post notice on website, and notice must remain there until system is no longer in exceedance (used to be >100,000).
- Supplemental Monitoring
 - Any system that exceeds the lead action level must offer to sample for lead for any customer that requests it.
 - A water system must offer to sample for lead for any person served by an LSL, GRR, or unknown if requested.



Public Education

- Multiple Lead Action Level Exceedances (Multiple ALE)
 - If a system has at least 3 lead action level exceedances in a rolling 5year period, then it needs to complete the following:
 - Make certified filters or POU devices available to all customers (within 60 days of Multiple ALE designation).
 - Conduct a community outreach event to discuss Multiple ALEs. Must do an activity every 6 months until eligible to discontinue.
 - Activities Include:
 - Conducting a townhall meeting.
 - Participating in a community event to make information about ongoing exceedances available.
 - Contacting customers by phone, text, email, or door hanger.
 - Conducting a social media campaign.
 - Using any other State-approved method.
 - A system may discontinue these requirements when it no longer has at least 3 lead ALEs in a rolling 5-year period.



Other Notices

- Consumer Notice
 - Notice is required for both lead and copper results.
 - Notices must be delivered ASAP but no later than 3 calendar days after the water system learns of results.

Service Line Material Notice

- Notice of service line type must be distributed to customers served by an LSL, GRR, or unknown service line no later than 30 days after completion of baseline inventory and repeated annually.
- Notification of a Disturbance of an LSL, GRR, or unknown service line.
 - Notice must be delivered to consumers at locations about potential for elevated lead levels as a results of the disturbance before the service line is returned to service.
 - If there was a disturbance, but service was not shut off/bypassed, notice must be given ASAP but no later than 24 hours after disturbance.



- General Requirements
 - All CWSs must conduct PE and sample for lead in schools and child care facilities unless they were constructed or had their plumbing replaced after January 1, 2014.
 - CWSs must compile a list of facilities they serve and submit it to the State by the LCRI Compliance Date. This list must be confirmed or updated once every 5 years.
- Public Education to Schools and Child Care Facilities
 - At least once a year beginning with the LCRI Compliance Date, systems must contact all facilities to provide info about lead health risk.
 - Within the first 5 years following the LCRI Compliance Date, CWSs must notify elementary schools and child care that are eligible to be sampled with a proposed sampling schedule and info about sampling.



- Sampling Frequency
 - For the first 5 years after the LCRI Compliance date:
 - Sample at least 20% of elementary schools per year.
 - Sample at least 20% of child care facilities per year.
 - Refusals and non-responses count towards the 20%.
 - For each year afterwards:
 - Sample facility upon request.
 - Not required to sample more than 20% per year.
 - Not required to sample a single facility more than once in a 5-year period.
 - For secondary schools:
 - Sample facility upon request.
 - Not required to sample more than 20% of secondary schools per year.
 - Not required to sample a single school more than once in a 5-year period.



- Sampling Protocol
 - For schools:
 - 5 total samples required:
 - 2 drinking water fountains.
 - 1 kitchen faucet used for drinking or cooking.
 - 1 classroom faucet or other outlet used for human consumption.
 - 1 nurse's office faucet, as available.
 - For child care facilities:
 - 2 total samples required:
 - 1 drinking water fountain.
 - 1 kitchen faucet or classroom faucet or other outlet used for consumption.
- Sample collection
 - Must be a cold water tap.
 - Each sample must be first draw.
 - Sample must be 250 mL in volume.
 - Water in tap must have remained stationary for at least 8 hours, but no more than 18 hours.



- Alternative Sampling Programs
 - If the facility was sampled under State or local law/program, the State may issue a written waiver.
 - In North Carolina, NCDHHS and RTI are conducting sampling through the Clean Classrooms for Carolina Kids Program. Any facility sampled through this program will have met the criteria for this section of the LCRI.
 - The State may issue a waiver for facilities sampled in accordance with the LCRI requirements between January 1, 2021 and the LCRI Compliance Date.



Small System Compliance Flexibility

- Applicable to CWSs servicing 3,300 or fewer people and all NTNC systems that exceed the Lead Action Level only.
- State must approve/disapprove a system's small system flexibility recommendation.
- Alternative Compliance Options.
 - POU Devices: Water system must install, maintain, and monitor POU devices in each household and/or each building served by the water system. The water system is responsible for sampling the POU devices and ensuring proper maintenance.
 - Replacement of lead-bearing plumbing: Water systems that have control over all plumbing in its buildings and is not served by an unknown, GRR, or lead service line must replace all plumbing that is not "lead free."



Торіс	What's the same	What's new
Monitoring	 Copper action level (1.3 mg/L) Number of samples required 	 Lead action level (0.010 mg/L) Sampling tiers Sampling procedure
Corrosion Control Treatment	CCT installation proceduresSample out criteria	 Monitoring required during CCT installation Distribution system and site assessment
Service Line Inventory and Replacement	 Initial service line inventory 	 Baseline service line inventory (includes connectors) Mandatory service line identification & replacement
Public Education	 Public Education form required within 60 days of exceedance 	 Limited English proficiency requirements Multiple action level exceedance outreach
Notices	Lead consumer notice required	 24-Hour Public Notice Copper consumer notice required 3-day delivery timeframe for Lead and Copper notices
School and Daycare Sampling	• None	 Elementary schools and daycares must be sampled for lead
Small System Compliance	• None	 Lead-bearing plumbing replacement POU filters

LCRI Due Dates

• October 16, 2024

- Initial Service Line Inventory
- Service Line Inventory Notices
- 24-hour Public Notice starts

LCRI Compliance Date (2027)

- Baseline Service Line Inventory
- Service Line Replacement Plan
- List of schools and child care facilities
- Sample site plan with updated tier sites



Next Steps

- Complete the initial service line inventory.
- Prepare to send Service Line Notices and 24hour public notice.
- Keep an eye on NCDEQ's Compliance Services website for updates on the LCRI.
- NCDEQ will conduct trainings once the LCRI is finalized.





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