CITY OF
FORT LAUDERDALE

All-America City

**Memorandum**

**Memorandum No: 22-034**

**Date:** March 16, 2022

**To:** Honorable Mayor and Commissioners

**From:** Chris Lagerbloom, ICMA-CM, City Manager

**Re:** National Primary Drinking Water Regulations: New Lead and Copper Rule Revisions ("LCRR")

---

In June 1986, the US Congress amended the Safe Drinking Water Act of 1974 ("SDWA"), prohibiting the use of lead pipes and plumbing fixtures, in public water systems and plumbing providing water for human consumption. The Lead and Copper Rule ("LCR"), established in 1991, requires water utilities to monitor and control lead and copper levels in drinking water. A new revision to the LCR was disseminated on December 16, 2021, by the Environmental Protection Agency (EPA). This constitutes the first major update to the LCR, impacting every water system in the United States. The first compliance milestone for the revised LCR is October 16, 2024.

These revisions will significantly alter how water utilities implement corrosion control treatments, conduct compliance sampling, manage lead service lines, and communicate with customers. Key revisions include the following:

1. Lead and Copper Tap Monitoring
2. Lead Trigger Level
3. Corrosion Control Treatment (CCT)
4. Service Line Inventory
5. Lead Service Line Replacement (LSLR)
6. Public Education and Outreach Materials

The goal of the LCRR is to better protect children and communities from the risks of lead exposure at schools and childcare facilities, getting the lead out of our nation's drinking water, and empowering communities through information. Lead and copper rarely exceed the threshold value in most drinking water supplies. These metals, however, are a concern to consumers because some older homes' plumbing may contain lead or copper that may potentially leach into water after entering a home. These revised requirements are anticipated to provide greater and more effective protection of public health by reducing exposure to lead and copper in drinking water.

**Key Changes and Impacts**

1. *Lead and Copper Tap Monitoring*

- The LCR now requires testing in elementary schools and childcare facilities.
- Utilities must submit a list of all Pre-K to 8th grade schools and childcare facilities.
- Annual sampling is now required at 20% of elementary schools and 20% of registered/ licensed childcare facilities. This results in an additional 200 sampling locations in the City.

2. *Changes in Lead "Action" and "Trigger Level" to Protect Public Health*

- The current threshold for lead is established at 15 parts per billion (ppb).
- The revised LCR establishes a more stringent lead threshold of 10 ppb.
- Sampling priorities were changed with a greater focus on lead service lines.

*3. Measures to Ensure Optimal Corrosion Control Treatment (CCT)*

- Fiveash Water Treatment Plant - Add an orthophosphate corrosion control system, which prevents lead and copper from dissolving into the water, at an estimated capital cost of $3 to $5 million with $1.5 million annual cost for chemicals.
- Peele Dixie Water Treatment Plant – Increase orthophosphate dosage at an annual cost of $500,000.

*4. Developing Service Line Inventories*

- All water systems must develop a public inventory of all publicly and privately-owned service lines in the distribution system which will be submitted to the EPA by October 16, 2024. The inventory must be updated annually, or every three (3) years, based on the sampling frequency.
- Currently the City has a known inventory of 26 lead service lines that are being investigated.

*5. Lead Service Line Replacement (LSLR)*

- Utilities are required to create a Lead Service Line Replacement Program (LSLRP).
- The LSLRP must include a data collection method for gathering an inventory of pipes in its system and provide method(s) for replacing all identified lead pipes.
- Utilities must establish a schedule for the replacement program and identify methods to fund the program.

- ***Annual Outreach Meetings:***
  Conducted with local Health Agencies.
  Schools and childcare test results.
  LCR Compliance Monitoring results.
  "Find and Fix it" results.
  Annual LCR report (due July 01 annually).

**Conclusion**

These are some new challenges that the City will need to address in the next three (3) years to comply with the Lead and Copper Rule. Staff has introduced a new multi-year Capital Investment Project (CIP), estimated at ***$8.7 million***, in the FY 2023 budget to address these compliance issues and engage a consultant to assist the City in complying with the regulation.

Attachment – eCFR :: 40 CFR 141.80-93 Subpart I – Lead and Copper Rule

C: Tarlesha W. Smith, Esq., Assistant City Manager
Greg Chavarria, Assistant City Manager
Alain Boileau, City Attorney
David R. Soloman, City Clerk
Megan Gaillard, Interim City Auditor
Department Directors
CMO Managers

**Title 40 - Protection of Environment**
**Chapter I - Environmental Protection Agency**
**Subchapter D - Water Programs**
**Part 141 - National Primary Drinking Water Regulations**

**ENHANCED CONTENT - TABLE OF CONTENTS**



**EDITORIAL NOTE ON PART 141**

**Editorial Note:** Nomenclature changes to part 141 appear at 69 FR 18803, Apr. 9, 2004.

## Subpart I - Control of Lead and Copper

**Source:** 56 FR 26548, June 7, 1991, unless otherwise noted.

### § 141.80 General requirements.

(a) ***Applicability, effective date, and compliance deadlines.*** The requirements of this subpart constitute the national primary drinking water regulations for lead and copper.

(1) The provisions of this subpart apply to community water systems and non-transient, non-community water systems (in this subpart referred to as "water systems" or "systems") as defined at § 141.2.

(2) The requirements of this subpart are effective as of December 16, 2021.

(3) Community water systems and non-transient, non-community water systems must comply with the requirements of this subpart no later than October 16, 2024, except where otherwise specified in §§ 141.81, 141.84, 141.85, 141.86, and 141.90, or where an exemption in accordance with 40 CFR part 142, subpart C or F, has been established by the Administrator.

(4)

(i) Between December 16, 2021, and October 16, 2024, community water systems and non-transient, non-community water systems must comply with 40 CFR 141.80 through 141.91, as codified on July 1, 2020.

(ii) If an exemption from subpart I of this part has been issued in accordance with 40 CFR part 142, subpart C or F, prior to December 16, 2021, then the water systems must comply with 40 CFR 141.80 through 141.91, as codified on July 1, 2020, until the expiration of that exemption.

(b) ***Scope.*** The regulations in this subpart establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line inventory, lead service line replacement, public notice, monitoring for lead in schools and child care facilities, and public education. Several of the requirements in this subpart are prompted by the lead and copper action levels or the lead trigger level, specified in paragraph (c) of this section, as measured in samples collected at consumers' taps. The requirements for sampling for lead in schools and child care facilities and public education requirements in this subpart apply to all community water systems regardless of the results of the compliance tap sampling.

(c) ***Lead trigger level, lead action level, and copper action level.*** Trigger levels and action levels must be determined based on tap water samples collected in accordance with the tap sampling monitoring requirements of § 141.86 for the purpose of calculating the 90th percentile and tested using the analytical methods specified in § 141.89. The trigger level and action levels described in this paragraph (c) are applicable to all sections of subpart I of this part. Trigger level and action levels for lead and copper are as follows:

(1) The *lead trigger level* is exceeded if the 90th percentile concentration of lead as specified in paragraph (c)(4) of this section is greater than 10 µg/L.

(2) The *lead action level* is exceeded if the 90th percentile concentration of lead as specified in paragraph (c)(4) of this section is greater than 15 µg/L.

(3) The *copper action level* is exceeded if the 90th percentile concentration of copper as specified in paragraph (c)(4) of this section is greater than 1.3 mg/L.

(4) For purposes of this subpart, the *90th percentile concentration* shall be computed as follows:

(i) For systems that do not have lead service line sites and only have sites identified as Tier 3, 4, or 5 under § 141.86(a).

(A) The results of all lead or copper samples taken during a tap sampling period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(B) The number of samples taken during the tap sampling period shall be multiplied by 0.9.

(C) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(4)(i)(B) of this section is the 90th percentile concentration.

(D) For water systems serving fewer than 100 people that collect 5 samples per tap sampling period, the 90th percentile concentration is the average of the highest and second highest concentration.

(E) For a public water system that has been allowed by the State to collect fewer than five samples in accordance with § 141.86(c), or has failed to collect five samples, the sample result with the highest concentration is considered the 90th percentile value.

(ii) For public water systems with lead service lines with sites identified as Tier 1 or 2 under § 141.86(a) with enough Tier 1 or 2 sites to meet the minimum number of sites listed in § 141.86(c):

(A) The results of all lead or copper samples taken at Tier 1 or Tier 2 sites during a tap sampling period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Sample results from Tier 3, 4, or 5 sites shall not be included in this calculation. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(B) The number of samples taken at Tier 1 or Tier 2 sites during the tap sampling period shall be multiplied by 0.9.

(C) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(4)(ii)(B) of this section is the 90th percentile concentration.

(D) For water systems serving fewer than 100 people that collect 5 samples per tap sampling period, the 90th percentile concentration is the average of the highest and second highest concentration.

(E) For a public water system that has been allowed by the State to collect fewer than five samples in accordance with § 141.86(c), or has failed to collect five samples, the sample result with the highest concentration is considered the 90th percentile value.

(iii) For systems with lead service lines with sites identified as Tier 1 or 2 under § 141.86(a) with insufficient number of Tier 1 or 2 sites to meet the minimum number of sites listed in § 141.86(c):

(A) The results of all lead or copper samples taken at Tier 1 or Tier 2 sites along with the highest results from Tier 3, 4, or 5 sites sufficient to meet the minimum number of sites shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Sample results from any remaining Tier 3, 4, and 5 sites shall not be included in this calculation. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total minimum number of sites listed in § 141.86(c).

(B) The required minimum number of sites listed in § 141.86(c) shall be multiplied by 0.9.

(C) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(4)(iii)(B) is the 90th percentile concentration.

(D) For water systems serving fewer than 100 people that collect 5 samples per tap sampling period, the 90th percentile concentration is the average of the highest and second highest concentration.

(E) For a public water system that has been allowed by the State to collect fewer than five samples in accordance with § 141.86(c), or has failed to collect five samples, the sample result with the highest concentration is considered the 90th percentile value.

(d) ***Corrosion control requirements.***

(1) All water systems shall install and operate corrosion control treatment in accordance with §§ 141.81 and 141.82, and that meets the definition of *optimal corrosion control treatment* at § 141.2.

(2) Any water system that complies with the applicable corrosion control treatment requirements specified by the State under §§ 141.81 and 141.82 shall be deemed in compliance with the treatment requirement contained in paragraph (d)(1) of this section.

(3) Any small or non-transient non-community water system that complies with the applicable small system compliance flexibility requirements specified by the State under §§ 141.81(a)(3) and 141.93 is deemed to be in compliance with the treatment requirement in paragraph (d)(1) of this section.

(4) Any water system shall notify the State in writing pursuant to § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in § 141.90(a)(3). The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require any such water system to conduct additional monitoring or to take other action the State deems appropriate to ensure that such water system maintains minimal levels of corrosion control in its distribution system.

(e) ***Source water requirements.***

(1) Any system exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by the State under § 141.83.

(2) Any system that changes their source water or makes long-term treatment changes shall submit written documentation to the State describing the change in accordance with §§ 141.81(a)(3), 141.86(d)(2)(iv), and 141.90(a)(3). The State must review and approve the change before it is implemented by the water system.

(f) ***Lead service line replacements and inventory.*** Lead service line replacements must be conducted as follows:

(1) Any water system exceeding the lead action level specified at paragraph (c) of this section must complete mandatory lead service line replacement. Lead service line replacement must be conducted in accordance with § 141.84(g) and must include public education pursuant to § 141.85(a) and (b).

(2) Any water system exceeding the lead trigger level specified at paragraph (c) of this section must complete goal-based lead service line replacement pursuant to § 141.84(f) and public education pursuant to § 141.85(g) and (h).

(3) All water systems must prepare an inventory of service lines connected to its distribution system, whether or not they are owned or controlled by the water system, to identify those service lines that are made of lead or of unknown material. The inventory must be prepared in accordance with § 141.84(a).

(g) ***Public education and notification requirements.*** Pursuant to § 141.85(d), all water systems must provide notification of lead tap water monitoring results to persons served at the sites (taps) that are tested. All community water systems must conduct annual outreach to local and State health agencies pursuant to § 141.85(i). In addition:

(1) Any water system exceeding the lead action level specified at paragraph (c) of this section shall implement the public education requirements in accordance with § 141.85(a) and (b).

(2) Any water system exceeding the lead trigger level specified at paragraph (c) of this section shall provide notification to all customers with a lead service line in accordance with § 141.85(g).

(3) Any water system exceeding the lead action level specified at paragraph (c) of this section shall notify the public in accordance with the public notification requirements in subpart Q of this part.

(4) Any water system with lead service lines, galvanized requiring replacement or lead status unknown service lines in their inventory as specified in § 141.84(a) shall inform all consumers with a lead service line, galvanized requiring replacement, or a lead status unknown service line in accordance with § 141.85(e).

(5) Any water system that fails to reach its goal lead service line replacement rate as required under § 141.84(f) shall conduct outreach activities in accordance with § 141.85(h).

(h) ***Monitoring and analytical requirements.*** Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under this subpart shall be completed in compliance with §§ 141.86, 141.87, 141.88, and 141.89.

(i) ***Reporting requirements.*** Systems shall report to the State any information required by the treatment provisions of this subpart and § 141.90.

(j) ***Recordkeeping requirements.*** Systems shall maintain records in accordance with § 141.91.

(k) ***Violation of national primary drinking water regulations.*** Failure to comply with the applicable requirements of this section and §§ 141.81 through 141.93, including requirements established by the State pursuant to the provisions in this subpart, is a violation of the national primary drinking water regulations for lead and copper.

(l) ***Testing in schools and child care facilities.*** All community water systems must collect samples from all schools and child care facilities within its distribution system in accordance with § 141.92.

*[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 72 FR 57814, Oct. 10, 2007; 86 FR 4282, Jan. 15, 2021; 86 FR 31947, June 16, 2021]*

## § 141.81 Applicability of corrosion control treatment steps to small, medium, and large water systems.

(a) ***Corrosion control treatment.*** This section sets forth when a system must complete the corrosion control treatment steps for 31947, June optimize corrosion control treatment based on size, whether the system has corrosion control treatment, and whether it has exceeded the lead trigger and/or action level and/or the copper action level.

(1) ***Large water system (serving >50,000 people).***

(i) Large water systems with corrosion control treatment that exceed either the lead trigger level or copper action level shall complete the corrosion control treatment steps specified in paragraph (d) of this section.

(ii) Large water *systems without corrosion control treatment* with 90th percentile results as calculated in accordance with § 141.80(c)(4) that exceed either the lead practical quantitation level of 0.005 mg/L or the copper action level shall complete the corrosion control treatment steps specified in paragraph (e) of this section.

(iii) Large water systems with corrosion control treatment with 90th percentile results as calculated in accordance with § 141.80(c)(4) that exceed the lead practical quantitation level but do not exceed lead trigger level or the copper action level may be required by the State to complete the corrosion control treatment steps in paragraph (d) of this section.

(2) ***Medium-size water systems (serving >10,000 and ≤50,000 people).***

(i) Medium-size water systems with corrosion control treatment that exceed either the lead trigger level or copper action level shall complete the corrosion control treatment steps specified in paragraph (d) of this section.

(ii) Medium-size water *systems without corrosion control treatment* that exceed either the lead or copper action level shall complete the corrosion control treatment steps specified in paragraph (e) of this section.

(iii) Medium-size water *systems without corrosion control treatment* that exceed the lead trigger level but do not exceed the lead or copper action levels shall complete the treatment recommendation step specified in paragraph (e)(1) of this section (Step 1). The water system shall complete the remaining steps in paragraph (e) of this section if it subsequently exceeds either the lead or copper action level.

(3) ***Small water systems (serving ≤10,000 people) and non-transient, non-community water systems.***

(i) Small and non-transient non-community water systems with corrosion control treatment that exceed the lead trigger level or the lead action level but do not exceed the copper action level, shall complete the corrosion control treatment steps specified in paragraph (d) of this section, if corrosion control treatment is approved by the State as a compliance option under § 141.93(a).

(ii) Small and non-transient, non-community water systems with corrosion control treatment that exceed the copper action level shall complete the corrosion control treatment steps specified in paragraph (d) of this section.

(iii) Small and non-transient, non-community water *systems without corrosion control treatment* that exceed the lead action level shall complete the corrosion control treatment steps specified in paragraph (e) of this section if corrosion control treatment is approved by the State as a compliance option under § 141.93.

(iv) Small and non-transient, non-community water *systems without corrosion control treatment* that exceed the copper action level shall complete the corrosion control treatment steps specified in paragraph (e) of this section.

(b) ***Systems deemed to have optimized corrosion control.*** A system is deemed to have optimal corrosion control treatment (*OCCT*) or re-optimized *OCCT* if the system satisfies one of the criteria specified in paragraphs (b)(1) through (3) of this section. Any such system deemed to have *OCCT* under this paragraph and which has corrosion control treatment in place shall continue to operate and maintain that treatment and meet any additional requirements that the State determines to be appropriate to ensure *optimal corrosion control treatment* is maintained.

(1) A small or medium-size water system without corrosion control treatment is deemed to have optimal corrosion control if the water system does not exceed the lead action level and copper action level during two consecutive 6-month tap sampling monitoring periods and thereafter remains at or below the lead trigger level and copper action level in all tap sampling periods conducted in accordance with § 141.86.

(2) A small or medium-size water system with corrosion control treatment is deemed to have optimal corrosion control treatment if the water system does not exceed the lead trigger level and copper action level during two consecutive 6-month monitoring periods conducted in accordance with § 141.86 and thereafter remains at or below the lead trigger level and copper action level in all tap sampling periods conducted in accordance with § 141.86. Small or medium-size systems with corrosion control treatment that exceed the lead trigger level but do not exceed the lead and copper action levels during two consecutive 6-month monitoring

periods and thereafter remains at or below the lead and copper action levels in all tap sampling periods conducted in accordance with § 141.86 are deemed to have re-optimized *optimal corrosion control treatment* if the system meets the requirements of this section. Where the State has set optimal water quality parameters (OWQPs) under paragraph (d) or (e) of this section a system will not be eligible to be deemed to have optimized or re-optimized *OCCT* pursuant to paragraph (b) of this section.

(3) Any water system is deemed to have optimized or re-optimized corrosion control if it submits results of tap water monitoring in accordance with § 141.86 demonstrating that the 90th percentile tap water lead level is less than or equal to the lead practical quantitation level of 0.005 mg/L and does not exceed the copper action level for two consecutive 6-month tap sampling monitoring periods, and does not have optimal water quality parameters that were set by the State under paragraph (d) or (e) of this section. Any such system with 90th percentile tap sample results that thereafter exceeds the lead practical quantitation level or copper action level during any tap sampling period shall not be eligible to be deemed to have optimized *OCCT* in accordance with this paragraph (b)(3) without first completing the treatment steps specified in paragraph (d) or (e) of this section

(i) [Reserved]

(ii) Any water system deemed to have optimized corrosion control in accordance with this paragraph (b)(3) shall continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in § 141.86(c) and collecting samples at times and locations specified in § 141.86(d)(4)(v).

(iii) through (v) [Reserved]

(c) ***Corrosion control steps completion for small and medium-size water systems without corrosion control treatment.*** Any small or medium-sized system without corrosion control treatment required to complete the corrosion control steps in paragraph (e) of this section due to its exceedance of the lead or copper action level that does not exceed either the lead or copper action levels during each of two consecutive 6-month tap sample monitoring periods pursuant to § 141.86 prior to the start of Step 3 in paragraph (e)(3) of this section or Step 5 in paragraph (e)(5) of this section may cease completing the steps and is not required to complete Step 3 or Step 5, respectively, except that medium-sized systems with lead service lines and small systems with lead service lines that choose the corrosion control option pursuant to § 141.93 must complete a corrosion control treatment study under paragraph (e)(3)(i) of this section. Any system that initiates Step 5 must complete all remaining steps in paragraphs (e)(6) through (8) of this section and is not permitted to cease the steps. Any system that ceases the steps either prior to Step 3 or Step 5 and thereafter exceeds either the lead or copper action level shall not be permitted to cease the steps a second time and shall complete the applicable treatment steps beginning with the first treatment step which was not previously completed in its entirety. The State may require a water system to repeat treatment steps previously completed by the water system when the State determines that this is necessary to implement the treatment requirements of this section. The State must notify the system in writing of such a determination and explain the basis for its decision.

(d) ***Treatment steps and deadlines for water systems re-optimizing corrosion control treatment.*** Except as provided in paragraph (b) of this section or § 141.93, water systems with corrosion control treatment shall complete the following corrosion control treatment steps (described in the referenced portions of §§ 141.82, 141.86, and 141.87) by the indicated time periods.

(1) ***Step 1.***

(i) A water system other than those covered in paragraph (d)(1)(ii) of this section shall recommend re-optimized optimal corrosion control treatment (§ 141.82(c)) within six months after the end of the tap sampling period during which it exceeds either the lead trigger level or copper action level. States may approve modifications of the existing corrosion control treatment without a study for systems that exceed the lead trigger level, but do not exceed the lead or copper action level. The State shall specify re-optimized corrosion control treatment within six months of receiving the treatment recommendation. The system shall complete modifications to corrosion control treatment to have re-optimized corrosion control treatment installed within six months of the State specifying re-optimized corrosion control treatment.

(ii) A water system with lead service lines that exceeds the lead action level must harvest lead pipes from the distribution system and construct flow-through pipe loops and operate the loops with finished water within one year after the end of the tap sampling period during which it exceeds the lead action level. These water systems must proceed to Step 3 in paragraph (d)(3) of this section and conduct the corrosion control studies for re-optimization under paragraph (d)(3)(i) of this section using the pipe loops.

(2) ***Step 2.***

(i) Large water systems shall conduct the corrosion control studies for re-optimization under paragraph (d)(3) of this section (Step 3) unless the system is at or below the lead action level and the State has approved the modification of the existing corrosion control treatment made under paragraph (d)(3)(i) of this section (Step 1).

(ii) Within 12 months after the end of the tap sampling period during which a small or medium-size water system with corrosion control treatment exceeds the lead trigger level or copper action level, the State may require the water system to perform corrosion control studies for re-optimization (§ 141.82(c)(2) or (3)). If the State does not require the system to perform such studies, the State must specify re-optimized corrosion control treatment (§ 141.82(d)(2)) within the timeframes specified in paragraphs (d)(2)(ii)(A) and (B) of this section. The State must provide its determination to the system in writing.

(A) For medium-size water systems, within 12 months after the end of the tap sampling period during which such water system exceeds the lead trigger level or copper action level.

(B) For small water systems, within 18 months after the end of the tap sampling period during which such water system exceeds the lead trigger level or copper action level.

(3) ***Step 3.***

(i) Any water system with lead service lines that exceeded the lead action level shall complete the corrosion control treatment studies for re-optimization within 30 months after the end of the tap sampling period during which it exceeds the lead action level.

(ii) If the water system is required to perform corrosion control studies under paragraph (d)(2) of this section (Step 2), the water system shall complete the studies (§ 141.82(c)(2)) within 18 months after the State requires that such studies be conducted.

(4) ***Step 4.***

(i) The State shall designate re-optimized corrosion control treatment (§ 141.82(d)(3)) within six months after completion of paragraph (d)(3)(i) of this section (Step 3).

(ii) If the water system has performed corrosion control studies under paragraph (d)(2) of this section (Step 2), the State shall designate re-optimized corrosion control treatment (§ 141.82(d)(2) or (4)) within six months after completion of paragraph (d)(3)(ii) of this section (Step 3).

(5) ***Step 5.***

(i) Large water systems shall complete modifications to corrosion control treatment to have re-optimized corrosion control treatment installed within 12 months after completion of paragraph (d)(4)(i) of this section (Step 4).

(ii) Small or medium-size water systems shall install re-optimized corrosion control treatment (§ 141.82(e)(1)) within 12 months after completion of paragraph (d)(4)(ii) of this section (Step 4).

(6) ***Step 6.*** Water systems must complete follow-up sampling (§§ 141.86(d)(2) and 141.87(c)) within 12 months after completion of paragraph (d)(5)(i) or (ii) of this section (Step 5).

(7) ***Step 7.*** The State must review the water system's installation of treatment and designate optimal water quality control parameters (§ 141.82(f)(1)) within six months of completion of paragraph (d)(6) of this section (Step 6).

(8) ***Step 8.*** The water system must operate in compliance with the State-designated optimal water quality control parameters (§ 141.82(g)) and continue to conduct tap sampling (§ 141.86(d)(3) and water quality parameter monitoring under § 141.87(d)).

(e) ***Treatment steps and deadlines for systems without corrosion control treatment.*** Except as provided in paragraph (b) of this section or § 141.93, water systems without corrosion control treatment must complete the following corrosion control treatment steps (described in the referenced portions of §§ 141.82, 141.86, and 141.87) by the indicated time periods.

(1) ***Step 1.***

(i) A water system other than those covered in paragraph (e)(1)(ii) or (iii) of this section must recommend optimal corrosion control treatment (§ 141.82(a)(1), (2), (3), or (4)) within six months after the end of the tap sampling period during which it exceeds either the lead trigger level or copper action level.

(ii) A water system with lead service lines that exceeds the lead action level must harvest lead pipes from the distribution system and construct flow-through pipe loops and operate the loops with finished water within one year after the end of the tap sampling period during which it exceeds the lead action level. These water systems must proceed to Step 3 in paragraph (e)(3) of this section and conduct the corrosion control studies for optimization under paragraph (e)(3)(i) of this section using the pipe loops.

(iii) Large water systems under paragraph (a)(1)(ii) of this section must conduct the corrosion control studies for optimization under paragraph (e)(3) of this section (Step 3).

(2) ***Step 2.*** Within 12 months after the end of the tap sampling period during which a water system exceeds the lead or copper action level, if not otherwise required by this rule, the State may require the water system to perform corrosion control studies (§ 141.82(b)(1)). The State must notify the system in writing of this requirement. If the State does not require the system to perform such studies, the State must specify optimal corrosion control treatment (§ 141.82(d)(1) or (2)) within the timeframes established in paragraphs (e)(2)(i) and (ii) of this section. The State must provide its determination to the system in writing.

(i) For medium-size water systems, within 18 months after the end of the tap sampling monitoring period during which such water system exceeds the lead trigger level or copper action level.

(ii) For small water systems, within 24 months after the end of the tap sampling monitoring period during which such water system exceeds the lead trigger level or copper action level.

(3) ***Step 3.***

(i) Large water systems with or without lead service line and medium or small systems with lead service lines that exceed the lead action level shall complete the corrosion control treatment studies for optimization within 30 months after the end of the tap sampling period during which it exceeds the lead action level.

(ii) If the State requires a water system to perform corrosion control studies under paragraph (e)(2) of this section (Step 2), the water system must complete the studies (§ 141.82(c)(1)) within 18 months after the State notifies the system in writing that such studies must be conducted.

(4) ***Step 4.***

(i) The State shall designate re-optimized corrosion control treatment (§ 141.82(d)(3)) within six months after completion of paragraph (d)(3)(i) of this section (Step 3).

(ii) If the water system has performed corrosion control studies under paragraph (e)(2) of this section (Step 2), the State must designate *optimal corrosion control treatment* (§ 141.82(d)(1)) within six months after completion of paragraph (e)(3) of this section (Step 3).

(5) ***Step 5.*** The water system must install *optimal corrosion control treatment* (§ 141.82(e)(1)) within 24 months after the State designates *optimal corrosion control treatment* under paragraph (e)(2) or (4) of this section (Step 2 or Step 4).

(6) ***Step 6.*** The water system shall complete follow-up sampling (§§ 141.86(d)(2)(i) and 141.87(c)) within 12 months after completion of paragraph (e)(5) of this section (Step 5).

(7) ***Step 7.*** The State must review the water system's installation of treatment and designate optimal water quality control parameters (§ 141.82(f)(1)) within six months of completion of paragraph (e)(6) of this section (Step 6).

(8) ***Step 8.*** The water system must operate in compliance with the State-designated optimal water quality control parameters (§ 141.82(g)(1)) and continue to conduct tap sampling (§ 141.86(d)(3) and water quality parameter monitoring under § 141.87(d)).

(f) ***Treatment steps and deadlines for small community water systems and non-transient non-community water systems electing corrosion control treatment (CCT) as a compliance option under § 141.93, or as required by the State.*** Water systems selecting the corrosion control small system compliance flexibility option must complete the following steps by the indicated time periods.

(1) ***Step 1.*** A water system recommends corrosion control treatment as a small system compliance flexibility option under § 141.93(a)(2) within six months after the end of the tap sampling period during which it exceeds either the lead trigger level or the lead action level.

(2) ***Step 2.*** The State approves in writing the recommendation of corrosion control treatment as a small system compliance flexibility option or designates an alternative option in accordance with § 141.93(a) within six months of the recommendation by the water system in paragraph (f)(1) of this section (Step 1). Water systems required by the State to optimize or re-optimize corrosion control treatment must follow the schedules in paragraph (d) or (e) of this section, beginning with Step 3 in paragraph (d)(3) or (e)(3) of this section unless the State specifies optimal corrosion control treatment pursuant to either paragraph (d)(2)(ii) or (e)(2)(ii) of this section, as applicable.

*[86 FR 4287, Jan. 15, 2021]*

## § 141.82 Description of corrosion control treatment requirements.

This section sets forth the requirements applicable to systems and states in the designation of optimal corrosion control treatment for a system that is optimizing or reoptimizing corrosion control treatment. Each system must complete the corrosion control treatment requirements in this section as applicable to such system under § 141.81.

(a) ***System recommendation regarding corrosion control treatment for systems that do not contain lead service lines and systems with lead service lines that do not exceed the lead action level.***

(1) Any system under this paragraph (a) without corrosion control treatment that is required to recommend a treatment option in accordance with § 141.81(e) must, based on the results of lead and copper tap sampling and water quality parameter monitoring, recommend designation of one or more of the corrosion control treatments listed in paragraph (c)(1)(i) of this section. Small community water systems and non-transient non-community water systems that exceed the copper action level must comply with this paragraph (a)(1). The State may require the system to conduct additional water quality parameter monitoring to assist the State in reviewing the system's recommendation.

(2) Any small community water system or non-transient non-community water system in this paragraph (a) without corrosion control treatment that chooses to pursue a small water system compliance flexibility option and is required to recommend an option in accordance with § 141.81(f) must, based on the results of lead tap sampling and water quality parameter monitoring, recommend designation of one of the options listed in § 141.93. Systems with no lead service lines that exceed the lead action level and select corrosion control under § 141.93(a)(2) must recommend designation of one or more of the corrosion control treatments listed in paragraph (c)(1) of this section as the optimal corrosion control treatment for that system.

(3) Any system under this paragraph (a) that exceeds the lead action level and selects corrosion control under § 141.93(a)(2) must recommend designation of one or more of the corrosion control treatments listed in paragraph (c)(1)(i) of this section as the optimal corrosion control treatment for that system. A corrosion control study under paragraph (c) of this section is not required for medium and small systems that exceed the lead trigger level but do not exceed the lead and copper action levels, unless required by the state.

(4) Any small community water system or non-transient, non-community water system with corrosion control treatment that that exceeds the lead action level and selects corrosion control under § 141.93(a)(2) must recommend designation of one or more of the corrosion control treatments listed in paragraph (c)(2) of this section as the optimal corrosion control treatment for that system.

(5) States may waive the requirement for a system to recommend OCCT if the State requires the system, in writing, to complete a corrosion control study within 3 months after the end of the tap sampling period during which the exceedance occurred. Such systems shall proceed directly to paragraph (c) of this section and complete a corrosion control study.

(b) ***State decision to require studies to identify initial optimal corrosion control treatment and re-optimized optimal corrosion control treatment except for large systems and small and medium systems with lead service lines that exceed the lead action level.*** Corrosion control treatment studies are always required for large systems that exceed the lead action level, large water *systems without corrosion control treatment* with 90th percentile results that exceed either the lead practical quantitation level of 0.005 mg/L or the copper action level, medium sized systems with lead service lines that exceed the lead action level, and small systems with lead service lines that exceed the lead action level and select the corrosion control treatment option under § 141.93(a).

(1) The State may require any small or medium-size system without corrosion control that exceeds either the lead or copper action level to perform corrosion control treatment studies under paragraph (c)(1) of this section to identify *optimal corrosion control treatment* for the system.

(2) The State may require any small or medium-size system without corrosion control that exceeds the lead trigger level but not the lead or copper action level to perform corrosion control treatment studies under paragraph (c)(1) of this section to identify *optimal corrosion control treatment* for the system. This corrosion control treatment shall be installed if the lead or copper action level is subsequently exceeded.

(3) The State may require any small or medium-size water systems with corrosion control treatment exceeding either the lead trigger level or copper action level to perform corrosion control treatment studies under paragraph (c)(2) of this section to identify re-optimized optimal corrosion control treatment for the system (*i.e.,* optimal corrosion control treatment after a re-optimization evaluation).

(c) ***Performance of corrosion control studies.***

(1) Water systems without corrosion control treatment that are required to conduct corrosion control studies must complete the following:

(i) Any water system without corrosion control treatment must evaluate the effectiveness of each of the following treatments, and if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for the system:

(A) Alkalinity and pH adjustment;

(B) The addition of an orthophosphate- or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective corrosion inhibitor residual concentration in all test samples;

(C) The addition of an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 1 mg/L (as PO4) in all test samples; and

(D) The addition of an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 3 mg/L (as $PO_4$) in all test samples.

(ii) The water system must evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry, and distribution system configurations. Large and medium systems and small community water systems and non-transient non-community water systems that select the corrosion control treatment option under § 141.93 with lead service lines that exceed the lead action level must conduct pipe rig/loop studies using harvested lead service lines from their distribution systems to assess the effectiveness of corrosion control treatment options on the existing pipe scale. For these systems, metal coupon tests can be used as a screen to reduce the number of options that are evaluated using pipe rig/loops to the current conditions and two options.

(iii) The water system must measure the following water quality parameters in any tests conducted under this paragraph (c)(1)(iii) before and after evaluating the corrosion control treatments listed in paragraphs (c)(1)(i) and (ii) of this section:

(A) Lead;

(B) Copper;

(C) pH;

(D) Alkalinity;

(E) Orthophosphate as $PO_4$ (when an orthophosphate-based inhibitor is used); and

(F) Silicate (when a silicate-based inhibitor is used).

(iv) The water system must identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with one of the following:

(A) Data and documentation showing that a particular corrosion control treatment has adversely affected other drinking water treatment processes when used by another water system with comparable water quality characteristics. Systems using coupon studies to screen and/or pipe loop/rig studies to evaluate treatment options must not exclude treatment strategies from the studies based on the constraints identified in this section.

(B) Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other drinking water quality treatment processes. Systems using coupon studies to screen and/or pipe loop/rig studies to evaluate treatment options must not exclude treatment strategies from the studies based on the constraints identified in this section unless the treatment was found to be ineffective in a previous pipe loop/rig study.

(v) The water system must evaluate the effect of the chemicals used for corrosion control treatment on other drinking water quality treatment processes. Systems using coupon studies to screen and/or pipe loop/rig studies to evaluate treatment options shall not exclude treatment strategies from the studies based on the effects identified in this section.

(vi) On the basis of an analysis of the data generated during each evaluation, the water system must recommend to the State in writing the treatment option that the corrosion control studies indicate constitutes *optimal corrosion control treatment* for that system as defined in § 141.2. The water system must provide a rationale for its recommendation along with all supporting documentation specified in paragraphs (c)(2)(i) through (v) of this section.

(2) Systems with corrosion control treatment that are required to conduct corrosion control studies to determine re-optimized *OCCT* must complete the following:

(i) The water system must evaluate the effectiveness of the following treatments, and if appropriate, combinations of the following treatments to identify the re-optimized *optimal corrosion control treatment* for the system:

(A) Alkalinity and/or pH adjustment, or re-adjustment;

(B) The addition of an orthophosphate- or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective corrosion inhibitor residual concentration in all test samples if no such inhibitor is utilized;

(C) The addition of an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 1 mg/L ($PO_4$) in all test samples unless the current inhibitor process already meets this residual; and

(D) The addition of an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 3 mg/L ($PO_4$) in all test samples unless the current inhibitor process already meets this residual.

(ii) The water system must evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry, and distribution system configurations. If the water system has lead service lines and exceeds the lead action level, it must conduct pipe rig/loop studies using harvested lead service lines from their distribution systems to assess the effectiveness of corrosion control treatment options on the existing pipe scale. For these systems, metal coupon tests can be used as a screen to reduce the number of options that are evaluated using pipe rig/loops to the current conditions and two options.

(iii) The water system must measure the following water quality parameters in any tests conducted under this paragraph (c)(2)(iii) before and after evaluating the corrosion control treatments listed in paragraphs (c)(2)(i) and (ii) of this section:

(A) Lead;

(B) Copper;

(C) pH;

(D) Alkalinity;

(E) Orthophosphate as $PO_4$ (when an orthophosphate-based inhibitor is used); and

(F) Silicate (when a silicate-based inhibitor is used).

(iv) The water system must identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with one of the following:

(A) Data and documentation showing that a particular corrosion control treatment has adversely affected other drinking water treatment processes when used by another water system with comparable water quality characteristics. Systems using coupon studies to screen and/or pipe loop/rig studies to evaluate treatment options must not exclude treatment strategies from the studies based on the constraints identified in this section.

(B) Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other drinking water quality treatment processes. Systems using coupon studies to screen and/or pipe loop/rig studies to evaluate treatment options shall not exclude treatment strategies from the studies based on the constraints identified in this section unless the treatment was found to be ineffective in a previous pipe loop/rig study.

(v) The water system must evaluate the effect of the chemicals used for corrosion control treatment on other drinking water quality treatment processes. Systems using coupon studies to screen and/or pipe loop/rig studies to evaluate treatment options shall not exclude treatment strategies from the studies based on the effects identified in this section.

(vi) On the basis of an analysis of the data generated during each evaluation, the water system must recommend to the State in writing the treatment option that the corrosion control studies indicate constitutes *optimal corrosion control treatment* for that system as defined in § 141.2. The water system must provide a rationale for its recommendation along with all supporting documentation specified in paragraph (c)(1)(i) through (v) of this section.

(d) ***State designation of optimized optimal corrosion control treatment and re-optimized optimal corrosion control treatment.*** When designating optimal corrosion control treatment, the State must consider the effects that additional corrosion control treatment will have on water quality parameters and on other drinking water quality treatment processes. The State must notify the water system of its

designation of *optimal corrosion control treatment* in writing and explain the basis for this determination. If the State requests additional information to aid its review, the water system must provide the information.

(1) ***Designation of OCCT for systems without corrosion control treatment.*** Based upon considerations of available information including, where applicable, studies conducted under paragraph (c)(1) of this section and/or a system's recommended corrosion control treatment option, the State must either approve the corrosion control treatment option recommended by the system or designate alternative corrosion control treatment(s) from among those listed in paragraph (c)(1)(i) of this section or, where applicable, an alternate *small water system compliance flexibility* option under § 141.93(a).

(2) ***Designation of re-optimized OCCT for systems with corrosion control treatment.*** Based upon considerations of available information including, where applicable, studies conducted under paragraph (c)(2) of this section and/or a system's recommended treatment alternative, the State must either approve the corrosion control treatment option recommended by the water system or designate alternative corrosion control treatment(s) from among those listed in paragraph (c)(2)(i) of this section or, where applicable, an alternate *small water system compliance flexibility* option under § 141.93.

(e) ***Installation of optimal corrosion control treatment and re-optimization of corrosion control treatment.*** Each system must properly install and operate throughout its distribution system the *optimal corrosion control treatment* designated by the State under paragraph (d) of this section.

(f) ***State review of treatment and specification of optimal water quality control parameters for optimal corrosion control treatment and re-optimized corrosion control treatment.*** The State must evaluate the results of all lead and copper tap sampling and water quality parameter sampling submitted by the water system and determine whether the water system has properly installed and operated the optimal corrosion control treatment designated by the State in paragraph (d)(1) or (2) of this section, respectively. Upon reviewing the results of tap water and water quality parameter monitoring by the water system, both before and after the water system installs optimal corrosion control treatment, the State must designate:

(1) A minimum value or a range of values for pH measured at each entry point to the distribution system.

(2) A minimum pH value measured in all tap samples. Such a value shall be equal to or greater than 7.0, unless the State determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control.

(3) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for orthophosphate (as $PO_4$) or silicate measured at each entry point to the distribution system.

(4) If a corrosion inhibitor is used, a minimum orthophosphate or silicate concentration measured in all tap samples that the State determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system. When orthophosphate is used, such an orthophosphate concentration shall be equal to or greater than 0.5 mg/L (as$PO_4$) for *OCCT* designations under paragraph (d)(1) of this section and 1.0 mg/L for *OCCT* designations under paragraph (d)(2) of this section, unless the State determines that meeting the applicable minimum orthophosphate residual is not technologically feasible or is not necessary for *optimal corrosion control treatment.*

(5) If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples.

(6) The values for the applicable water quality control parameters, previously listed in this section, shall be those that the State determines to reflect *optimal corrosion control treatment* for the water system. The State may designate values for additional water quality control parameters determined by the State to reflect *optimal corrosion control treatment* for the water system. The State must notify the system in writing of these determinations and explain the basis for its decisions.

(g) ***Continued operation and monitoring for optimal corrosion control treatment and re-optimized optimal corrosion control treatment.*** All systems optimizing or re-optimizing corrosion control must continue to operate and maintain *optimal corrosion control treatment,* including maintaining water quality parameters at or above minimum values or within ranges designated by the State under paragraph (f) of this section, in accordance with this paragraph (g) for all samples collected under § 141.87(d) through (f). The requirements of this paragraph (g) apply to all systems, including consecutive systems that distribute water that has been treated to control corrosion by another system, and any water system with corrosion control treatment, *optimal corrosion control treatment,* or re-optimized *OCCT* that is not required to monitor water quality parameters under § 141.87. Compliance with the requirements of this paragraph (g) shall be determined every six months, as specified under § 141.87(d). A water system is out of compliance with the requirements of this paragraph (g) for a six-month period if it has excursions for any State-specified parameter on more than nine days, cumulatively, during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the State. Daily values are calculated as set out in paragraphs (g)(1) through (3) of this section. States have discretion to not include results of obvious sampling errors from this calculation. Sampling errors must still be recorded even when not included in calculations.

(1) On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value must be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both. If EPA has approved an alternative formula under § 142.16(d)(1)(ii) of this chapter in the State's application for a program revision submitted pursuant to § 142.12 of this chapter, the State's formula shall be used to aggregate multiple measurements taken at a sampling point for the water quality parameters in lieu of the formula in this paragraph (g)(1).

(2) On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.

(3) On days when no measurement is collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sampling location.

(h) ***Modification of State treatment decisions for optimal corrosion control and re-optimized corrosion control.*** Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the optimal corrosion control treatment under paragraph (d) of this section, or optimal water quality control parameters under paragraph (f) of this section. A request for modification by a system or other interested party shall be in writing, explaining why the modification is appropriate, and providing supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the water system continues to optimize corrosion control treatment. A revised determination must be made in writing, set forth the new treatment requirements and/or water quality parameters, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications for re-optimized corrosion control treatment.

(i) ***Treatment decisions by EPA in lieu of the State on optimal corrosion control treatment and re-optimized corrosion control treatment.*** Pursuant to the procedures in § 142.19 of this chapter, EPA Regional Administrator may review optimal corrosion control treatment determinations made by a State under paragraph (d)(1) or (2), (f), or (h) of this section and issue Federal treatment determinations consistent with the requirements of paragraph (d)(1) or (2), (f), or (h) of this section where the Regional Administrator finds that:

(1) A State has failed to issue a treatment determination by the applicable deadlines contained in § 141.81;

(2) A State has abused its discretion in a substantial number of cases or in cases affecting a substantial population; or

(3) The technical aspects of a State's determination would be indefensible in a Federal enforcement action taken against a water system.

(j) ***Find-and-fix assessment for tap sample sites that exceed the lead action level.*** The water system shall conduct the following steps, when a tap sample site exceeds the lead action level under monitoring conducted under § 141.86.

(1) ***Step 1: corrosion control treatment assessment.*** The water system must sample at a new water quality parameter site that is on the same size water main in the same pressure zone and located within a half mile of the location with the action level exceedance within 5 days of receiving the sample results. Small water *systems without corrosion control treatment* may have up to 14 days to collect the samples. The water system must measure the following parameters:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate (as $PO_4$), when an inhibitor containing an orthophosphate compound is used;

(iv) Silica, when an inhibitor containing a silicate compound is used; and

(v) Water systems with an existing water quality parameter location that meets the requirements of this section can conduct this sampling at that location.

(vi) All water systems required to meet optimal water quality control parameters but that do not have an existing water quality parameter location that meets the requirement of this section must add new sites to the minimum number of sites as described in § 141.87(g). Sites must be added until a system has twice the minimum number of sites listed in Table 1 to § 141.87(a)(2). When a system exceeds this upper threshold for the number of sites, the State has discretion to determine if the newer site can better assess the effectiveness of the corrosion control treatment and to remove existing sites during sanitary survey evaluation of OCCT.

(2) ***Step 2: Site assessment.*** Water systems shall collect a follow-up sample at any tap sample site that exceeds the action level within 30 days of receiving the sample results. These follow-up samples may use different sample volumes or different sample collection procedures to assess the source of elevated lead levels. Samples collected under this section must be submitted to the State but shall not be included in the 90th percentile calculation for compliance monitoring under § 141.86. If the water system is unable to collect a follow-up sample at a site, the water system must provide documentation to the State, explaining why it was unable to collect a follow-up sample.

(3) ***Step 3.*** Water systems shall evaluate the results of the monitoring conducted under this paragraph (j)(3) to determine if either localized or centralized adjustment of the *optimal corrosion control treatment* or other distribution system actions are necessary and submit the recommendation to the State within six months after the end of the tap sampling period in which the site(s) exceeded the lead action level. Corrosion control treatment modification may not be necessary to address every exceedance. Other distribution system actions may include flushing to reduce water age. Water systems must note the cause of the elevated lead level, if known from the site assessment, in their recommendation to the State as site-specific issues can be an important factor in why the system is not recommending any adjustment of corrosion control treatment or other distribution system actions. Systems in the process of optimizing or re-optimizing optimal corrosion control treatment under paragraphs (a) through (f) of this section do not need to submit a treatment recommendation for find-and-fix.

(4) ***Step 4.*** The State shall approve the treatment recommendation or specify a different approach within six months of completion of Step 3 as described in paragraph (j)(3) of this section.

(5) ***Step 5.*** If the State-approved treatment recommendation requires the water system to adjust the *optimal corrosion control treatment* process, the water system must complete modifications to its corrosion control treatment within 12 months after completion of Step 4 as described in paragraph (j)(4) of this section. Systems without corrosion control treatment required to install *optimal corrosion control treatment* must follow the schedule in § 141.81(e).

(6) ***Step 6.*** Water systems adjusting its *optimal corrosion control treatment* must complete follow-up sampling (§§ 141.86(d)(2) and 141.87(c)) within 12 months after completion of Step 5 as described in paragraph (j)(5) of this section.

(7) ***Step 7.*** For water systems adjusting its *optimal corrosion control treatment,* the State must review the water system's modification of corrosion control treatment and designate optimal water quality control parameters (§ 141.82(f)(1)) within six months of completion of Step 6 as described in paragraph (j)(6) of this section.

(8) ***Step 8.*** For a water system adjusting its *optimal corrosion control treatment,* the water system must operate in compliance with the State-designated optimal water quality control parameters (§ 141.82(g)) and continue to conduct tap sampling (§§ 141.86(d)(3) and 141.87(d)).

*[86 FR 4287, Jan. 15, 2021]*

### § 141.83 Source water treatment requirements.

Systems shall complete the applicable source water monitoring and treatment requirements (described in the referenced portions of paragraph (b) of this section, and in §§ 141.86, and 141.88) by the following deadlines.

(a) ***Deadlines for completing source water treatment steps*** -

(1) ***Step 1:*** A system exceeding the lead or copper action level shall complete lead and copper source water monitoring (§ 141.88(b)) and make a treatment recommendation to the State (§ 141.83(b)(1)) no later than 180 days after the end of the monitoring period during which the lead or copper action level was exceeded.

(2) ***Step 2:*** The State shall make a determination regarding source water treatment (§ 141.83(b)(2)) within 6 months after submission of monitoring results under step 1.

(3) ***Step 3:*** If the State requires installation of source water treatment, the system shall install the treatment (§ 141.83(b)(3)) within 24 months after completion of step 2.

(4) ***Step 4:*** The system shall complete follow-up tap water monitoring (§ 141.86(d)(2) and source water monitoring (§ 141.88(c)) within 36 months after completion of step 2.

(5) ***Step 5:*** The State shall review the system's installation and operation of source water treatment and specify maximum permissible source water levels (§ 141.83(b)(4)) within 6 months after completion of step 4.

(6) ***Step 6:*** The system shall operate in compliance with the State-specified maximum permissible lead and copper source water levels (§ 141.83(b)(4)) and continue source water monitoring (§ 141.88(d)).

(b) ***Description of source water treatment requirements*** -

(1) ***System treatment recommendation.*** Any system which exceeds the lead or copper action level shall recommend in writing to the State the installation and operation of one of the source water treatments listed in paragraph (b)(2) of this section. A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

(2) ***State determination regarding source water treatment.*** The State shall complete an evaluation of the results of all source water samples submitted by the water system to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the State determines that treatment is needed, the State shall either require installation and operation of the source water treatment recommended by the system (if any) or require the installation and operation of another source water treatment from among the following: Ion exchange, reverse osmosis, lime softening or coagulation/filtration. If the State requests additional information to aid in its review, the water system shall provide the information by the date specified by the State in its request. The State shall notify the system in writing of its determination and set forth the basis for its decision.

(3) ***Installation of source water treatment.*** Each system shall properly install and operate the source water treatment designated by the State under paragraph (b)(2) of this section.

(4) ***State review of source water treatment and specification of maximum permissible source water levels.*** The State shall review the source water samples taken by the water system both before and after the system installs source water treatment, and determine whether the system has properly installed and operated the source water treatment designated by the State. Based upon its review, the State shall designate the maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment properly operated and maintained. The State shall notify the system in writing and explain the basis for its decision.

(5) ***Continued operation and maintenance.*** Each water system shall maintain lead and copper levels below the maximum permissible concentrations designated by the State at each sampling point monitored in accordance with § 141.88. The system is out of compliance with this paragraph if the level of lead or copper at any sampling point is greater than the maximum permissible concentration designated by the State.

(6) ***Modification of State treatment decisions.*** Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the source water treatment under paragraph (b)(2) of this section, or maximum permissible lead and copper concentrations for finished water entering the distribution system under paragraph (b)(4) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is

necessary to ensure that the system continues to minimize lead and copper concentrations in source water. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

(7) ***Treatment decisions by EPA in lieu of the State.*** Pursuant to the procedures in § 142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (b) (2), (4), or (6) of this section and issue Federal treatment determinations consistent with the requirements of those paragraphs where the Administrator finds that:

(i) A State has failed to issue a treatment determination by the applicable deadlines contained in § 141.83(a),

(ii) A state has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

(iii) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

*[56 FR 26548, June 7, 1991, as amended at 72 FR 57815, Oct. 10, 2007]*

## § 141.84 Lead service line replacement requirements.

(a) ***Lead service line inventory.*** All water systems must develop an inventory to identify the materials of service lines connected to the public water distribution system. The inventory must meet the following requirements:

(1) All water systems must develop an initial inventory by October 16, 2024, and submit it to the primacy agency in accordance with § 141.90(e).

(2) The inventory must include all service lines connected to the public water distribution system regardless of ownership status (e.g., where service line ownership is shared, the inventory would include both the portion of the service line owned by the water system and the customer-owned portion of the service line).

(3) A water system must use any information on lead and galvanized iron or steel that it has identified pursuant to § 141.42(d) when conducting the inventory of service lines in its distribution system for the initial inventory under paragraph (a)(1) of this section. The water system must also review the sources of information listed in paragraphs (a)(3)(i) through (iv) of this section to identify service line materials for the initial inventory. The water system may use other sources of information not listed in paragraphs (a)(3)(i) through (iv) of this section if approved by the State.

(i) All construction and plumbing codes, permits, and existing records or other documentation which indicates the service line materials used to connect structures to the distribution system.

(ii) All water system records, including distribution system maps and drawings, historical records on each service connection, meter installation records, historical capital improvement or master plans, and standard operating procedures.

(iii) All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system.

(iv) Any resource, information, or identification method provided or required by the State to assess service line materials.

(4) Each service line, or portion of the service line where ownership is split, must be categorized in the following manner:

(i) "Lead" where the service line is made of lead.

(ii) "Galvanized Requiring Replacement" where a galvanized service line is or was at any time downstream of a lead service line or is currently downstream of a "Lead Status Unknown" service line. If the water system is unable to demonstrate that the galvanized service line was never downstream of a lead service line, it must presume there was an upstream lead service line.

(iii) "Non-lead" where the service line is determined through an evidence-based record, method, or technique not to be lead or galvanized requiring replacement. The water system may classify the actual material of the service line (*i.e.,* plastic or copper) as an alternative to classifying it as "Non-lead."

(iv) "Lead Status Unknown" where the service line material is not known to be lead, galvanized requiring replacement, or a non-lead service line, such as where there is no documented evidence supporting material classification. The water system may classify the line as "Unknown" as an alternative to classifying it as "Lead Status Unknown," however, all requirements that apply to "Lead Status Unknown" service lines must also apply to those classified as "Unknown." Water systems may elect to provide more information regarding their unknown lines as long as the inventory clearly distinguishes unknown service lines from those where the material has been verified through records or inspection.

(5) Water systems shall identify and track service line materials in the inventory as they are encountered in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities).

(6) Water systems must update the inventory based on all applicable sources described in paragraphs (a)(3) and (5) of this section and any lead service line replacements or service line material inspections that may have been conducted. The water system may use other sources of information if approved by the State and must use other sources of information provided or required by the State. Water systems must submit the updated inventory to the State in accordance with § 141.90(e). The inventory updates must be reflected in the publicly accessible inventory no less frequently than when required to be submitted to the State.

(i) Water systems whose inventories contain only non-lead service lines are not required to provide inventory updates to the State or to the public. If, in the future, such a water system finds a lead service line within its system, it must prepare an updated inventory in accordance with paragraph (a) of this section on a schedule established by the State.

(ii) [Reserved]

(7) To calculate the number of service line replacements applicable to paragraphs (f) and (g) of this section, the replacement rate must be applied to the sum of known lead and galvanized requiring replacement service lines when the system first exceeds the trigger or action level plus the number of lead status unknown service lines in the beginning of each year of a system's annual goal or mandatory lead service line replacement program.

(i) Each service line shall count only once for purposes of calculating the required number of service line replacements, even where the ownership of the service line is split and both the customer-owned and system-owned portions require replacement.

(ii) The number of service lines requiring replacement must be updated annually to subtract the number of lead status unknown service lines that were discovered to be non-lead and to add the number of non-lead service lines that were discovered to be a lead or galvanized requiring replacement service line.

(iii) Verification of a lead status unknown service line as non-lead in the inventory does not count as a service line replacement.

(8) The service line materials inventory must be publicly accessible.

(i) The inventory must include a location identifier, such as a street address, block, intersection, or landmark, associated with each lead service line and galvanized requiring replacement service line. Water systems may, but are not required to, include a locational identifier for lead status unknown service lines or list the exact address of each service line.

(ii) Water systems serving greater than 50,000 persons must make the publicly accessible inventory available online.

(9) When a water system has no lead, galvanized requiring replacement, or lead status unknown service lines (regardless of ownership) in its inventory, it may comply with the requirements in paragraph (a)(8) of this section using a written statement, in lieu of the inventory, declaring that the distribution system has no lead service lines or galvanized requiring replacement service lines. The statement must include a general description of all applicable sources described in paragraphs (a)(3), (5), and (6) of this section used to make this determination.

(10) Instructions to access the service line inventory (including inventories consisting only of a statement in accordance with paragraph (a)(9) of this section) must be included in Consumer Confidence Report in accordance with § 141.153(d)(4)(xi).

(b) ***Lead service line replacement plan.*** All water systems with one or more lead, galvanized requiring replacement, or lead status unknown service lines in their distribution system must, by October 16, 2024, submit a lead service line replacement plan to the State in accordance with § 141.90(e). The lead service line replacement plan must be sufficiently detailed to ensure a system is able to comply with the lead service line replacement requirements in accordance with this section. The plan must include a description of:

(1) A strategy for determining the composition of lead status unknown service lines in its inventory;

(2) A procedure for conducting full lead service line replacement;

(3) A strategy for informing customers before a full or partial lead service line replacement;

(4) For systems that serve more than 10,000 persons, a lead service line replacement goal rate recommended by the system in the event of a lead trigger level exceedance;

(5) A procedure for customers to flush service lines and premise plumbing of particulate lead;

(6) A lead service line replacement prioritization strategy based on factors including but not limited to the targeting of known lead service lines, lead service line replacement for disadvantaged consumers and populations most sensitive to the effects of lead; and

(7) A funding strategy for conducting lead service line replacements which considers ways to accommodate customers that are unable to pay to replace the portion they own.

(c) ***Operating procedures for replacing lead goosenecks, pigtails, or connectors.***

(1) The water system must replace any lead gooseneck, pigtail, or connector it owns when encountered during planned or unplanned water system infrastructure work.

(2) The water system must offer to replace a customer-owned lead gooseneck, pigtail, or connector; however, the water system is not required to bear the cost of replacement of the customer-owned parts.

(3) The water system is not required to replace a customer-owned lead gooseneck, pigtail, or connector if the customer objects to its replacement.

(4) The replacement of a lead gooseneck, pigtail, or connector does not count for the purposes of meeting the requirements for goal-based or mandatory lead service line replacements, in accordance with paragraphs (f) and (g) of this section, respectively.

(5) Upon replacement of any gooseneck, pigtail, or connector that is attached to a lead service line, the water system must follow risk mitigation procedures specified in § 141.85(f)(2).

(6) The requirements of paragraphs (c)(1), (2), (3), and (5) of this section do not apply if state law includes lead connectors in the definition of lead service lines, prohibits partial lead service line replacements, and requires systems to remove all lead service lines irrespective of a system's 90th percentile lead level.

(d) ***Requirements for conducting lead service line replacement that may result in partial replacement.***

(1) Any water system that plans to partially replace a lead service line (e.g., replace only the portion of a lead service line that it owns) in coordination with planned infrastructure work must provide notice to the owner of the affected service line, or the owner's authorized agent, as well as non-owner resident(s) served by the affected service line at least 45 days prior to the replacement. The notice must explain that the system will replace the portion of the line it owns and offer to replace the portion of the service line not owned by the water system. The water system is not required to bear the cost of replacement of the portion of the affected service line not owned by the water system.

(i) Before the affected service line is returned to service, the water system must provide notification meeting the content requirements of § 141.85(a) explaining that consumers may experience a temporary increase of lead levels in their drinking water due to the replacement, information about the health effects of lead, and actions consumers can take to minimize their exposure to lead in drinking water. In instances where multi-family dwellings are served by the affected service line to be partially replaced, the water system may elect to post the information at a conspicuous location instead of providing individual notification to all residents.

(ii) The water system must provide information about service line flushing in accordance with the procedure developed in paragraph (b)(5) of this section before the affected service line is returned to service.

(iii) The water system must provide the consumer with a pitcher filter or point-of-use device certified by an American National Standards Institute accredited certifier to reduce lead, six months of replacement cartridges, and instructions for use before the affected service line is returned to service. If the affected service line serves more than one residence or non-residential unit (e.g., a multi-unit building), the water system must provide a filter, six months of replacement cartridges and use instructions to every residence in the building.

(iv) The water system must offer to collect a follow up tap sample between three months and six months after completion of any partial replacement of a lead service line. The water system must provide the results of the sample in accordance with § 141.85(d).

(2) Any water system that replaces the portion of the lead service line it owns due to an emergency repair, must provide notice and risk mitigation measures to the persons served by the affected service line in accordance with paragraphs (d)(1)(i) through (iii) of this section before the affected service line is returned to service.

(3) When a water system is notified by the customer that the customer's portion of the lead service line will be replaced, the water system must make a good faith effort to coordinate simultaneous replacement of its portion of the service line. If simultaneous replacement cannot be conducted, the water system must replace its portion as soon as practicable but no later than 45 days from the date the customer replaces its portion of the lead service line. The water system must provide notification and risk mitigation measure in accordance with paragraphs (d)(1)(i) through (iii) of this section. If the water system fails to replace its portion of the lead service line within 45 days from the date the customer replaces the customer's portion of the lead service line, the water system must notify the State within 30 days of failing to meet the deadline in accordance with § 141.90(e) and complete the replacement no later than 180 days of the date the customer replaces its portion.

(4) When a water system is notified or otherwise learns that replacement of a customer-owned lead service line has occurred within the previous six months and left in place a system-owned lead service line, the water system must replace its portion within 45 days from the day of becoming aware of the customer replacement. The water system must provide notification and risk mitigation measures in accordance with paragraphs (d)(1)(i) through (iii) of this section within 24 hours of becoming aware of the customer replacement. If the water system fails to replace its portion of the affected service line within 45 days of becoming aware of the customer replacement, it must notify the State within 30 days of failing to meet the deadline in accordance with § 141.90(e). The water system must complete the replacement no later than 180 days after the date the customer replaces its portion.

(5) When a water system is notified or otherwise learns of a replacement of a customer-owned lead service line which has occurred more than six months in the past, the water system is not required to complete the lead service line replacement of the system-owned portion under this paragraph (d)(5), however the system-owned portion must still be included in the calculation of a lead service line replacement rate under paragraph (a)(7) of this section.

(e) ***Requirements for conducting full lead service line replacement.*** Any water system that conducts a full lead service line replacement must provide notice to the owner of the affected service line, or the owner's authorized agent, as well as non-owner resident(s) served by the affected service line within 24 hours of completion of the replacement. The water system is not required to bear the cost of replacement of the portion of the lead service line not owned by the water system.

(1) The notification must meet the content requirements of § 141.85(a) explaining that consumers may experience a temporary increase of lead levels in their drinking water due to the replacement, information about the health effects of lead, and actions consumers can take to minimize their exposure to lead in drinking water. In instances where multi-family dwellings are served by the lead service line to be replaced, the water system may elect to post the information at a conspicuous location instead of providing individual notification to all residents.

(2) The water system must provide information about service line flushing in accordance with the procedure developed under paragraph (b)(5) of this section before the replaced service line is returned to service.

(3) The water system must provide the consumer with a pitcher filter or point-of-use device certified by an American National Standards Institute accredited certifier to reduce lead, six months of replacement cartridges, and instructions for use before the replaced service line is returned to service. If the lead service line serves more than one residence or non-residential unit (e.g., a multi-unit building), the water system must provide a filter and six months of replacement cartridges and use instructions to every residence in the building.

(4) The water system must offer to the consumer to take a follow up tap sample between three months and six months after completion of any full replacement of a lead service line. The water system must provide the results of the sample to the consumer in accordance with paragraph (d) of this section.

(f) ***Goal-based full lead service line replacement for water systems whose 90th percentile lead level is above the trigger level but at or below the lead action level.*** Water systems that serve more than 10,000 persons whose 90th percentile lead level from tap samples taken pursuant to § 141.86 is above the lead trigger level but at or below the lead action level must conduct goal-based full lead service line replacement at a rate approved by the state.

(1) The water system must calculate the number of full lead service line replacements it must conduct annually in accordance with paragraph (a)(7) of this section.

(2) Replacement of lead service lines must be conducted in accordance with the requirements of paragraph (d) or (e) of this section.

(3) Only full lead service line replacements count towards a water system's annual replacement goal. Partial lead service line replacements do not count towards the goal.

(4) The water system must provide information to customers with lead, galvanized requiring replacement, or lead status unknown service lines as required in § 141.85(g).

(5) Any water system that fails to meet its lead service line replacement goal must:

(i) Conduct public outreach activities pursuant to § 141.85(h) until either the water system meets its replacement goal, or tap sampling shows the 90th percentile of lead is at or below the trigger level for two consecutive one-year monitoring periods.

(ii) Recommence its goal-based lead service line replacement program pursuant to this paragraph (f)(5)(ii) if the 90th percentile lead level anytime thereafter exceeds the lead trigger level but is at or below the lead action level.

(6) The first year of lead service line replacement shall begin on the first day following the end of the tap sampling period in which the lead trigger level was exceeded. If sampling is required annually or less frequently, the end of the tap sampling monitoring period is September 30 of the calendar year in which the sampling occurs. If the State has established an alternate monitoring period, then the end of the monitoring period will be the last day of that period.

(g) ***Mandatory full lead service line replacement for water systems whose 90th percentile lead level exceeds the lead action level.*** Water systems serving more than 10,000 persons that exceed the lead action level in tap samples taken pursuant to § 141.86 must conduct mandatory full lead service line replacement at an average annual rate of at least three percent, calculated on a two-year rolling basis.

(1) The average annual number of full lead service line replacements must be calculated in accordance with paragraph (a)(7) of this section.

(2) Lead service line replacement must be conducted in accordance with the requirements of paragraphs (d) and (e) of this section.

(3) Only full lead service line replacement count towards a water system's mandatory replacement rate of at least three percent annually. Partial lead service line replacements do not count towards the mandatory replacement rate.

(4) Water systems must provide information to customers with lead, galvanized requiring replacement, or lead status unknown service lines consistent with § 141.85(g).

(5) Community water systems serving 10,000 or fewer persons and Non-transient non-community water systems for which the state has approved or designated lead service line replacement as a compliance option must conduct lead service line replacement as described in § 141.93(a)(1). Replacement of lead service lines must be conducted in accordance with the requirements of paragraphs (d) and (e) of this section.

(6) A water system may cease mandatory lead service line replacement when it has conducted a cumulative percentage of replacements greater than or equal to 3%, or other percentage specified in paragraph (g)(9) of this section, of the service lines specified in paragraph (a)(7) of this section multiplied by the number of years that elapsed from when the system most recently began mandatory lead service line replacement and the date on which the system's 90th percentile lead level, in accordance with § 141.80(c)(4), has been calculated to be at or below the lead action level during each of four consecutive six-month tap sampling monitoring periods. If tap samples collected in any such system thereafter exceed the lead action level, the system shall recommence mandatory lead service line replacement at the same two-year rolling average rate, unless the State has designated an alternate replacement rate under paragraph (g)(9) of this section.

(7) The water system may also cease mandatory lead service line replacement if the system has no remaining lead status unknown service lines in its inventory and obtains refusals to conduct full lead service line replacement or non-responses from every remaining customer in its distribution system served by either a full or partial lead service line, or a galvanized requiring replacement service line. For purposes of this paragraph (g)(7) and in accordance with § 141.90(e), a water system must provide documentation to the State of customer refusals including a refusal signed by the customer, documentation of a verbal statement made by the customer refusing replacement, or documentation of no response from the customer after the water system made a minimum of two good faith attempts to reach the customer regarding full lead service line replacement. If the water system's 90th

percentile exceeds the lead action level again, it must contact all customers served by a full or partial lead service line or a galvanized requiring replacement service line with an offer to replace the customer-owned portion. Nothing in this paragraph (g)(7) requires the water system to bear the cost of replacement of the customer-owned lead service line.

(8) The first year of lead service line replacement shall begin on the first day following the end of the tap sampling period in which lead action level was exceeded.

(9) The State shall require a system to replace lead service lines on a shorter schedule than that required by this section, taking into account the number of lead service lines in the system, where the State determines a shorter replacement schedule is feasible. The State shall make this determination in writing and notify the system of its finding within six months after the system is required to begin lead service line replacement under paragraph (g) of this section.

(h) ***Reporting to demonstrate compliance to State.*** To demonstrate compliance with paragraphs (a) through (g) of this section, a system shall report to the State the information specified in § 141.90(e).

*[86 FR 4290, Jan. 15, 2021, as amended at 86 FR 31947, June 16, 2021]*

## § 141.85 Public education and supplemental monitoring and mitigation requirements.

All water systems must deliver a consumer notice of lead tap water monitoring results to persons served by the water system at sites that are sampled, as specified in paragraph (d) of this section. A water system with lead, galvanized requiring replacement, or lead status unknown service lines must deliver public education materials to persons with a lead, galvanized requiring replacement, or lead status unknown service line as specified in paragraphs (e) through (g) of this section. All community water systems must conduct annual outreach to local and State health agencies as outlined in paragraph (i) of this section. A community water system serving more than 10,000 persons that fails to meet its annual lead service line replacement goal as required under § 141.84(f) shall conduct outreach activities as specified in paragraph (h) of this section. A water system that exceeds the lead action level based on tap water samples collected in accordance with § 141.86 shall deliver the public education materials contained in paragraph (a) of this section and in accordance with the requirements in paragraph (b) of this section. Water systems that exceed the lead action level shall offer to sample the tap water of any customer who requests it in accordance with paragraph (c) of this section. All small community water systems and non-transient non-community water systems that elect to implement POU devices under § 141.93 must provide public education materials to inform users how to properly use POU devices in accordance with paragraph (j) of this section.

(a) ***Content of written public education materials*** -

(1) ***Community water systems and non-transient non-community water systems.*** Water systems must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed in paragraphs (a)(1)(i) through (vii) of this section. In addition, language in paragraphs (a)(1)(i), (ii), and (vi) of this section must be included in the materials, exactly as written, except for the text in brackets in paragraphs (a)(1)(i), (ii), and (vi) of this section for which the water system must include system-specific information. Any additional information presented by a water system must be consistent with the information in paragraphs (a)(1) through (vii) of this section and be in plain language that can be understood by the general public. Water systems must submit all written public education materials to the State prior to delivery. The State may require the system to obtain approval of the content of written public materials prior to delivery. Water systems may change the mandatory language in paragraphs (a)(1)(i) and (ii) of this section only with State approval.

(i) IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF WATER SYSTEM] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

(ii) ***Health effects of lead.*** Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems.

(iii) ***Sources of lead.***

(A) Explain what lead is.

(B) Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home/building plumbing materials and service lines that may contain lead.

(C) Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

(iv) Discuss the steps the consumer can take to reduce their exposure to lead in drinking water.

(A) Encourage running the water to flush out the lead.

(B) Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.

(C) Explain that boiling water does not reduce lead levels.

(D) Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.

(E) Suggest that parents have their child's blood tested for lead.

(v) Explain why there are elevated levels of lead in the system's drinking water (if known) and what the water system is doing to reduce the lead levels in homes/buildings in this area.

(vi) For more information, call us at [INSERT YOUR NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT YOUR WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at *http://www.epa.gov/lead* or contact your health care provider.

(vii) ***Information on lead service lines.*** For systems with lead service lines, discuss opportunities to replace lead service lines and explain how to access the service line inventory so the consumer can find out if they have a lead service line. Include information on programs that provide financing solutions to assist property owners with replacement of their portion of a lead service line, and a statement that the water system is required to replace its portion of a lead service line when the property owner notifies them they are replacing their portion of the lead service line.

(2) ***Community water systems.*** In addition to including the elements specified in paragraph (a)(1) of this section, community water systems must:

(i) Tell consumers how to get their water tested.

(ii) Discuss lead in plumbing components and the difference between low lead and lead free.

(b) ***Delivery of public education materials.***

(1) For public water systems serving a large proportion of non-English speaking consumers, as determined by the State, the public education materials must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the public education materials or to request assistance in the appropriate language.

(2) A community water system that exceeds the lead action level on the basis of tap water samples collected in accordance with § 141.86, and that is not already conducting public education tasks under this section, must conduct the public education tasks under this section within 60 days after the end of the tap sampling period in which the exceedance occurred:

(i) Deliver printed materials meeting the content requirements of paragraph (a) of this section to all bill paying customers.

(ii)

(A) Contact customers who are most at risk by delivering education materials that meet the content requirements of paragraph (a) of this section to local public health agencies even if they are not located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users. The water system must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community based organizations serving target populations, which may include organizations outside the service area of the water system. If such lists are provided, systems must deliver education materials that meet the content requirements of paragraph (a) of this section to all organizations on the provided lists.

(B) Contact customers who are most at risk by delivering materials that meet the content requirements of paragraph (a) of this section to the following organizations listed in paragraphs (b)(2)(ii)(B)(*1*) through (*7*) of this section that are located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users:

(*1*) Schools, child care facilities, and school boards.

(*2*) Women, Infants and Children (WIC) and Head Start programs.

(*3*) Public and private hospitals and medical clinics.

(*4*) Pediatricians.

(*5*) Family planning clinics.

(*6*) Local welfare agencies.

(*7*) Obstetricians-Gynecologists and Midwives.

(iii) No less often than quarterly, provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the following statement exactly as written except for the text in brackets for which the water system must include system-specific information: [INSERT NAME OF WATER SYSTEM] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF WATER SYSTEM] [or visit (INSERT YOUR WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the State; specifically, the State may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

(iv) Post material meeting the content requirements of paragraph (a) of this section on the water system's Web site if the system serves a population greater than 100,000.

(v) Submit a press release to newspaper, television and radio stations.

(vi) In addition to paragraphs (b)(2)(i) through (v) of this section, systems must implement at least three activities from one or more categories listed below. The educational content and selection of these activities must be determined in consultation with the State.

(A) Public Service Announcements.

(B) Paid advertisements.

(C) Public Area Information Displays.

(D) E-mails to customers.

(E) Public Meetings.

(F) Household Deliveries.

(G) Targeted Individual Customer Contact.

(H) Direct material distribution to all multi-family homes and institutions.

(I) Other methods approved by the State.

(vii) For systems that are required to conduct monitoring annually or less frequently, the end of the tap sampling period is September 30 of the calendar year in which the sampling occurs, or, if the State has established an alternate tap sampling period, the last day of that period.

(3) As long as a community water system exceeds the action level, it must repeat the activities pursuant to paragraph (b)(2) of this section as described in paragraphs (b)(3)(i) through (iv) of this section.

(i) A community water system shall repeat the tasks contained in paragraphs (b)(2)(i), (ii) and (vi) of this section every 12 months.

(ii) A community water system shall repeat tasks contained in paragraph (b)(2)(iii) of this section with each billing cycle.

(iii) A community water system serving a population greater than 100,000 shall post and retain material on a publicly accessible Web site pursuant to paragraph (b)(2)(iv) of this section.

(iv) The community water system shall repeat the task in paragraph (b)(2)(v) of this section twice every 12 months on a schedule agreed upon with the State. The State can allow activities in paragraph (b)(2) of this section to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the State in advance of the 60-day deadline.

(4) Within 60 days after the end of the tap sampling period in which the exceedance occurred (unless it already is repeating public education tasks pursuant to paragraph (b)(5) of this section), a non-transient non-community water system shall deliver the public education materials specified by paragraph (a) of this section as follows:

(i) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and

(ii) Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the non-transient non-community water system. The State may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

(iii) For systems that are required to conduct monitoring annually or less frequently, the end of the tap sampling period is September 30 of the calendar year in which the sampling occurs, or, if the State has established an alternate tap sampling period, the last day of that period.

(5) A non-transient non-community water system shall repeat the tasks contained in paragraph (b)(4) of this section at least once during each calendar year in which the system exceeds the lead action level. The State can allow activities in (b)(4) of this section to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the State in advance of the 60-day deadline.

(6) A water system may discontinue delivery of public education materials if the system is at or below the lead action level during the most recent six-month tap sampling monitoring period conducted pursuant to § 141.86. Such a system shall recommence public education in accordance with this section if it subsequently exceeds the lead action level during any tap sampling period.

(7) A community water system may apply to the State, in writing (unless the State has waived the requirement for prior State approval), to use only the text specified in paragraph (a)(1) of this section in lieu of the text in paragraphs (a)(1) and (a)(2) of this section and to perform the tasks listed in paragraphs (b)(4) and (b)(5) of this section in lieu of the tasks in paragraphs (b)(2) and (b)(3) of this section if:

(i) The system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

(ii) The system provides water as part of the cost of services provided and does not separately charge for water consumption.

(8) A community water system serving 3,300 or fewer people may limit certain aspects of their public education programs as follows:

(i) With respect to the requirements of paragraph (b)(2)(vi) of this section, a system serving 3,300 or fewer must implement at least one of the activities listed in that paragraph.

(ii) With respect to the requirements of paragraph (b)(2)(ii) of this section, a system serving 3,300 or fewer people may limit the distribution of the public education materials required under that paragraph to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.

(iii) With respect to the requirements of paragraph (b)(2)(v) of this section, the State may waive this requirement for systems serving 3,300 or fewer persons as long as system distributes notices to every household served by the system.

(c) ***Supplemental monitoring and notification of results.*** A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with § 141.86 shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

(d) ***Notification of results*** -

(1) ***Reporting requirement.*** All water systems must provide a notice of the individual tap results from lead tap water monitoring carried out under the requirements of § 141.86 to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the building where the tap was sampled).

(2) ***Timing of notification.*** A water system must provide the consumer notice as soon as practicable but no later than the following timeframes:

(i) For individual samples that do not exceed 15 µg/L of lead, no later than 30 days after the water system learns of the tap monitoring results.

(ii) For individual samples that exceed 15 µg/L of lead, as soon as practicable but no later than 3 calendar days after the water system learns of the tap monitoring results. Water systems that choose to mail the notification must assure those letters are postmarked within three days.

(3) ***Content.*** The consumer notice must include the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, list steps consumers can take to reduce exposure to lead in drinking water and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from § 141.153(c).

(4) ***Delivery.***

(i) For lead tap sample results that do not exceed 15 µg/L, the water systems must provide consumer notice to persons served at the tap that was sampled, by mail or by another method approved by the State. For example, upon approval by the State, a non-transient non-community water system could post the results on a bulletin board in the facility to allow users to review the information.

(ii) For lead tap sample results that exceed 15 µg/L, the water systems must provide consumer notice to persons served by the tap that was sampled; such notice must be provided electronically or by phone, hand delivery, by mail, or another method approved by the State.

(e) ***Notification of known or potential service line containing lead*** -

(1) ***Notification requirements.*** All water systems with lead, galvanized requiring replacement, or lead status unknown service lines in their inventory pursuant to § 141.84(a) must inform all persons served by the water system at the service connection with a lead, galvanized requiring replacement, or lead status unknown service line.

(2) ***Timing of notification.*** A water system must provide the initial notification within 30 days of completion of the lead service line inventory required under § 141.84 and repeat the notification on an annual basis until the entire service connection is no longer a lead, galvanized requiring replacement, or lead status unknown service line. For new customers, water systems shall also provide the notice at the time of service initiation.

(3) ***Content*** -

(i) ***Persons served by a confirmed lead service line.*** The notice must include a statement that the person's service line is lead, an explanation of the health effects of lead that meets the requirements of paragraph (a)(1)(ii) of this section, steps persons at the service connection can take to reduce exposure to lead in drinking water, information about opportunities to replace lead service lines as well as programs that provide financing solutions to assist property owners with replacement of their portion of a lead service line, and a statement that the water system is required to replace its portion of a lead service line when the property owner notifies them they are replacing their portion of the lead service line.

(ii) ***Persons served by a galvanized requiring replacement service line.*** The notice must include a statement that the person's service line is galvanized requiring replacement, an explanation of the health effects of lead, steps persons at the service connection can take to reduce exposure to lead in drinking water, and information about opportunities for replacement of the service line.

(iii) ***Persons served by a lead status unknown service line.*** The notice must include a statement that the person's service line material is unknown but may be lead, an explanation of the health effects of lead that meets the requirements of paragraph (a)(1)(ii) of this section, steps persons at the service connection can take to reduce exposure to lead in drinking water, and information about opportunities to verify the material of the service line.

(4) ***Delivery.*** The notice must be provided to persons served by the water system at the service connection with a lead, galvanized requiring replacement, or lead status unknown service line, by mail or by another method approved by the State.

(f) ***Notification due to a disturbance to a known or potential service line containing lead.***

(1) Water systems that cause disturbance to a lead, galvanized requiring replacement, or lead status unknown service line that results in the water to an individual service line being shut off or bypassed, such as operating a valve on a service line or meter setter, and without conducting a partial or full lead service line replacement, must provide the persons served by the water system at the service connection with information about the potential for elevated lead levels in drinking water as a result of the disturbance as well as instructions for a flushing procedure to remove particulate lead. The water system must comply with the requirements in this paragraph (f)(1) before the affected service line is returned to service.

(2) If the disturbance of a lead, galvanized requiring replacement, or lead status unknown service line results from the replacement of an inline water meter, a water meter setter, or gooseneck, pigtail, or connector, the water system must provide the person served by the water system at the service connection with information about the potential for elevated lead levels in drinking water as a result of the disturbance, public education materials that meet the content requirements in paragraph (a) of this section, a pitcher filter or point-of-use device certified by an American National Standards Institute accredited certifier to reduce lead, instructions to use the filter, and six months of filter replacement cartridges. The water system must comply with the requirements of this paragraph (f)(2) before the affected service line is returned to service.

(3) A water system that conducts a partial or full lead service line replacement must follow procedures in accordance with the requirements in § 141.84(d)(1)(i) through (iv) and (e)(1)(i) through (iv), respectively.

(g) ***Information for persons served by known or potential service lines containing lead when a system exceeds the lead trigger level*** -

(1) ***Content.*** All water systems with lead service lines that exceed the lead trigger level of 10 µg/L must provide persons served by the water system at the service connection with a lead, galvanized requiring replacement, or lead status unknown service line information regarding the water system's lead service line replacement program and opportunities for replacement of the lead service line.

(2) ***Timing.*** Waters systems must send notification within 30 days of the end of the tap sampling period in which the trigger level exceedance occurred. Water systems must repeat the notification annually until the results of sampling conducted under § 141.86 are at or below the lead trigger level.

(3) ***Delivery.*** The notice must be provided to persons served at the service connection with a lead, galvanized requiring replacement, or lead status unknown service line, by mail or by another method approved by the State.

(h) ***Outreach activities for failure to meet the lead service line replacement goal.***

(1) In the first year after a community water system that serves more than 10,000 persons does not meet its annual lead service line replacement goal as required under § 141.84(f), it must conduct one outreach activity from the following list in the following year until the water system meets its replacement goal or until tap sampling shows that the 90th percentile for lead is at or below the trigger level of 10 µg/L for two consecutive tap sampling monitoring periods:

(i) Send certified mail to customers with a lead or galvanized requiring replacement service line to inform them about the water system's goal-based lead service line replacement program and opportunities for replacement of the service line.

(ii) Conduct a townhall meeting.

(iii) Participate in a community event to provide information about its lead service line replacement program and distribute public education materials that meet the content requirements in paragraph (a) of this section.

(iv) Contact customers by phone, text message, email, or door hanger.

(v) Use another method approved by the State to discuss the lead service line replacement program and opportunities for lead service line replacement.

(2) After the first year following a trigger level exceedance, any water system that thereafter continues to fail to meet its lead service line replacement goal must conduct one activity from paragraph (h)(1) of this section and two additional outreach activities per year from the following list:

(i) Conduct social media campaign.

(ii) Conduct outreach via newspaper, television, or radio.

(iii) Contact organizations representing plumbers and contractors by mail to provide information about lead in drinking water including health effects, sources of lead, and the importance of using lead free plumbing materials.

(iv) Visit targeted customers to discuss the lead service line replacement program and opportunities for replacement.

(3) The water system may cease outreach activities when tap sampling shows that the 90th percentile for lead is at or below the trigger level of 10 µg/L for two consecutive tap sampling monitoring periods or when all customer-side lead or galvanized requiring replacement service line owners refuse to participate in the lead service line replacement program. For purposes of this paragraph (h)(3), a refusal includes a signed statement by the customer refusing lead service line replacement, or documentation by the water system of a verbal refusal or of no response after two good faith attempts to reach the customer.

(i) ***Public education to local and State health agencies*** -

(1) ***Find-and-fix results.*** All community water systems must provide information to local and State health agencies about find-and-fix activities conducted in accordance with § 141.82(j) including the location of the tap sample site that exceeded 15 µg/L, the result of the initial tap sample, the result of the follow up tap sample, the result of water quality parameter monitoring, and any distribution system management actions or corrosion control treatment adjustments made.

(2) ***Timing and content.*** Community water systems must annually send copies of the public education materials provided under paragraph (a) of this section, and of paragraph (h)(1) of this section for actions conducted in the previous calendar year no later than July 1 of the following year.

(3) ***Delivery.*** Community water systems shall send public education materials and find-and-fix information to local and State health agencies by mail or by another method approved by the State.

(j) ***Public education requirements for small water system compliance flexibility POU devices*** -

(1) ***Content.*** All small community water systems and non-transient non-community water systems that elect to implement POU devices under § 141.93 must provide public education materials to inform users how to properly use POU devices to maximize the units' effectiveness in reducing lead levels in drinking water.

(2) ***Timing.*** Water systems shall provide the public education materials at the time of POU device delivery.

(3) ***Delivery.*** Water systems shall provide the public education materials in person, by mail, or by another method approved by the State, to persons at locations where the system has delivered POU devices.

*[72 FR 57815, Oct. 10, 2007, as amended at 86 FR 4294, Jan. 15, 2021]*

## § 141.86 Monitoring requirements for lead and copper in tap water.

(a) ***Sample site location.***

(1) By the applicable date for commencement of monitoring under paragraph (d)(1) of this section, each water system shall identify a pool of targeted sampling sites based on the service line inventory conducted in accordance with § 141.84(a), that meet the requirements of this section, and which is sufficiently large enough to ensure that the water system can collect the number of lead and copper tap samples required in paragraph (c) of this section. Sampling sites may not include sites with installed point-of-entry (POE) treatment devices and taps used at sampling sites may not have point-of-use (POU) devices designed to remove inorganic contaminants, except for water systems monitoring under § 141.93(a)(3)(iv) and water systems using these devices for the primary drinking water tap to meet other primary and secondary drinking water standards and all service connections have POEs or POUs to provide localized treatment for compliance with the other drinking water standards. Lead and copper sampling results for systems monitoring under § 141.93(a)(3)(iv) may not be used for the purposes of meeting the criteria for reduced monitoring specified in paragraph (d)(4) of this section.

(2) A water system must use the information on lead, copper, and galvanized iron or steel that is required to be identified under § 141.42(d) when conducting a materials evaluation and the information on lead service lines that is required to be collected under § 141.84(a) to identify potential lead service line sampling sites.

(3) The sampling sites for a community water system's sampling pool must consist of single-family structures that are served by a lead service line ("Tier 1 sampling sites"). When multiple-family residences comprise at least 20 percent of the structures served by the water system, the system may include these types of structures in its Tier 1 sampling pool, if served by a lead service line. Sites with lead status unknown service lines must not be used as Tier 1 sampling sites.

(4) A community water system with insufficient Tier 1 sampling sites must complete its sampling pool with "Tier 2 sampling sites," consisting of buildings, including multiple-family residences that are served by a lead service line. Sites with lead status unknown service lines must not be used as Tier 2 sampling sites.

(5) A community water system with insufficient Tier 1 and Tier 2 sampling sites must complete its sampling pool with "Tier 3 sampling sites," consisting of 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. Sites with lead status unknown service lines must not be used as Tier 3 sampling sites.

(6) A community water system with insufficient Tier 1, Tier 2, and Tier 3 sampling sites must complete its sampling pool with "Tier 4 sampling sites," consisting of single-family structures that contain copper pipes with lead solder installed before the effective date of the State's applicable lead ban. Sites with lead status unknown service lines must not be used as Tier 4 sampling sites.

(7) A community water system with insufficient Tier 1, Tier 2, Tier 3, and Tier 4 sampling sites must complete its sampling pool with "Tier 5 sampling sites," consisting of single-family structures or buildings, including multiple family residences that are representative of sites throughout the distribution system. For the purpose of this paragraph (a)(7), a 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. Water systems may use non-residential buildings that are representative of sites throughout the distribution system if and only if there are an insufficient number of single-family or multiple family residential Tier 5 sites available.

(8) The sampling sites selected for a non-transient non-community water system must consist of sites that are served by a lead service line ("Tier 1 sampling sites"). Sites with lead status unknown service lines must not be used as Tier 1 sampling sites.

(9) A non-transient non-community water system with insufficient Tier 1 sites complete its sampling pool with "Tier 3 sampling sites," consisting of sampling sites 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. Sites with lead status unknown service lines must not be used as Tier 3 sampling sites.

(10) A non-transient non-community water system with insufficient Tier 1 and Tier 3 sampling sites must complete its sampling pool with "Tier 5 sampling sites," consisting of sampling sites that are representative of sites throughout the distribution system. For the purpose of this paragraph (a)(10), a 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.

(11) A water system whose distribution system contains lead service lines must collect all samples for monitoring under this section from sites served by a lead service line. A water system that cannot identify a 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 under paragraphs (a)(5) through (7) or paragraphs (a)(9) through (10) of this section.

(b) ***Sample collection methods.***

(1) All tap samples for lead and copper collected in accordance with this subpart, with the exception of fifth liter samples collected under paragraph (b)(3) of this section, and samples collected under paragraphs (b)(5) and (h) of this section, must be first draw samples. The first draw sample shall be analyzed for lead and copper in tap sampling periods where both contaminants are required to be monitored. In tap sampling periods where only lead is required to be monitored, the first draw sample may be analyzed for lead only.

(2) Each first draw tap sample for lead and copper must be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours. Bottles used to collect first draw samples must be wide-mouth one-liter sample bottles. First draw samples from residential housing must be collected from the cold-water kitchen or bathroom sink tap. First draw samples from a nonresidential building must be one liter in volume and collected at a tap from which water is typically drawn for consumption. State-approved non-first-draw samples collected in lieu of first draw samples pursuant to paragraph (b)(5) of this section must be one liter in volume and shall be collected at an interior tap from which water is typically drawn for First draw samples may be collected by the system or the system may allow residents to collect first draw samples after instructing the residents of the sampling procedures specified in this paragraph (b)(2). Sampling instructions provided to residents must not include instructions for aerator removal and cleaning or flushing of taps prior to the start of the minimum six-hour stagnation period. To avoid problems of residents handling nitric acid, acidification of first draw samples may be done up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

(3)

(i) All tap samples for copper collected in at sites with a lead service line shall be the first draw sample collected using the procedure listed in this paragraph (b)(3). Tap samples for copper are required to be collected and analyzed only in monitoring periods for which copper monitoring is required.

(ii) Systems must collect tap water in five consecutively numbered one-liter sample bottles after the water has stood motionless in the plumbing of each sampling site for at least six hours without flushing the tap prior to sample collection. Systems must analyze first draw samples for copper, when applicable, and fifth liter samples for lead. Bottles used to collect these samples must be wide-mouth one-liter sample bottles. Systems must collect first draw samples in the first sample bottle with each subsequently numbered bottle being filled until the final bottle is filled with the water running constantly during sample collection. Fifth liter sample is the final sample collected in this sequence. System must collect first draw and fifth liter samples from residential housing from the cold-water kitchen or bathroom sink tap First draw and fifth liter samples from a nonresidential building must be one liter in volume and collected at an interior cold water tap from which water is typically drawn for consumption. First draw and fifth liter samples may be collected by the system or the system may allow residents to collect first draw samples and fifth liter samples after instructing the residents on the sampling procedures specified in this paragraph (b)(3)(ii). Sampling instructions provided to customers must not direct the customer to remove the aerator or clean or flush the taps prior to the start of the minimum six-hour stagnation period. To avoid problems of residents handling nitric acid, the system may acidify first draw samples up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

(4) A water system must collect each first draw tap sample from the same sampling site from which it collected the previous sample. A water system must collect each fifth liter sample from the same sampling site from which it collected the previous sample. If, for reasons beyond the control of the water system, the water system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

(5) A non-transient, non-community water system, or a community water system that meets the criteria of § 141.85(b)(7), that does not have enough taps that can supply first draw samples or fifth liter samples meeting the six-hour minimum stagnation time, as defined in § 141.2, may apply to the State in writing to substitute non-first draw, first-draw, or fifth liter samples that do not meet the six-hour minimum stagnation time. Such systems must collect as many first draw or fifth liter samples from interior taps typically

used for consumption, as possible and must identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The State has the discretion to waive the requirement for prior State approval of sites not meeting the six-hour stagnation time either through State regulation or written notification to the system.

(c) ***Number of samples.*** Water systems shall collect at least one sample during each monitoring period specified in paragraph (d) of this section from the number of sites listed in the first column ("standard monitoring") of the table in this paragraph. A system conducting reduced monitoring under paragraph (d)(4) of this section shall collect at least one sample from the number of sites specified in the second column ("reduced monitoring") of the table in this paragraph during each monitoring period specified in paragraph (d)(4) of this section. Such reduced monitoring sites shall be representative of the sites required for standard monitoring. A public water system that has fewer than five drinking water taps, that can be used for human consumption meeting the sample site criteria of paragraph (a) of this section to reach the required number of sample sites listed in paragraph (c) of this section, must collect at least one sample from each tap and then must collect additional samples from those taps on different days during the monitoring period to meet the required number of sites. Alternatively the State may allow these public water systems to collect a number of samples less than the number of sites specified in paragraph (c) of this section, provided that 100 percent of all taps that can be used for human consumption are sampled. The State must approve this reduction of the minimum number of samples in writing based on a request from the system or onsite verification by the State. States may specify sampling locations when a system is conducting reduced monitoring. The table is as follows:

| 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 |

(d) ***Timing of monitoring*** -

(1) ***Standard monitoring.*** Standard monitoring is a six-month tap sampling monitoring period that begins on January 1 or July 1 of the year in which the water system is monitoring at the standard number of sites in accordance to paragraph (c) of this section.

(i) All water systems with lead service lines, including those deemed optimized under § 141.81(b)(3), and systems that did not conduct monitoring that meets all requirements of this section (e.g., sites selected in accordance with paragraph (a) of this section, samples collected in accordance with paragraph (b) of this section, etc.) between January 15, 2021, and October 16, 2024, must begin the first standard monitoring period on January 1 or July 1 in the year following October 16, 2024, whichever is sooner. Upon completion of this monitoring, systems must monitor in accordance with paragraph (d)(1)(ii) of this section.

(ii) Systems that conducted monitoring that meets all requirements of this section (e.g., sites selected in accordance with paragraph (a) of this section, samples collected in accordance with paragraph (b) of this section, etc.) between January 15, 2021, and October 16, 2024, and systems that have completed monitoring under paragraph (d)(1)(i) of this section, must continue monitoring as follows:

(A) Systems that do not meet the criteria under paragraph (d)(4) of the section must conduct standard monitoring.

(B) Systems that meet the criteria under paragraph (d)(4) of this section must continue to monitor in accordance with the criteria in paragraph (d)(4).

(C) Any system monitoring at a reduced frequency in accordance with paragraph (d)(4) of this section that exceeds an action level must resume standard monitoring beginning January 1 of the calendar year following the tap sampling monitoring period in which the system exceeded the action level. Any such system must also monitor in accordance with § 141.87(b), (c), or (d) as applicable.

(D) Any system monitoring at a reduced frequency that exceeds the lead trigger level but meets the copper action level must not monitor any less frequently than annually and must collect samples from the standard number of sites as established in paragraph (c) of this section. This monitoring must begin the calendar year following the tap sampling monitoring period in which the system exceeded the action level. Any such system must also monitor in accordance with § 141.87(b), (c), or (d) as applicable.

(E) Any system that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State under § 141.82(f) for more than nine days in any monitoring period specified in § 141.87 must conduct standard tap water monitoring and must resume sampling for water quality parameters in accordance with § 141.87(d). This standard monitoring must begin no later than the 6-month period beginning January 1 of the calendar year following the water quality parameter excursion.

(F) Any water system that becomes a *large water system* without corrosion control treatment or any large water system without corrosion control treatment whose lead 90th percentile exceeds the lead practical quantitation level must conduct standard monitoring for at least two consecutive 6-month tap sampling monitoring periods and then must continue monitoring in accordance with this paragraph (d)(1)(ii)(F).

(2) ***Monitoring after installation of initial or re-optimized corrosion control treatment, installation of source water treatment and addition of new source or change in treatment.***

(i) Any water system that installs or re-optimizes corrosion control treatment, as a result of exceeding the lead or copper action level, must monitor for lead and copper every six months and comply with previously designated water quality parameter values, where applicable, until the State specifies new water quality parameter values for optimal corrosion control.

(ii) Any water system that re-optimizes corrosion control treatment as a result of exceeding the lead trigger level but has not exceeded the lead or copper action level must monitor annually for lead at the standard number of sites listed in paragraph (c) of this section. Samples shall be analyzed for copper on a triennial basis. Small and medium-size systems that do not exceed the lead trigger level in three annual monitoring periods may reduce lead monitoring in accordance with paragraph (d)(4) of this section.

(iii) Any water system that installs source water treatment pursuant to § 141.83(a)(3) must monitor every six months until the system at or below lead and copper action levels for two consecutive six-month monitoring periods. Systems that do not exceed the lead or copper action level for two consecutive 6-month monitoring periods may reduce monitoring in accordance with paragraph (d)(4) of this section.

(iv) If a water system has notified the State in writing in accordance with § 141.90(a)(3) of an upcoming addition of a new source or long term change in treatment, the water system shall monitor every six months at the standard number of sites listed under paragraph (c) of this section until the system is at or below the lead and copper action levels for two consecutive six-month monitoring periods, unless the State determines that the addition of the new source or long term change in treatment is not significant and, therefore, does not warrant more frequent monitoring. Systems that do not exceed the lead and copper action levels, and/or the lead trigger level for two consecutive six-month monitoring periods may reduce monitoring in accordance with paragraph (d)(4) of this section.

(3) ***Monitoring after State specifies water quality parameter values for optimal corrosion control treatment.***

(i) After the State specifies the values for water quality control parameters under § 141.82(f), the system must conduct standard six-month monitoring for two consecutive six-month tap sampling monitoring periods. Systems may then reduce monitoring in accordance with paragraph (d)(4) of this section as applicable, following a State determination that reduced monitoring is approved.

(ii) Systems required to complete the re-optimization steps in § 141.81(d) due to the exceedance of the lead trigger level that do not exceed the lead and copper action levels must monitor for two consecutive 6-month tap sampling monitoring periods. Systems may then reduce monitoring in accordance with paragraph (d)(4) of this section as applicable following a State determination that reduced monitoring is approved.

(4) ***Reduced monitoring based on 90th percentile levels.*** Reduced monitoring refers to an annual or triennial tap sampling monitoring period. The reduced monitoring frequency is based on the 90th percentile value for the water system.

(i) A water system that meets the criteria for reduced monitoring under paragraph (d)(4) of this section must collect these samples from sampling sites identified in paragraph (a) of this section. Systems monitoring annually or less frequently must conduct the lead and copper tap sampling during the months of June, July, August, or September unless the State has approved a different sampling period in accordance with paragraph (d)(4)(i)(A) of this section.

(A) The State at its discretion may approve a different tap sampling period for conducting the lead and copper tap sampling for systems collecting samples at a reduced frequency. Such a period must be no longer than four consecutive months, within one calendar year, and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a non-transient non-community water system that does not operate during the months of June through September and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the State must designate a period that represents normal operation for the system. This monitoring must begin during the period approved or designated by the State in the calendar year immediately following the end of the second 6-month monitoring period for systems initiating annual monitoring and during the 3-year period following the end of the third consecutive year of annual monitoring for systems initiating triennial monitoring.

(B) Systems monitoring annually that have been collecting samples during the months of June through September and that receive State approval to alter their tap sampling monitoring period under paragraph (d)(4)(i)(A) of this section must collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling. Systems monitoring triennially that have been collecting samples during the month of June through September and receive State approval to alter their sampling collection period as per paragraph (d)(4)(i)(A) of this section must collect their next round of samples during a time period that ends no later than 45 months after the previous tap sampling period. Subsequent monitoring must be conducted annually or triennially, as required by this section.

(C) Small systems with waivers granted pursuant to paragraph (g) of this section that have been collecting samples during the months of June through September and receive State approval to alter their tap sampling period as per paragraph (d)(4)(i)(A) of this section must collect their next round of samples before the end of the 9-year period.

(ii) Any system that meets the lead trigger level and the copper action levels during two consecutive 6-month tap sampling monitoring periods may reduce the monitoring frequency to annual monitoring and must sample at the standard number of sampling sites for lead and the reduced number of sites for copper as specified in paragraph (c) of this section. Systems operating *OCCT* must also have maintained the range of OWQPs set by the State in accordance with § 141.82(f) for the same period and receive a written determination from the State approving annual monitoring based on the State's review of monitoring, treatment, and other relevant information submitted by the system as required by § 141.90. This sampling must begin no later than the calendar year immediately following the last calendar year in which the system sampled.

(iii) Any water system that exceeds the lead trigger level but not the lead and copper action levels during two consecutive 6-month tap sampling monitoring periods must monitor no less frequently than annually at the standard number of sampling sites for lead and copper specified in paragraph (c) of this section. Systems operating OCCT must also have maintained the range of OWQPs set by the State in accordance with § 141.82(f) for the same period of 6-month monitoring and receive a written determination from the State approving annual monitoring based on the State's review of monitoring, treatment, and other relevant information submitted by the system as required by § 141.90. This sampling must begin no later than the calendar year immediately following the last calendar year in which the system sampled.

(iv) Any water system that exceeds the lead trigger level but not the lead and copper action levels during three consecutive years of monitoring may reduce the tap sampling monitoring period for copper to once every three years; however, the system may not reduce the tap sampling monitoring period for lead. Systems operating OCCT must also maintain the range of OWQPs set by the State in accordance with § 141.82(f) and receive a written determination from the State approving triennial monitoring based on the State's review of monitoring, treatment, and other relevant information submitted by the system as required by § 141.90. This sampling must begin no later than the third calendar year immediately following the last calendar year in which the system sampled.

(v) Any small or medium-sized system that does not exceed the lead trigger level and the copper action level during three consecutive years of monitoring (standard monitoring completed during both six-month periods of a calendar year shall be considered 1 year of monitoring) may sample at the reduced number of sites for lead and copper in accordance with paragraph (c) of this section and reduce the monitoring frequency to triennial monitoring. Systems operating OCCT must also have maintained the range of OWQPs set by the State in accordance with § 141.82(f) for the same three-year period and receive a written determination from the State approving triennial monitoring based on the State's review of monitoring, treatment, and other relevant information submitted by the system as required by § 141.90. This sampling must begin no later than three calendar years after the last calendar year in which the system sampled.

(vi) Any water system that demonstrates for two consecutive 6-month monitoring periods that its 90th percentile lead level, calculated under § 141.80(c)(4), is less than or equal to 0.005 mg/L and the 90th percentile copper level, calculated under § 141.80(c)(4), is less than or equal to 0.65 mg/L may sample at the reduced number of sites for lead and copper in accordance with paragraph (c) of this section and reduce the frequency of monitoring to triennial monitoring. For water systems with corrosion control treatment, the system must maintain the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under § 141.82(f) to qualify for reduced monitoring pursuant to this paragraph (d)(4)(vi).

(e) ***Additional monitoring by systems.*** The results of any monitoring conducted in addition to the minimum requirements of this section (such as customer-requested sampling) shall be considered by the water system and the State in making any determinations (*i.e.,* calculating the 90th percentile lead or copper level) under this subpart. Lead service line water systems that are unable to collect the minimum number of samples from Tier 1 or Tier 2 sites shall calculate the 90th percentile using data from all the lead service lines sites and the highest lead and copper values from lower tier sites to meet the specified minimum number of samples. Systems must submit data from additional tier 3, 4 or 5 sites to the State but may not use these results in the 90th percentile calculation. Water systems must include customer-requested samples from known lead service line sites in the 90th percentile calculation if the samples meet the requirements of this section.

(f) ***Invalidation of lead and copper tap samples used in the calculation of the 90th percentile.*** A sample invalidated under this paragraph (f) does not count toward determining lead or copper 90th percentile levels under § 141.80(c)(4) or toward meeting the minimum monitoring requirements of paragraph (c) of this section.

(1) The State may invalidate a lead or copper tap water sample at least if one of the following conditions is met.

(i) The laboratory establishes that improper sample analysis caused erroneous results.

(ii) The State determines that the sample was taken from a site that did not meet the site selection criteria of this section.

(iii) The sample container was damaged in transit.

(iv) There is substantial reason to believe that the sample was subject to tampering.

(2) The system must report the results of all samples to the State and all supporting documentation for samples the system believes should be invalidated.

(3) To invalidate a sample under paragraph (f)(1) of this section, the decision and the rationale for the decision must be documented in writing. States may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

(4) The water system must collect replacement samples for any samples invalidated under this section if, after the invalidation of one or more samples, the system has too few samples to meet the minimum requirements of paragraph (c) of this section. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the State invalidates the sample

or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(g) ***Monitoring waivers for systems serving 3,300 or fewer persons.*** Any water system serving 3,300 or fewer persons that meets the criteria of this paragraph (g) may apply to the State to reduce the frequency of monitoring for lead and copper under this section to once every nine years (*i.e.,* a "full waiver") if it meets all of the materials criteria specified in paragraph (g)(1) of this section and all of the monitoring criteria specified in paragraph (g)(2) of this section. If State regulations permit, any water system serving 3,300 or fewer persons that meets the criteria in paragraphs (g)(1) and (2) of this section only for lead, or only for copper, may apply to the State for a waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (*i.e.,* a "partial waiver").

(1) ***Materials criteria.*** The system must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials and/or copper-containing materials, as those terms are defined in this paragraph, as follows:

(i) ***Lead.*** To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (*i.e.,* a "lead waiver"), the water system must provide certification and supporting documentation to the State that the system is free of all lead-containing materials, as follows:

(A) It contains no plastic pipes which contain lead plasticizers, or plastic service lines which contain lead plasticizers; and

(B) It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of any standard established pursuant to 42 U.S.C. 300g-6(e) (SDWA section 1417(e)).

(ii) ***Copper.*** To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (*i.e.,* a "copper waiver"), the water system must provide certification and supporting documentation to the State that the system contains no copper pipes or copper service lines.

(2) ***Monitoring criteria for waiver issuance.*** The system must have completed at least one 6-month round of standard tap water monitoring for lead and copper at sites approved by the State and from the number of sites required by paragraph (c) of this section and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing and/or copper-containing materials, as appropriate, meet the following criteria.

(i) ***Lead levels.*** To qualify for a full waiver, or a lead waiver, the system must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.

(ii) ***Copper levels.*** To qualify for a full waiver, or a copper waiver, the system must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.

(3) ***State approval of waiver application.*** The State shall notify the system of its waiver determination, in writing, setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the State may require the system to perform specific activities (e.g., limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small system must continue monitoring for lead and copper at the tap as required by paragraphs (d)(1) through (d)(4) of this section, as appropriate, until it receives written notification from the State that the waiver has been approved.

(4) ***Monitoring frequency for systems with waivers.***

(i) A system with a full waiver must conduct tap water monitoring for lead and copper in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites identified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section for both lead and copper to the State along with the monitoring results. Samples collected every nine years shall be collected no later than every ninth calendar year.

(ii) A system with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites specified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section pertaining to the waived contaminant along with the monitoring results. Such a system also must continue to monitor for the non-waived contaminant in accordance with requirements of paragraph (d)(1) through (d)(4) of this section, as appropriate.

(iii) Any water system with a full or partial waiver shall notify the State in writing in accordance with § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source, as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State has the authority to require the system to add or modify waiver conditions (e.g., require recertification that the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

(iv) If a system with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate, (e.g., as a result of new construction or repairs), the system shall notify the State in writing no later than 60 days after becoming aware of such a change.

(5) ***Continued eligibility.*** If the system continues to satisfy the requirements of paragraph (g)(4) of this section, the waiver will be renewed automatically, unless any of the conditions listed in paragraph (g)(5)(i) through (g)(5)(iii) of this section occurs. A system whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring

criteria of paragraphs (g)(1) and (g)(2) of this section.

(i) A system with a full waiver or a lead waiver no longer satisfies the materials criteria of paragraph (g)(1)(i) of this section or has a 90th percentile lead level greater than 0.005 mg/L.

(ii) A system with a full waiver or a copper waiver no longer satisfies the materials criteria of paragraph (g)(1)(ii) of this section or has a 90th percentile copper level greater than 0.65 mg/L.

(iii) The State notifies the system, in writing, that the waiver has been revoked, setting forth the basis of its decision.

(6) ***Requirements following waiver revocation.*** A system whose full or partial waiver has been revoked by the State is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

(i) If the system exceeds the lead and/or copper action level, the system must implement corrosion control treatment in accordance with the deadlines specified in § 141.81(e), and any other applicable requirements of this subpart.

(ii) If the system meets both the lead and the copper action level, the system must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in paragraph (c) of this section.

(7) ***Pre-existing waivers.*** Small system waivers approved by the State in writing prior to April 11, 2000 shall remain in effect under the following conditions:

(i) If the system has demonstrated that it is both free of lead-containing and copper-containing materials, as required by paragraph (g)(1) of this section and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of paragraph (g)(2) of this section, the waiver remains in effect so long as the system continues to meet the waiver eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the last time the system has monitored for lead and copper at the tap.

(ii) If the system has met the materials criteria of paragraph (g)(1) of this section but has not met the monitoring criteria of paragraph (g)(2) of this section, the system shall conduct a round of monitoring for lead and copper at the tap demonstrating that it meets the criteria of paragraph (g)(2) of this section no later than September 30, 2000. Thereafter, the waiver shall remain in effect as long as the system meets the continued eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the round of monitoring conducted pursuant to paragraph (g)(2) of this section.

(h) ***Follow-up samples for "find-and-fix" under § 141.82(j).*** Systems shall collect a follow-up sample at any site that exceeds the action level within 30 days of receiving the sample results. These follow-up samples may use different sample volumes or different sample collection procedures to assess the source of elevated lead. Systems shall submit samples collected under this section to the State but shall not include such samples in the 90th percentile calculation.

(i) ***Public availability of tap monitoring results used in the 90th percentile calculation.*** All water systems must make available to the public the results of compliance tap water monitoring data, including data used in the 90th percentile calculation under § 141.80(c)(4), within 60 days of the end of the applicable tap sampling period. Nothing in this section requires water systems to make publicly available the addresses of the sites where the tap samples were collected. Large systems shall make available the monitoring results in a digital format. Small and medium-size systems shall make available the monitoring results in either a written or digital format. Water systems shall retain tap sampling monitoring data in accordance to recordkeeping requirements under § 141.91.

*[56 FR 26548, June 7, 1991; 56 FR 32113, July 15, 1991; 57 FR 28788, June 29, 1992, as amended at 65 FR 2007, Jan. 12, 2000; 72 FR 57817, Oct. 10, 2007; 86 FR 4296, Jan. 15, 2021; 86 FR 31947, June 16, 2021]*

## § 141.87 Monitoring requirements for water quality parameters.

All large water systems, and all small- and medium-size water systems that exceed the lead or copper action level, and all small- and medium-size water systems with corrosion control treatment that exceed the lead trigger level must monitor water quality parameters in addition to lead and copper in accordance with this section.

(a) ***General requirements*** -

(1) ***Sample collection methods.***

(i) Tap samples must be representative of water quality throughout the distribution system, taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for lead and copper sampling under § 141.86(a). Sites selected for tap samples under this section must be included in the site sample plan specified under § 141.86(a)(1). The site sample plan must be updated prior to changes to the sampling locations. [Note: Systems may find it convenient to conduct tap sampling for water quality parameters at sites used for total coliform sampling under § 141.21(a)(1) if they also meet the requirements of this section.]

(ii) Samples collected at the entry point(s) to the distribution system must be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.,* when water is representative of all sources being used).

(2) ***Number of samples.***

(i) Systems must collect two tap samples for applicable water quality parameters during each monitoring period specified under paragraphs (b) through (e) of this section from the minimum number of sites listed in table 1 to this paragraph (a)(2)(i). Systems that add sites as a result of the "find-and-fix" requirements in § 141.82(j) must collect tap samples for applicable water quality parameters during each monitoring period under paragraphs (b) through (e) of this section and must sample from that adjusted minimum number of sites. Systems are not required to add sites if they are monitoring at least twice the minimum number of sites list in table 1 to this paragraph (a)(2)(i).

Table 1 to paragraph (a)(2)(i)

| System size (number people served) | Minimum number of sites for water quality parameters |
|---|---|
| >100,000 | 25 |
| 10,001-100,000 | 10 |
| 3,301-10,000 | 3 |
| 501-3,300 | 2 |
| 101-500 | 1 |
| ≤ 100 | 1 |

(ii)

(A) Except as provided in paragraph (c)(2) of this section, water systems without corrosion control treatment must collect two samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in paragraph (b) of this section. During each monitoring period specified in paragraphs (c) through (e) of this section, water systems must collect one sample for each applicable water quality parameter at each entry point to the distribution system.

(B) During each monitoring period specified in paragraphs (c) through (e) of the section, water systems with corrosion control treatment must continue to collect one sample for each applicable water quality parameter at each entry point to the distribution system no less frequently than once every two weeks.

(b) ***Initial sampling for water systems.*** Any large water system without corrosion control treatment must monitor for water quality parameters as specified in paragraphs (b)(1) and (2) of this section during the first two six-month tap sampling monitoring periods beginning no later than January 1 of the calendar year after the system either becomes a large water system, or fails to maintain their 90th percentile for lead below the PQL for lead. Any medium or small system that exceeds the lead or copper action level and any system with corrosion control treatment for which the State has not designated OWQPs that exceeds the lead trigger level shall monitor for water quality parameters as specified in paragraphs (b)(1) and (2) of this section for two consecutive 6-month periods beginning the month immediately following the end of the tap sampling period in which the exceedance occurred.

(1) At taps, two samples for:

(i) pH;

(ii) Alkalinity;

(2) At each entry point to the distribution system all of the applicable parameters listed in paragraph (b)(1) of this section.

(c) ***Monitoring after installation of optimal corrosion control or re-optimized corrosion control treatment.***

(1) Any system that installs or modifies corrosion control treatment pursuant to § 141.81(d)(5) or (e)(5) and is required to monitor pursuant § 141.81(d)(6) or (e)(6) must monitor the parameters identified in paragraphs (c)(1)(i) and (ii) of this section every six months at the locations and frequencies specified in paragraphs (c)(1)(i) and (ii) of this section until the State specifies new water quality parameter values for optimal corrosion control pursuant to paragraph (d) of this section. Water systems must collect these samples evenly throughout the 6-month monitoring period so as to reflect seasonal variability.

(i) At taps, two samples each for:

(A) pH;

(B) Alkalinity;

(C) Orthophosphate, when an inhibitor containing an orthophosphate compound is used;

(D) Silica, when an inhibitor containing a silicate compound is used.

(ii) Except as provided in paragraph (c)(1)(iii) of this section, at each entry point to the distribution system, at least one sample no less frequently than every two weeks (biweekly) for:

(A) pH;

(B) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

(C) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

(iii) Any groundwater system can limit entry point sampling described in paragraph (c)(1)(ii) of this section to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated groundwater sources mixes with water from treated groundwater sources, the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this paragraph (c)(1)(iii), the water system must provide to the State, written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(2) States have the discretion to require small and medium-size systems with treatment for which the State has not designated OWQPs that exceed the lead trigger level but not the lead and copper action levels to conduct water quality parameter monitoring as described in paragraph (c)(1) of this section or the State can develop its own water quality control parameter monitoring structure for these systems.

(d) ***Monitoring after State specifies water quality parameter values for optimal corrosion control.***

(1) After the State specifies the values for applicable water quality parameters reflecting optimal corrosion control treatment under § 141.82(f), systems must monitor for the specified optimal water quality parameters during 6-month periods that begin on either January 1 or July 1. Such monitoring must be spaced evenly throughout the 6-month monitoring period so as to reflect seasonal variability and be consistent with the structure specified in paragraphs (c)(1)(i) through (iii) of this section.

(i) All large systems must measure the applicable water quality parameters specified by the State and determine compliance with the requirements of § 141.82(g) every six months with the first 6-month period to begin on either January 1 or July 1, whichever comes first, after the State specifies the optimal values under § 141.82(f).

(ii) Any small or medium-size water system that exceeds an action level must begin monitoring during the six-month period immediately following the tap sampling monitoring period in which the exceedance occurs and continue monitoring until the water system no longer exceeds the lead and copper action levels and meets the optimal water quality control parameters in two consecutive 6-month tap sampling monitoring periods under § 141.86(d)(3). For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to § 141.86(d)(4) at the time of the action level exceedance, the start of the applicable 6-month monitoring period under this paragraph must coincide with the start of the applicable tap sampling monitoring period under § 141.86(d)(4).

(iii) Compliance with State-designated optimal water quality parameter values must be determined as specified under § 141.82(g).

(2) Any small or medium-size system that exceeds the lead trigger level, but not the lead and copper action levels for which the State has set optimal water quality control parameters must monitor as specified in paragraph (d)(1) of this section every six month, until the system no longer exceeds the lead trigger level in two consecutive tap sampling monitoring periods.

(3) States have the discretion to continue to require systems described in paragraph (d)(2) of this section to monitor optimal water quality control parameters.

(e) ***Reduced monitoring.***

(1) Any large water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under § 141.82(f) and does not exceed the lead trigger level during each of two consecutive 6-month monitoring periods under paragraph (d) of this section must continue monitoring at the entry point(s) to the distribution system as specified in paragraph (c)(1)(ii) of this section. Such system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each 6-month monitoring period. Water systems must collect these samples evenly throughout the 6-month monitoring period so as to reflect seasonal variability.

Table 2 to paragraph (e)(1)

| System size (number of people served) | Reduced minimum number of sites for water quality parameters |
|---|---|
| >100,000 | 10 |
| 10,001-100,000 | 7 |
| 3,301-10,000 | 3 |

| System size (number of people served) | Reduced minimum number of sites for water quality parameters |
|---|---|
| 501-3,300 | 2 |
| 101-500 | 1 |
| ≤100 | 1 |

(2)

(i) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under § 141.82(f) and does not exceed the lead trigger level or copper action level during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in paragraph (e)(1) of this section, from every six months to annually. This sampling begins during the calendar year immediately following the end of the monitoring period in which the third consecutive year of 6-month monitoring occurs.

(ii) A water system may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in paragraph (e)(1) of this section to every year if it demonstrates during two consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead of 0.005 mg/L that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L in § 141.80(c)(3), and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under § 141.82(f).

(3) A water system that conducts sampling annually must collect these samples evenly throughout the year so as to reflect seasonal variability.

(4) Any water system subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State in § 141.82(f) for more than nine days in any 6-month period specified in § 141.82(g) must resume distribution system tap water sampling in accordance with the number and frequency requirements in paragraph (d) of this section. Such a system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in paragraph (e)(1) of this section after it has completed two subsequent consecutive 6-month rounds of monitoring that meet the criteria of paragraph (e)(1) of this section and/or may resume annual monitoring for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (e)(2)(i) or (ii) of this section.

(f) ***Additional monitoring by systems.*** The results of any monitoring conducted in addition to the minimum requirements of this section must be considered by the water system and the State in making any determinations (*i.e.,* determining concentrations of water quality parameters) under this section or § 141.82.

(g) ***Additional sites added from find-and-fix.*** Any water system that conducts water quality parameter monitoring at additional sites through the "find-and-fix" provisions pursuant to § 141.82(j) must add those sites to the minimum number of sites specified under paragraphs (a) through (e) of this section unless the system is monitoring at least twice the minimum number of sites.

*[86 FR 4300, Jan. 15, 2021]*

### § 141.88 Monitoring requirements for lead and copper in source water.

(a) ***Sample location, collection methods, and number of samples.***

(1) A water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with § 141.86 shall collect lead and copper source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods:

(i) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point). The system shall take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(ii) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point). The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

Note to paragraph (a)(1)(ii):
For the purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

(iii) If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.,* when water is representative of all sources being used).

(iv) The State may reduce the total number of samples which must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:

(A) A follow-up sample shall be taken and analyzed within 14 days at each sampling point included in the composite; or

(B) If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.

(2) Where the results of sampling indicate an exceedance of maximum permissible source water levels established under § 141.83(b)(4), the State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If a State-required confirmation sample is taken for lead or copper, then the results of the initial and confirmation sample shall be averaged in determining compliance with the State-specified maximum permissible levels. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below the PQL shall either be considered as the measured value or be considered one-half the PQL.

(b) ***Monitoring frequency after system exceeds tap water action level.*** Any system which exceeds the lead or copper action level at the tap for the first time or for the first time after an addition of a new source or installation of source water treatment required under § 141.83(b)(2) shall collect one source water sample from each entry point to the distribution system no later than six months after the end of the tap sampling period during which the lead or copper action level was exceeded. For tap sampling periods that are annual or less frequent, the end of the tap sampling period is September 30 of the calendar year in which the sampling occurs, or if the State has established an alternate monitoring period, the last day of that period. If the State determines that source water treatment is not required under § 141.83(b)(2), the state may waive source water monitoring, for any subsequent lead or copper action level exceedance at the tap, in accordance with the requirements in paragraphs (b)(1)(i) through (iii) of this section.

(1) The State may waive source water monitoring for lead or copper action level exceedance at the tap under the following conditions:

(i) The water system has already conducted source water monitoring following a previous action level exceedance;

(ii) The State has determined that source water treatment is not required; and

(iii) The system has not added any new water sources.

(2) [Reserved]

(c) ***Monitoring frequency after installation of source water treatment and addition of new source.***

(1) Any system which installs source water treatment pursuant to § 141.83(a)(3) shall collect one source water sample from each entry point to the distribution system during two consecutive six-month monitoring periods by the deadline specified in § 141.83(a)(4).

(2) Any system which adds a new source shall collect one source water sample from each entry point to the distribution system until the system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in § 141.83(b)(4) or the State determines that source water treatment is not needed.

(d) ***Monitoring frequency after State specifies maximum permissible source water levels.***

(1) A system shall monitor at the frequency specified in paragraphs (d)(1) and (2) of this section, in cases where the State specifies maximum permissible source water levels under § 141.83(b)(4).

(i) A water system using only groundwater shall collect samples once during the three-year compliance period (as that term is defined in § 141.2) in effect when the applicable State determination under paragraph (d)(1) of this section is made. Such systems shall collect samples once during each subsequent compliance period. Triennial samples shall be collected every third calendar year.

(ii) A water system using surface water (or a combination of surface and ground water) shall collect samples once during each calendar year, the first annual monitoring period to begin during the year in which the applicable State determination is made under paragraph (d)(1) of this section.

(2) A system is not required to conduct source water sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the system under paragraph (d)(1) (i) or (ii) of this section.

(e) ***Reduced monitoring frequency.***

(1) A water system using only groundwater may reduce the monitoring frequency for lead and copper in source water to once during each nine-year compliance cycle (as that term is defined in § 141.2) provided that the samples are collected no later than every ninth calendar year and if the system meets the following criteria:

(i) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in § 141.83(b)(4) during at least three consecutive monitoring periods under paragraph (d)(1) of this section.

(ii) [Reserved]

(2) A water system using surface water (or a combination of surface water and groundwater) may reduce the monitoring frequency in paragraph (d)(1) of this section to once during each nine-year compliance cycle (as that term is defined in § 141.2) provided that the samples are collected no later than every ninth calendar year and if the system meets the following criteria:

(i) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in § 141.83(b)(4) for at least three consecutive years'

(ii) [Reserved]

(3) A water system that uses a new source of water is not eligible for reduced monitoring for lead and/or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified by the State in § 141.83(a)(5).

*[56 FR 26548, June 7, 1991; 57 FR 28788 and 28789, June 29, 1992, as amended at 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007; 86 FR 4302, Jan. 15, 2021]*

## § 141.89 Analytical methods.

(a) Analyses for lead, copper, pH, alkalinity, orthophosphate, and silica shall be conducted in accordance with methods in § 141.23(k)(1).

(1) Analyses for alkalinity, orthophosphate, pH, and silica may be performed by any person acceptable to the State. Analyses under this section for lead and copper shall only be conducted by laboratories that have been certified by EPA or the State. To obtain certification to conduct analyses for lead and copper, laboratories must:

(i) Analyze Performance Evaluation samples, which include lead and copper, provided by or acceptable to EPA or the State at least once a year by each method for which the laboratory desires certification; and

(ii) Achieve quantitative acceptance limits as follows:

(A) For lead: ±30 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.005 mg/L. The Practical Quantitation Level, or PQL for lead is 0.005 mg/L.

(B) For Copper: ±10 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.050 mg/L. The Practical Quantitation Level, or PQL for copper is 0.050 mg/L.

(iii) Achieve method detection limit for lead of 0.001 mg/L according to the procedures in appendix B of part 136 of this title.

(iv) Be currently certified by EPA or the State to perform analyses to the specifications described in paragraph (a)(1) of this section.

(2) States have the authority to allow the use of previously collected monitoring data for purposes of monitoring, if the data were collected and analyzed in accordance with the requirements of this subpart.

(3) All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero.

(4) All copper levels measured between the PQL and the MDL must be either reported as measured or they can be reported as one-half the PQL (0.025 mg/L). All levels below the copper MDL must be reported as zero.

(b) [Reserved]

*[56 FR 26548, June 7, 1991, as amended at 57 FR 28789, June 29, 1992; 57 FR 31847, July 17, 1992; 59 FR 33863, June 30, 1994; 59 FR 62470, Dec. 5, 1994; 64 FR 67466, Dec. 1, 1999; 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007; 86 FR 4303, Jan. 15, 2021]*

## § 141.90 Reporting requirements.

All water systems shall report all of the following information to the State in accordance with this section.

(a) ***Reporting requirements for tap water monitoring for lead and copper and for water quality parameter monitoring.***

(1) Notwithstanding the requirements of § 141.31(a), except as provided in paragraph (a)(1)(viii) of this section, a water system must report the information specified in paragraphs (a)(1)(i) through (ix) of this section, for all tap water samples specified in § 141.86 and for all water quality parameter samples specified in § 141.87 within the first 10 days following the end of each applicable tap sampling monitoring period specified in §§ 141.86 and 141.87 (*i.e.,* every six months, annually, every three years, or every nine years). For tap sampling periods with a duration less than six months, the end of the tap sampling monitoring period is the last date samples can be collected during that tap sampling period as specified in §§ 141.86 and 141.87.

(i) The results of all tap samples for lead and copper including the location of each site and the site selection criteria under § 141.86(a)(3) through (10), used as the basis for which the site was selected for the water system's sampling pool, accounting for § 141.86(a)(11);

(ii) Documentation for each tap water lead or copper sample for which the water system requests invalidation pursuant to § 141.86(f)(2);

(iii) Water systems with lead service lines, galvanized service lines requiring replacement, or lead status unknown service lines in the lead service line inventory conducted under § 141.84(a) must re-evaluate the tap sampling locations used in their sampling pool prior to the compliance date specified in § 141.80(a) and thereafter prior to the next round of tap sampling conducted by the system, or annually, whichever is more frequent.

(A) By the start of the first applicable tap sampling monitoring period in § 141.86(d), the water system must submit a site sample plan to the State in accordance with § 141.86, including a list of tap sample site locations identified from the inventory in § 141.84(a), and a list a tap sampling WQP sites selected under 141.87(a)(1). The site sample plan must be updated and submitted to the State prior to any changes to sample site locations. The State may require modifications to the site sample plan as necessary.

(B) For lead service line systems with insufficient lead service line sites to meet the minimum number required in § 141.86, documentation in support of the conclusion that there are an insufficient number of lead service line sites meeting the criteria under § 141.86(a)(3) or (4) for community water systems or § 141.86(a)(8) for non-transient, non-community water systems, as applicable;

(iv) The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each tap sampling period (calculated in accordance with § 141.80(c)(4)), unless the State calculates the water system's 90th percentile lead and copper levels under paragraph (h) of this section;

(v) With the exception of initial tap sampling conducted pursuant to § 141.86(d)(1)(i), the water system must identify any site which was not sampled during previous tap sampling periods, and include an explanation of why sampling sites have changed;

(vi) The results of all water quality parameter tap samples that are required to be collected under § 141.87(b) through (g);

(vii) The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under § 141.87 (b)-(e);

(viii) A water system shall report the results of all water quality parameter samples collected under § 141.87(c) through (f) during each six-month monitoring period specified in § 141.87(d) within the first 10 days following the end of the monitoring period unless the State has specified a more frequent reporting requirement;

(ix) By the start of the first applicable tap sampling period in § 141.86(d), the water system must submit to the State, a copy of the tap sampling protocol that is provided to individuals who are sampling. The State shall verify that wide-mouth collection bottles are used and recommendations for pre-stagnation flushing and aerator cleaning or removal prior to sample collection are not included pursuant to § 141.86(b). The tap sampling protocol shall contain instructions for correctly collecting a first draw sample for sites without lead service lines and a first draw and a fifth liter sample for sites with lead service lines, where applicable. If the water system seeks to modify its tap sampling protocol specified in this paragraph (a)(1)(ix), it must submit the updated version of the protocol to the State for review and approval no later than 60 days prior to use.

(2) For a non-transient non-community water system, or a community water system meeting the criteria of § 141.86(b)(5), that does not have enough taps that can provide first draw or fifth liter samples, the water system must either:

(i) Provide written documentation to the State identifying standing times and locations for enough non-first-draw and fifth liter samples to make up its sampling pool under § 141.86(b)(5) by the start of the first applicable monitoring period under § 141.86(d) unless the State has waived prior State approval of non-first-draw and fifth liter sample sites selected by the water system pursuant to § 141.86(b)(5); or

(ii) If the State has waived prior approval of non-first-draw sample sites selected by the system, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to § 141.86(b)(5) and include this information with the lead and copper tap sample results required to be submitted pursuant to paragraph (a)(1)(i) of this section.

(3) At a time specified by the State, or if no specific time is designated by the State, as early as possible but no later than six months prior to the addition of a new source or any long-term change in water treatment, a water system must submit written documentation to the State describing the addition. The State must review and approve the addition of a new source or long-term treatment change before it is implemented by the water system. The State may require the system to take actions before or after the addition of a new source or long-term treatment change to ensure the system will operate and maintain optimal corrosion control treatment such as additional water quality parameter monitoring, additional lead or copper tap sampling, and re-evaluation of corrosion control treatment. Examples of long-term treatment changes include but are not limited to, the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can also include dose changes to existing chemicals if the water system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes where a new source has not been added.

(4) Any small system applying for a monitoring waiver under § 141.86(g), or subject to a waiver granted pursuant to § 141.86(g)(3), shall provide the following information to the State in writing by the specified deadline:

(i) By the start of the first applicable tap sampling monitoring period in § 141.86(d), any small water system applying for a monitoring waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of § 141.86(g)(1) and (2).

(ii) No later than nine years after the monitoring previously conducted pursuant to § 141.86(g)(2) or § 141.86(g)(4)(i), each small system desiring to maintain its monitoring waiver shall provide the information required by §§ 141.86(g)(4)(i) and (ii).

(iii) No later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small system with a monitoring waiver shall provide written notification to the State, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

(5) Each ground water system that limits water quality parameter monitoring to a subset of entry points under § 141.87(c)(3) shall provide, by the commencement of such monitoring, written correspondence to the State that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(b) ***Source water monitoring reporting requirements.***

(1) A water system shall report the sampling results for all source water samples collected in accordance with § 141.88 within the first 10 days following the end of each source water monitoring period (*i.e.*, annually, per compliance period, per compliance cycle) specified in § 141.88.

(2) With the exception of the first round of source water sampling conducted pursuant to § 141.88(b), the system shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

(c) ***Corrosion control treatment reporting requirements.*** By the applicable dates under § 141.81, systems shall report the following information:

(1) For water systems demonstrating that they have already optimized corrosion control, information required in § 141.81(b)(1) through (3).

(2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under § 141.82(a).

(3) For systems required to evaluate the effectiveness of corrosion control treatments under § 141.82(c), the information required by that paragraph.

(4) For systems required to install optimal corrosion control designated by the State under § 141.82(d), a letter certifying that the system has completed installing that treatment.

(d) ***Source water treatment reporting requirements.*** By the applicable dates in § 141.83, systems shall provide the following information to the State:

(1) If required under § 141.83(b)(1), their recommendation regarding source water treatment;

(2) For systems required to install source water treatment under § 141.83(b)(2), a letter certifying that the system has completed installing the treatment designated by the State within 24 months after the State designated the treatment.

(e) ***Lead service line inventory and replacement reporting requirements.*** Water systems must report the following information to the State to demonstrate compliance with the requirements of §§ 141.84 and 141.85:

(1) No later than October 16, 2024, the water system must submit to the State an inventory of service lines as required in § 141.84(a).

(2) No later than October 16, 2024, any water system that has inventoried a lead service line, galvanized requiring replacement, or lead status unknown service line in its distribution system must submit to the State, as specified in § 141.84(b), a lead service line replacement plan.

(3) The water system must provide the State with updated versions of its inventory as required in § 141.84(a) in accordance with its tap sampling monitoring period schedule as required in § 141.86(d), but no more frequently than annually. The updated inventory must be submitted within 30 days of the end of each tap sampling monitoring period.

(i) When the water system has demonstrated that it has no lead, galvanized requiring replacement, or lead status unknown service lines in its inventory, it is no longer required to submit inventory updates to the State, except as required in paragraph (e)(3)(ii) of this section.

(ii) In the case that a water system meeting the requirements of paragraph (e)(3)(i) of this section, subsequently discovers any service lines requiring replacement in its distribution system, it must notify the State within 30 days of identifying the service line(s) and prepare an updated inventory in accordance with § 141.84(a) on a schedule established by the State.

(4) Within 30 days of the end of each tap sampling monitoring period, the water system must certify that it conducted replacement of any encountered lead goosenecks, pigtails, and connectors in accordance with § 141.84(c).

(5) Within 30 days of the end of each tap sampling monitoring period, the water system must certify to the State that any partial and full lead service line replacements were conducted in accordance with § 141.84(d) and (e), respectively.

(6) If the water system fails to meet the 45-day deadline to complete a customer-initiated lead service line replacement pursuant to § 141.84(d)(4), it must notify the State within 30 days of the replacement deadline to request an extension of the deadline up to 180 days of the customer-initiated lead service line replacement.

(i) The water system must certify annually that it has completed all customer-initiated lead service line replacements in accordance with § 141.84(d)(4).

(ii) [Reserved]

(7) No later than 30 days after the end of the water system's annual lead service line replacement requirements under § 141.84(f) and (g), the water system must submit the following information to the State, and continue to submit it each year it conducts lead service line replacement under § 141.84(f) and (g):

(i) The number of lead service lines in the initial inventory;

(ii) The number of galvanized requiring replacement service lines in the initial inventory;

(iii) The number of lead status unknown service lines in the inventory at the onset of the water system's annual lead service line replacement program;

(iv) The number of full lead service lines that have been replaced and the address associated with each replaced service line;

(v) The number of galvanized requiring replacement service lines that have been replaced and the address associated with each replaced service line;

(vi) The number of lead status unknown service lines remaining in the inventory;

(vii) The total number of lead status unknown service lines determined to be non-lead; and

(viii) The total number of service lines initially inventoried as “non-lead” later discovered to be a lead service line or a galvanized requiring replacement service line.

(8) No later than 30 days after the end of each tap sampling period, any water system that has received customer refusals about lead service line replacements or customer non-responses after a minimum of two good faith efforts by the water system to contact customers regarding full lead service line replacements in accordance with § 141.84(g)(7), must certify to the State the number of customer refusals or non-responses it received from customers served by a lead service line or galvanized requiring replacement service line, and maintain such documentation.

(9) No later than 12 months after the end of a tap sampling period in which a water system exceeds the lead action level in sampling conducted pursuant to § 141.86, the system must provide to the State its schedule for annually replacing an average annual rate, calculated on a two year rolling basis, of at least three percent, or otherwise specified in § 141.84(g)(9), of the number of known lead service lines and galvanized lines requiring replacement when the lead trigger or action level was first exceeded and lead status unknown service lines at the beginning of each year that required replacement occurs in its distribution system.

(10) No later than 12 months after the end of a sampling period in which a system exceeds the lead trigger level in sampling conducted pursuant to § 141.86, and every 12 months thereafter, the system shall certify to the State in writing that the system has:

(i) Conducted consumer notification as specified in §§ 141.84(f)(4) and 141.85(g) and

(ii) Delivered public education materials to the affected consumers as specified in § 141.85(a).

(iii) A water system that does not meet its annual service line replacement goal as required under § 141.84(f) must certify to the State in writing that the water system has conducted public outreach as specified in § 141.85(h). The water system must also submit the outreach materials used to the State.

(11) The annual submission to the State under paragraph (e)(10) of this section must contain the following information:

(i) The certification that results of samples collected between three months and six months after the date of a full or partial lead service line replacement were provided to the resident in accordance with the timeframes in § 141.85(d)(2). Mailed notices post-marked within three business days of receiving the results shall be considered “on time.”

(ii) [Reserved]

(12) Any system which collects samples following a partial lead service line replacement required by § 141.84 must report the results to the State within the first ten days of the month following the month in which the system receives the laboratory results, or as specified by the State. States, at their discretion may eliminate this requirement to report these monitoring results, but water systems shall still retain such records. Systems must also report any additional information as specified by the State, and in a time and manner prescribed by the State, to verify that all partial lead service line replacement activities have taken place.

(13) Any system with lead service lines in its inventory must certify on an annual basis that the system has complied with the consumer notification of lead service line materials as specified in § 141.85(e).

(f) ***Public education program reporting requirements.***

(1) Any water system that is subject to the public education requirements in § 141.85 shall, within ten days after the end of each period in which the system is required to perform public education in accordance with § 141.85(b), send written documentation to the State that contains:

(i) The public education materials that were delivered, and a demonstration that the water system has delivered the public education materials that meet the content requirements in § 141.85(a) and the delivery requirements in § 141.85(b); and

(ii) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the system delivered public education materials during the period in which the system was required to perform public education tasks.

(2) Unless required by the State, a system that previously has submitted the information required by paragraph (f)(1)(ii) of this section need not resubmit the information required by paragraph (f)(1)(ii) of this section, as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.

(3) No later than three months following the end of the tap sampling period, each water system must mail a sample copy of the consumer notification of tap results to the State along with a certification that the notification has been distributed in a manner consistent with the requirements of § 141.85(d).

(4) Annually by July 1, the water system must demonstrate to the State that it delivered annual consumer notification and delivered lead service line information materials to affected consumers with a lead, galvanized requiring replacement, or lead status unknown service line in accordance with § 141.85(e) for the previous calendar year. The water system shall also provide a copy of the notification and information materials to the State.

(5) Annually by July 1, the water system must demonstrate to the State that it conducted an outreach activity in accordance with § 141.85(h) when failing to meet the lead service line replacement goal as specified in § 141.84(f) for the previous calendar year. The water system shall also submit a copy to the State of the outreach provided.

(6) Annually, by July 1, the water system must certify to the State that it delivered notification to affected customers after any lead service line disturbance in accordance with § 141.85(f) for the previous calendar year. The water system shall also submit a copy of the notification to the State.

(7) Annually, by July 1, the water system must certify to the State that it delivered the required find-and-fix information to the State and local health departments for the previous calendar year.

(g) ***Reporting of additional monitoring data.*** Any water system which collects more samples than the minimum required, shall report the results to the State within the first 10 days following the end of the applicable monitoring period under §§ 141.86, 141.87, and 141.88 during which the samples are collected. This includes the monitoring data pertaining to “find-and-fix” pursuant to §§ 141.86(h) and 141.87(g). The system must certify to the State the number of customer refusals or non-responses for follow-up sampling under § 141.82(j) it received and information pertaining to the accuracy of the refusals or non-responses, within the first 10 days following the end of the applicable tap sampling period in which an individual sample exceeded the action level.

(h) ***Reporting of 90th percentile lead and copper concentrations where the State calculates a water system's 90th percentile concentrations.*** A water system is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each tap sampling monitoring period, as required by paragraph (a)(1)(iv) of this section if:

(1) The State has previously notified the water system that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to paragraph (h)(2)(i) of this section, and the water system provides the results of lead and copper tap water samples no later than 10 days after the end of the applicable tap sampling monitoring period;

(2) The system has provided the following information to the State by the date specified in paragraph (h)(1) of this section:

(i) The results of all tap samples for lead and copper including the location of each site and the criteria under § 141.86(a)(3) through (10) under which the site was selected for the water system's sampling pool; and

(ii) An identification of sampling sites utilized during the current tap sampling monitoring period that were not sampled during previous monitoring periods, and an explanation of why sampling sites have changed; and

(3) The State has provided the results of the 90th percentile lead and copper calculations, in writing, to the water system within 15 days of the end of the tap sampling period.

(i) ***Reporting requirements for a community water system's public education and sampling in schools and child care facilities.***

(1) A community water system shall send a report to the State by July 1 of each year for the previous calendar year's activity. The report must include the following:

(i) Certification that the water system made a good faith effort to identify schools and child care facilities in accordance with § 141.92(e). The good faith effort may include reviewing customer records and requesting lists of schools and child care facilities from the primacy agency or other licensing agency. A water system that certifies that no schools or child care facilities are served by the water system is not required to include information in paragraphs (i)(1)(ii) through (iv) of this section in the report. If there are changes to schools and child care facilities that a water system serves, an updated list must be submitted at least once every five years in accordance with § 141.92(e).

(ii) Certification that the water system has delivered information about health risks from lead in drinking water to the school and child care facilities that they serve in accordance with § 141.92(a)(2) and (g)(1).

(iii) Certification that the water system has completed the notification and sampling requirements of § 141.92 and paragraphs (i)(1)(iii)(A) through (E) of this section at a minimum of 20 percent of elementary schools and 20 percent of child care facilities. Certification that the water system has completed the notification and sampling requirements of § 141.92(g) and paragraphs (i)(1)(iii)(A), (B), and (E) of this section for any secondary school(s) sampled. After a water system has successfully completed

one cycle of required sampling in all elementary schools and child care facilities identified in § 141.92(a)(1), it shall certify completion of the notification and sampling requirements of § 141.92(g) and paragraphs (i)(1)(iii)(A), (B), and (E) of this section for all sampling completed in any school or child care facility, thereafter.

(A) The number of schools and child care facilities served by the water system;

(B) The number of schools and child care facilities sampled in the calendar year;

(C) The number of schools and child care facilities that have refused sampling;

(D) Information pertaining to outreach attempts for sampling that were declined by the school or child care facility; and

(E) The analytical results for all schools and child care facilities sampled by the water system in the calendar year.

(iv) Certification that sampling results were provided to schools, child care facilities, and local and State health departments.

(2) [Reserved]

(3) The State has provided the results of the 90th percentile lead and copper calculations, in writing, to the water system before the end of the monitoring period.

(j) ***Reporting requirements for small system compliance flexibility options.*** By the applicable dates provided in paragraphs (j)(1) and (2), water systems implementing requirements pursuant to § 141.93, shall provide the following information to the State:

(1) Small water systems and non-transient, non-community water systems implementing the point-of-use device option under § 141.93(a)(3), shall report the results from the tap sampling required under § 141.93 no later than 10 days after the end of the tap sampling monitoring period. If the trigger level is exceeded, the water system must reach out to the homeowner and/or building management within 24 hours of receiving the tap sample results. The corrective action must be completed within 30 days. If the corrective action is not completed within 30 days, the system must provide documentation to the State within 30 days explaining why it was unable to correct the issue. Water systems selecting the point-of-use device option under § 141.93(a)(3) shall provide documentation to certify maintenance of the point-of-use devices unless the State waives the requirement of this paragraph (j)(1).

(2) Small community water systems and non-transient, non-community water systems implementing the small system compliance flexibility option to replace all lead-bearing plumbing under § 141.93(a)(4) must provide certification to the State that all lead-bearing material has been replaced on the schedule established by the State, within one year of designation of the option under § 141.93(a)(4).

*[56 FR 26548, June 7, 1991; 57 FR 28789, June 29, 1992, as amended at 59 FR 33864, June 30, 1994; 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007; 86 FR 4303, Jan. 15, 2021; 86 FR 31947, June 16, 2021]*

## § 141.91 Recordkeeping requirements.

Any system subject to the requirements of this subpart shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, State determinations, and any other information required by §§ 141.81 through 141.88, 141.90, 141.92, and 141.93. Each water system shall retain the records required by this section for no fewer than 12 years.

*[86 FR 4306, Jan. 15, 2021]*

## § 141.92 Monitoring for lead in schools and child care facilities.

All community water systems must conduct directed public education and lead monitoring at the schools and child care facilities they serve if those schools or child care facilities were constructed prior to January 1, 2014 or the date the State adopted standards that meet the definition of lead free in accordance with Section 1417 of the Safe Drinking Water Act, as amended by the Reduction of Lead in Drinking Water Act, whichever is earlier. Water systems must conduct lead sampling at elementary schools and child care facilities they serve once and on request of the facility thereafter. Water systems shall also conduct lead sampling at secondary schools they serve on request. The provisions of this section do not apply to a school or child care facility that is regulated as a public water system. The provisions in paragraph (a) of this section apply until a water system samples all the elementary schools and child care facilities they serve once as specified in paragraph (c) of this section. Thereafter, water systems shall follow the provisions as specified in paragraph (g) of this section.

(a) ***Public education to schools and child care facilities.***

(1) By the compliance date specified in § 141.80(a)(3), each water system must compile a list of schools and child care facilities served by the system.

(2) Each water system must contact elementary schools and child care facilities identified by the system in paragraph (a)(1) of this section to provide:

(i) Information about health risks from lead in drinking water on at least an annual basis consistent with the requirements of § 141.85(a);

(ii) Notification that the water system is required to sample for lead at elementary schools and child care facilities, including:

(A) A proposed schedule for sampling at the facility;

(B) Information about sampling for lead in schools and child care facilities (EPA's 3Ts for Reducing Lead in Drinking Water Toolkit, EPA-815-B-18-007 or subsequent EPA guidance); and

(C) Instructions for identifying outlets for sampling and preparing for a sampling event 30 days prior to the event.

(3) The water system must include documentation in accordance with § 141.90(i) if an elementary school or child care facility is non-responsive or otherwise declines to participate in the monitoring or education requirements of this section. For the purposes of this section, a school or child care facility is non-responsive after the water system makes at least two separate good faith attempts to contact the facility to schedule sampling with no response.

(4) The water system must contact all secondary schools in paragraph (a)(1) of this section on at least an annual basis to provide information on health risks from lead in drinking water and how to request lead sampling as specified in paragraph (g)(1) of this section.

(b) ***Lead sampling in schools and child care facilities.***

(1) Five samples per school and two samples per child care facility at outlets typically used for consumption shall be collected. Except as provided in paragraphs (b)(1)(i) through (vi) of this section, the outlets shall not have point-of-use (POU) devices. The water system shall sample at the following locations:

(i) For schools: two drinking water fountains, one kitchen faucet used for food or drink preparation, one classroom faucet or other outlet used for drinking, and one nurse's office faucet, as available.

(ii) For child care facilities: one drinking water fountain and one of either a kitchen faucet used for preparation of food or drink or one classroom faucet or other outlet used for drinking.

(iii) If any facility has fewer than the required number of outlets, the water system must sample all outlets used for consumption.

(iv) The water system may sample at outlets with POU devices if the facility has POU devices installed on all outlets typically used for consumption.

(v) If any facility does not contain the type of faucet listed above, the water system shall collect a sample from another outlet typically used for consumption as identified by the facility.

(vi) Water systems must collect the samples from the cold water tap subject to the following additional requirements:

(A) Each sample for lead shall be a first draw sample;

(B) The sample must be 250 ml in volume;

(C) The water must have remained stationary in the plumbing system of the sampling site (building) for at least 8 but no more than 18 hours; and

(D) Samples must be analyzed using acidification and the corresponding analytical methods in § 141.89.

(2) The water system, school or child care facility, or other appropriately trained individual may collect samples in accordance with paragraph (b)(1) of this section.

(c) ***Frequency of sampling at elementary schools and child care facilities.***

(1) Water systems shall collect samples from at least 20 percent of elementary schools served by the system and 20 percent of child care facilities served by the system per year, or according to a schedule approved by the State, until all schools and child care facilities identified under paragraph (a)(1) of this section have been sampled or have declined to participate. For the purposes of this section, a water system may count a refusal or non-response from an elementary school or child care facility as part of the minimum 20 percent per year.

(2) All elementary schools and child care facilities must be sampled at least once in the five years following the compliance date in § 141.80(a)(3).

(3) After a water system has completed one required cycle of sampling in all elementary schools and child care facilities, a water system must sample at the request of an elementary school or child care facility in accordance with paragraph (g) of this section.

(4) A water system must sample at the request of a secondary school as specified in paragraph (g) of this section. If a water system receives requests from more than 20 percent of secondary schools identified in paragraph (a)(1) of this section in any of the five years following the compliance date in § 141.80(a)(3), the water system may schedule the requests that exceed 20 percent for the following year and is not required to sample an individual secondary school more than once in the five year period.

(d) ***Alternative school and child care lead sampling programs.***

(1) If mandatory sampling for lead in drinking water is conducted for schools and child care facilities served by a community water system due to State or local law or program, the State may exempt the water system from the requirements of this section by issuing a written waiver:

(i) If the sampling is consistent with the requirements in paragraphs (b) and (c) of this section; or

(ii) If the sampling is consistent with the requirements in paragraphs (b)(1)(i) through (vi) and (c) of this section and it is coupled with any of the following remediation actions:

(A) Disconnection of affected fixtures;

(B) Replacement of affected fixtures with fixtures certified as lead free; and

(C) Installation of POU devices; or

(iii) If the sampling is conducted in schools and child care facilities served by the system less frequently than once every five years and it is coupled with any of the remediation actions specified in paragraph (d)(1)(ii) of this section; or

(iv) If the sampling is conducted under a grant awarded under Section 1464(d) of the SDWA, consistent with the requirements of the grant.

(2) The duration of the waiver may not exceed the time period covered by the mandatory or voluntary sampling and will automatically expire at the end of any 12-month period during which sampling is not conducted at the required number of schools or child care facilities.

(3) The State may issue a partial waiver to the water system if the sampling covers only a subset of the schools or child care facilities served by the system as designated under paragraph (a)(1) of this section.

(4) The State may issue a written waiver applicable to more than one system (e.g., one waiver for all systems subject to a statewide sampling program that meets the requirements of paragraph (d) of this section).

(e) ***Confirmation or revision of schools and child care facilities in inventory.*** A water system shall either confirm that there have been no changes to its list of schools and child care facilities served by the system developed pursuant to paragraph (a)(1) of this section, or submit a revised list at least once every five years.

(f) ***Notification of results.***

(1) A water system must provide analytical results as soon as practicable but no later than 30 days after receipt of the results to the school or child care facility, along with information about remediation options.

(2) A water system must provide analytical results annually to:

(i) The local and State health department; and

(ii) The State in accordance with § 141.90(i).

(g) ***Lead sampling in schools and child care facilities on request.***

(1) A water system must contact schools and child care facilities identified in paragraph (a)(1) of this section on at least an annual basis to provide:

(i) Information about health risks from lead in drinking water;

(ii) Information about how to request sampling for lead at the facility; and

(iii) Information about sampling for lead in schools and child care facilities (EPA's 3Ts for Reducing Lead in Drinking Water Toolkit, EPA-815-B-18-007, or subsequent EPA guidance).

(2) A water system must conduct sampling as specified in paragraph (b) of this section when requested by the facility and provide:

(i) Instructions for identifying outlets for sampling and preparing for a sampling event at least 30 days prior to the event; and

(ii) Results as specified in paragraph (f) of this section.

(3) If a water system receives requests from more than 20 percent of the schools and child care facilities identified in paragraph (a)(1) of this section in a given year, the water system may schedule sampling for those that exceed 20 percent for the following year. A water system is not required to sample an individual school or child care facility more than once every five years.

(4) If voluntary sampling for lead in drinking water is conducted for schools and child care facilities served by a community water system that meets the requirements of this section, the State may exempt the water system from the requirements of this section by issuing a written waiver in accordance with paragraph (d) of this section.

Any system subject to the requirements of this subpart shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, State determinations, and any other information required by §§ 141.81 through 141.88, 141.90, 141.92, and 141.93. Each water system shall retain the records required by this section for no fewer than 12 years.

*[86 FR 4306, Jan. 15, 2021]*

### § 141.93 Small water system compliance flexibility.

The compliance alternatives described in this section apply to small community water systems serving 10,000 or fewer persons and all non-transient, non-community water systems. Small community water systems and non-transient, non-community water systems with corrosion control treatment in place must continue to operate and maintain optimal corrosion control treatment until the State determines, in writing, that it is no longer necessary, and meet any requirements that the State determines to be appropriate before implementing a State approved compliance option described in this section.

(a) A small community water system and non-transient, non-community water systems that exceeds the lead trigger level but does not exceed the lead and copper action levels must collect water quality parameters in accordance with § 141.87(b) and evaluate compliance options in paragraphs (a)(1) through (4) of this section and make a compliance option recommendation to the State within six months of the end of the tap sampling period in which the exceedance occurred. The State must approve the recommendation or designate an alternative from compliance options in paragraphs (a)(1) through (4) of this section within six months of the recommendation by the water system. If the water system subsequently exceeds the lead action level it must implement the approved compliance option as specified in paragraph (b) of this section. Water systems must select from the following compliance options:

(1) ***Lead service line replacement.*** A water system must implement a full lead service line replacement program on a schedule approved by the State but not to exceed 15 years. A water system must begin lead service line replacement within one year after the State's approval or designation of the compliance option.

(i) Lead service line replacement must be conducted in accordance with the requirements of § 141.84(e) and (g)(4), (8), and (9).

(ii) A water system must continue lead service line replacement even if the system's 90th percentile lead level is at or below the action level in future tap sampling monitoring periods.

(iii) A water system must have no lead service lines, galvanized service lines requiring replacement, or “Lead status unknown” service lines in its inventory by the end of its lead service line replacement program.

(2) ***Corrosion control treatment.*** A water system must install and maintain optimal corrosion control treatment in accordance with §§ 141.81 and 141.82, even if its 90th percentile is at or below the action level in future tap sampling monitoring periods. Any water system that has corrosion control treatment installed must re-optimize its corrosion control treatment in accordance with § 141.81(d). Water systems required by the State to optimize or re-optimize corrosion control treatment must follow the schedules in § 141.81(d) or (e), beginning with Step 3 in paragraph (d)(3) or (e)(3) of § 141.81 unless the State specifies optimal corrosion control treatment pursuant to either § 141.81(d)(2)(ii) or (e)(2)(i) or (ii), as applicable.

(3) ***Point-of-use devices.*** A water system must install, maintain, and monitor POU devices in each household or building even if its 90th percentile is at or below the action level in future tap sampling monitoring periods.

(i)

(A) A community water system must install a minimum of one POU device (at one tap) in every household and at every tap that is used for cooking and/or drinking in every non-residential building in its distribution system on a schedule specified by the State, but not to exceed one year.

(B) A non-transient, non-community water system must provide a POU device to every tap that is used for cooking and/or drinking on a schedule specified by the State, but not to exceed three months.

(ii) The POU device must be independently certified by a third party to meet the American National Standards Institute standard applicable to the specific type of POU unit to reduce lead in drinking water.

(iii) The POU device must be maintained by the water system according to manufacturer's recommendations to ensure continued effective filtration, including but not limited to changing filter cartridges and resolving any operational issues. POU device must be equipped with mechanical warnings to ensure that customers are automatically notified of operational problems. The water system shall provide documentation to the state to certify maintenance of the point-of-use devices, unless the state waives this requirement, in accordance with § 141.90(j)(1).

(iv) The water system must monitor one-third of the POU devices each year and all POU devices must be monitored within a three-year cycle. First draw tap samples collected under this section must be taken after water passes through the POU device to assess its performance. Samples must be one-liter in volume and have had a minimum 6-hour stagnation time. All samples must be at or below the lead trigger level. The water systems must report the results from the tap sampling no later than 10 days after the end of the tap sampling monitoring period in accordance with § 141.90(j)(1). The system must document the problem and take corrective action at any site where the sample result exceeds the lead trigger level. If the trigger level is exceeded, the water system must reach out to the homeowner and/or building management no later than 24 hours of receiving the tap sample results. The corrective action must be completed within 30 days. If the corrective action is not completed within 30 days, the system must provide documentation to the State within 30 days explaining why it was unable to correct the issue.

(v) The water system must provide public education to consumers in accordance with § 141.85(j) to inform them on proper use of POU devices to maximize the units' lead level reduction effectiveness.

(vi) The water system must operate and maintain the POU devices until the system receives State approval to select one of the other compliance flexibility options and implements it.

(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, as amended by the Reduction of Lead in Drinking Water Act and any future amendments applicable at the time of replacement. The replacement of all lead-bearing plumbing must occur on a schedule established by the State but not to exceed one year. Water systems must provide certification to the State that all lead-bearing material has been replaced in accordance with § 141.90(j)(2).

(b)

(1) A water system that exceeds the lead action level after exceeding the lead trigger level but does not exceed the copper action level must implement the compliance option approved by the State under paragraph (a) of this section.

(2) A water system that exceeds the lead action level, but has not previously exceeded the lead trigger level, and does not exceed the copper action level must complete the provisions in paragraph (a) of this section and must implement the compliance option approved by the State under paragraph (a) of this section.

(3) A water system that exceeds the trigger level after it has implemented a compliance option approved by the State under paragraph (a) of this section, must complete the steps in paragraph (a) and if it thereafter exceeds the action level, it must implement the compliance option approved by the State under paragraph (a) of this section.

*[86 FR 4308, Jan. 15, 2021]*