ILLINOIS POLLUTION CONTROL BOARD
June 1, 2023

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| IN THE MATTER OF: | ) | |
| SDWA UPDATE, USEPA AMENDMENTS | ) | R21-10 |
| (July 1, 2020, through December 31, 2020) | ) | |
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| SDWA UPDATE, USEPA AMENDMENTS | ) | R22-2 |
| (July 1, 2021, through December 31, 2021) | ) | (Identical-in-Substance |
| | ) | Rulemaking - Public Water Supply) |
| | ) | (Consolidated) |

Proposed Rule. Proposal for Public Comment.

OPINION AND ORDER OF THE BOARD (by J. Van Wie):

## SUMMARY OF THIS ACTION

The Board today proposes amendments to Illinois regulations that are "identical in substance" (IIS) to drinking water regulations adopted by the United States Environmental Protection Agency (USEPA) in the second half of 2020 and first half of 2021. USEPA took two actions relating to lead in drinking water and granted summary approval to about 17 additional alternative test procedures (ATPs)[1] for analyzing contaminants in drinking water. The Board now adds these provisions to the Illinois drinking water rules.

The Board finds that corrections and revisions not directly based on the present USEPA actions are needed and adds them to its proposal. The most significant pertain to the Radionuclides Rule and removing several rules applicable to unfiltered system suppliers using surface water sources and groundwater under the direct influence of surface water. The Board also proposes stylistic changes, including many of the type ordinarily requested by JCAR, and corrections to errors in the text.

Finally, the Board finds that additional time is needed to complete the amendments and extends the adoption deadline to October 1, 2023.

Sections 7.2 and 17.5 of the Illinois Environmental Protection Act (Act) (415 ILCS 5/7.2 and 17.5 (2020)) provide for quick adoption by the Board of regulations that are IIS to regulations that USEPA adopts to implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal Safe Drinking Water Act (SDWA) (42 U.S.C. §§ 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (2021)). The National Primary Drinking Water Regulations (NPDWRs) implement these sections of SDWA. SDWA regulations are found at 40 C.F.R. 141 through 143.

[1] The Board in the past called these "alternative equivalent methods" based on section 1401(1) of SDWA (42 U.S.C. § 300g-1(1) (2020) (defining "national primary drinking water regulation")). The Board now follows USEPA by referring to them as "alternative test procedures" or "ATPs."

Section 17.5 of the Act also provides that Title VII of the Act and Section 5 of the Illinois Administrative Procedure Act (APA) (5 ILCS 100/5-35 and 5-40 (2020)) do not apply to the Board's adoption of IIS regulations.

The Board will submit the proposed amendments for publication in the *Illinois Register* and receive public comments for at least 45 days after publication. The Board expects to adopt final rules by the extended due date of October 1, 2023.

The Board specifically requests public comment on the USEPA amendments requiring lead-free drinking water fixtures, revising the Lead and Copper Rule, and incorporating new ATPs into the Illinois rules. The Board also specifically requests comments on Board-initiated revisions: correcting the Radionuclides Rule, removing rules pertaining to unfiltered system suppliers, and making other corrections and changes.

This opinion has four main segments. First, the Board extends the due date for final action on the amendments. Second, a timetable for completing this rulemaking follows. Third, the Board discusses USEPA's actions that resulted in proposed amendments. Finally, the Board discusses the Board-initiated revisions. The text of the Board's proposed amendments is appended to this opinion and order. The Board is assembling and will add to the docket an Identical-in-Substance Rulemaking Addendum (Proposed) describing textual edits in detail.

## EXTENSION OF DUE DATE AND REASONS FOR DELAY

The Board finds it necessary to set forth the reasons for delay and again extending the due date for final Board adoption of amendments.

Under Section 7.2(b) of the Act (415 ILCS 5/7.2(b) (2020)), the Board must complete this rulemaking within one year after the corresponding federal action. Based on the date USEPA approved additional methods, the Board's deadline to adopt final rules in this docket was September 1, 2020.

The Board encountered unanticipated delay in developing this proposal for public comment because of the volume and complexity of the amendments delayed this proposal. In anticipation of retirement, the Board staff member who has worked on these types of updates for over 30 years thoroughly reviewed and corrected errors. The Board now anticipates adopting these proposed amendments no later than October 1, 2023. Therefore, the Board extends the deadline until that date.

## TIMETABLE TO COMPLETE RULEMAKING

Adopting this proposal for public comment today will allow the Board to complete this rulemaking by September 18, 2023, barring unforeseen delays. The Board intends to adhere to the following schedule:

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| **Board order proposing amendments:** | **June 1, 2023** |
| Submission for *Illinois Register* publication: | June 9, 2023 |
| Estimated *Illinois Register* publication: | June 23, 2023 |
| Estimated End of 45-day public comment period: | August 7, 2023 |
| **Board order adopting amendments:** | **September 7, 2023** |
| **Estimate of when rules take effect:** | **September 18, 2023** |
| Estimated *Illinois Register* publication: | September 29, 2023 |

Extending the date completion until October 1, 2023, includes time to allow for any request for extended public review or unforeseen delays.

## DISCUSSION

The discussion includes four main segments. The first lists USEPA actions that the Board includes in this consolidated rulemaking. The second discusses each USEPA action and the Board's actions in response. The third considers the various Board-initiated corrections and revisions. In the fourth, the Board requests public comment.

### Summary of USEPA Actions in This Rulemaking

The following paragraphs summarize USEPA's actions considered in this consolidated rulemaking in chronological order. Each includes a brief description of any Board action in response.

The Board does not generally review the substance of USEPA actions in IIS rulemaking. Rather, the Board considers USEPA rules to ensure appropriate incorporating of the USEPA's requirements into the Illinois rules. Any person interested in the full substance and basis of USEPA's rules should begin by reviewing the associated *Federal Register* notices and other USEPA resources.

**September 1, 2020 (85 Fed. Reg. 54235).** USEPA revised standards for lead in plumbing fixtures and plumbing materials. The revised standards are consistent with the 2011 statutory revisions. The Board must incorporate USEPA's changes into the Illinois rules.

**January 15, 2021 (86 Fed. Reg. 4198).** USEPA adopted the Lead and Copper Rule Revisions (LCRR), revising the Lead and Copper Rule (LCR). The Board must incorporate USEPA's changes into the Illinois rules.

**March 12, 2021 (86 Fed. Reg. 14003).** USEPA delayed the effective date of the January 15, 2021, LCRR until June 17, 2021. The delayed effective date has passed, requiring no Board action. Nevertheless, the Board notes USEPA's delayed date.

**May 19, 2021 (86 Fed. Reg. 27226).** USEPA updated the Clean Water Act (CWA) methods for effluent analyses. The Board must update the incorporation by reference to 40 C.F.R. § 136.3(a) in 35 Ill. Adm. Code 611.102(b) to include USEPA's updates in Illinois' rules.

**May 26, 2021 (86 Fed. Reg. 28277).** USEPA designated 17 additional ATPs for

analyzing drinking water samples. Included are methods for inorganic, volatile organic, synthetic organic, radiochemical, and microbiological contaminants and disinfectant residuals. The Board must incorporate these new methods into Illinois' rules.

**June 2, 2021 (86 Fed. Reg. 29526).** USEPA corrected its May 26, 2021 designation. The Board must incorporate these corrections into the amendments.

**June 16, 2021 (86 Fed. Reg. 31939).** USEPA delayed the effective and compliance dates of the LCRR. USEPA delayed the effective date until December 16, 2021, and the January 16, 2024, compliance date until October 16, 2024. The Board must incorporate the delayed compliance date into the Illinois rule.

**Lead-Free Fixtures Rule**

USEPA replaced the former rule banning using lead pipes, solder, and flux in 40 C.F.R. § 141.43 with extensive new rules in subpart B of 40 C.F.R. 143. Statutory changes in SDWA in 2011 and 2013 prompted USEPA's action.[2] The 2011 change revised the definition of "lead free" in the statutory prohibition on lead plumbing and fixtures.[3] The 2013 change exempted fire hydrants from the ban.[4]

USEPA's rule prohibits using any pipe, plumbing fitting or fixture, or lead solder or flux (plumbing material) that is not lead-free as defined under the rule.[5] The rule prohibits introducing any plumbing material to commerce that is not lead-free[6] and requires certification of products sold as lead-free.[7] There are exemptions focused on non-potable use or use where human consumption is unlikely,[8] and the rule does not apply to lead joints necessary to repair

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[2] 85 Fed. Reg. 54235, 54236 (Sep. 1, 2020).

[3] Reduction of Lead in Drinking Water Act, P.L. 111-380, 124 Stat. 4131 (Jan. 4, 2011) (amending SDWA section 1417 (42 U.S.C. § 300g-6) effective January 4, 2014).

[4] Community Fire Safety Act of 2013, P.L. 113-64, 127 Stat. 668 (Dec. 20, 2013). Other exemptions exclude plumbing for non-potable uses, like toilets, showers, irrigation, manufacturing, and industrial use, where human consumption is unlikely. 85 Fed. Reg. at 54238. Dishwashers are exempt from lead free certification requirements. 40 C.F.R. § 143.19(a)(3) (2021).

[5] 40 C.F.R. § 143.13(a) (2021).

[6] 40 C.F.R. § 143.15 (2021).

[7] 40 C.F.R. § 143.19 (2021).

[8] 40 C.F.R. § 143.16 (2021).

cast iron pipes.[9] Any solder containing lead or flux must bear a label stating its use in plumbing providing water for human consumption is illegal.[10]

USEPA's rule requires states to implement its use prohibitions and those in the SDWA.[11] USEPA's rule provides that noncompliance may subject a person to enforcement action,[12] and it authorizes USEPA to request information "to determine whether a person has acted or is acting in compliance." It also provides that "[i]nformation, such as records requested, must be provided to the Administrator at a time and in a format as may be reasonably determined by the Administrator."[13]

The Board previously altered the Illinois prohibition against leaded plumbing materials to rely on a national standard. SDWA required USEPA to aid "third-party certifiers" to develop a consensus standard for lead in plumbing materials.[14] After USEPA announced that the National Sanitation Foundation (NSF) Standard 61 was that standard,[15] the Board incorporated that standard by reference in the Illinois rule.[16]

The Board later revised the prohibition in response to the federal statutory changes. These changes prompted USEPA's recent new rule prohibiting anything but lead-free plumbing materials. To avoid tying Illinois' rule to an evolving standard, the Board opted to remove the reference to it and define "lead free" using the statutory standard in SDWA.[17]

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[9] 40 C.F.R. § 143.13(b) (2021).

[10] 40 C.F.R. § 143.18 (2021).

[11] Prohibitions in SDWA section 1417(a)(1) (42 U.S.C. § 300g-6 (2021). As a condition to receiving Public Water System Supervision grants under SDWA section 1443(a) (42 U.S.C. § 300j-2(a) (2021)). 40 C.F.R. § 143.14 (2021). The prior USEPA rule also required state enforcement but placed a significant limit on USEPA withholding grant funds. *See* 40 C.F.R. § 141.43(2020).

[12] 40 C.F.R. § 143.20(a) (2021).

[13] 40 C.F.R. § 143.20(b) (2021).

[14] 42 U.S.C. § 300g-6(e)(1) (2021).

[15] *See* 62 Fed. Reg. 44684 (Aug. 22, 1997).

[16] SDWA Update, USEPA Amendments (January 1, 1998 through June 30, 1998), R99-6 (Feb. 4, 1999), slip op. at 5-6.

[17] SDWA Update, USEPA Amendments (July 1, 2018 through December 31, 2018), R19-16 (Apr. 16, 2020), slip op. at 12-17.

USEPA's new lead-free rule requires manufacturers and importers to certify their products before the latter of September 1, 2023, or when they introduce them into commerce.[18] Manufacturers or importers must have an accredited third-party certification or self-certify their products.[19] Certification requires the products to comply with USEPA's definition of "lead free," but does not require certification to a particular national standard. Although USEPA's discussion of the rule cites NSF/ANSI 372[20] several times,[21] the rule refers to the standard as an example in its definition of "accredited third party certification."[22]

This is convenient for the Board because USEPA's definition of "lead free" provides the standard and the method for determining compliance.[23] The definition of "accredited third party certification body" determines what entity (other than the manufacturer or importer) may provide the required certification. USEPA's rule specifies standards for records retention for certifications[24] and providing them to USEPA for inspection on request,[25] but it does not require that certified products bear any marks substantiating certification or that the manufacturer or importer make this information publicly available.[26]

**Incorporating USEPA's Lead-Free Fixtures Rule.** The Board incorporated USEPA's rule into the Illinois regulations with minimal deviation from USEPA's text. First, the Board replaced 35 Ill. Adm. Code 611.126[27] with the adapted text of subpart B of 40 C.F.R. 143. The Board omitted a counterpart to 40 C.F.R. § 143.14, which applies only to the State. Where

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[18] 40 C.F.R. § 143.19(a) (2021).

[19] 40 C.F.R. § 143.19(b) and (c) (2021). Small manufacturers and manufacturers and importers of custom-manufactured products may self-certify. 40 C.F.R. § 143.19(c) (2021).

[20] The successor to NSF 61, which USEPA endorsed in 1997.

[21] 85 Fed. Reg. 54235 (Sep. 1, 2023) (cited 24 times in discussion).

[22] 40 C.F.R. § 143.11 (2021).

[23] 40 C.F.R. § 143.12(b) through (f) (2021).

[24] 40 C.F.R. § 143.19(a) and (f) (2021).

[25] 40 C.F.R. § 143.19(b) and (f) (2021).

[26] The exception is that the self-certifying manufacturer or importer must post a certificate of conformity to a website or distribute it to end-use installers of the product. 40 C.F.R. § 143.19(d)(2) (2021).

[27] Formerly derived from 40 C.F.R. § 141.43(a) and (d) (2021) and section 1417 of SDWA (42 USC 300g-6(a)(1), (d), and (e) (2020)).

USEPA's rule provided for the Administrator to request records of certifications in 40 C.F.R. §§ 143.19(b) and 143.20(a), the Board rule provides for USEPA or the Illinois Environmental Protection Agency (Agency or IEPA) to request the records in corresponding 35 Ill. Adm. Code 611.126(j)(2) and (k)(2).

**Lead and Copper Rule Revisions**

USEPA extensively revised the LCR with the LCRR. Originally, USEPA assigned an effective date of March 26, 2021, and compliance date of January 26, 2024, to the LCRR.[28] Ultimately, USEPA delayed the effective date until December 16, 2021, and compliance date until October 16, 2024.[29]

Between the effective date and compliance date, the 2020 version of 40 CFR 141 would apply.[30]

The only aspect of the LCR not changed by the LCRR was the source water treatment requirements.[31] Although the LCRR changes the tap water, water monitoring quality, and source water monitoring schemes,[32] the laboratory analytical requirements remain unchanged.[33] The LCRR adds rules for testing tap water in schools,[34] adds small water system supplier flexibility options,[35] and expands reporting and recordkeeping to include new operational requirements.[36] Finally, the LCRR modified public information, outreach, education, and notice requirements

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[28] 86 Fed. Reg. 4198, 4282 (Jan. 15, 2021) (revising 40 C.F.R. § 141.80(a)(2) and (a)(3)).

[29] 40 C.F.R. § 141.80(a)(2) and (a)(3) (2021) (as revised at 86 Fed. Reg. 31939, 31947 (June 16, 2021). In an interim *Federal Register* notice, USEPA delayed the effective date until June 17, 2021 without revising the rule. 86 Fed. Reg. 14003 (Mar. 12, 2021).

[30] 40 C.F.R. § 141.80(a)(4)(i) (2021) (citing subpart I of 40 C.F.R. 141 (2020)).

[31] 40 C.F.R. § 141.83.

[32] *Compare* 40 C.F.R. §§ 141.86, 141.87, and 141.88 (2020) *with* 40 C.F.R. §§ 141.86, 141.87, and 141.88 (2021); *see* 86 Fed. Reg. at 4225-31.

[33] *Compare* 40 C.F.R. § 141.89 (2020) *with* 40 C.F.R. §§ 141.89 (2021).

[34] 40 C.F.R. § 141.92 (2021); *see* 86 Fed. Reg. at 4231-35.

[35] 40 C.F.R. § 141.93 (2021); *see* 86 Fed. Reg. at 4219-22.

[36] 40 C.F.R. §§ 141.90 and 141.91 (2021); *see* 86 Fed. Reg. at 4219-22.

and the mandatory health effects language for notices.[37] USEPA also added definitions of new terms. The discussion below includes a topical outline of the LCRR changes and concludes by considering the issues relating to incorporating the LCRR into Illinois rules.[38]

**The LCRR Changes.** The LCR aims to reduce consumption of lead in drinking water by two main avenues. The first is by reducing the amount of lead drinking water that leaches out of exposed plumbing. The second is by reducing the amount of lead introduced through source water. However, source water can play a significant role in lead leaching from plumbing when it is aggressive.

The LCR seeks to reduce lead leaching into consumed water in two ways. First, it seeks to make distributed water less aggressive and adding chemicals to passivate plumbing. The water builds a coating inside plumbing that protects lead from leaching. The second removes lead service connections. The LCR provides for replacing lead service lines (LSLs), depending on supplier- and consumer-specific considerations.

The LCR provides three main monitoring regimens to establish compliance and determine corrective action. The first monitors the presence of lead and copper in customers' tap water. The second monitors water quality parameters at customers' taps. The third monitors source water quality at entry points to the supplier's distribution system.

The LCR has several rules pertaining to information. It includes recordkeeping and reporting provisions, rules requiring public availability of information, and public notification requirements.

The LCRR extensively changed many requirements of the LCR, affecting source water treatment the least. The LCRR seeks to increase the rate of replacing LSLs, enhances public disclosure and reporting information relating to lead in drinking water, and increases emphasis on the water children consume. Brief descriptions of the changes follow.

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[37] 40 C.F.R. §§ 141.80(g); 141.84(a)(6), (a)(8), (f)(5)(i); 141.85; 141.86(i); 141.92(a); and 141.93(a)(3)(v) and appendices A, ¶ C.2, and B, ¶ D.23, to subpart Q of 40 C.F.R. 141; *see* 86 Fed. Reg. at 4201, 4204, 4220-25, 4231-4234, 4239.

[38] USEPA concluded its review of the LCRR late in 2021. Although it determined that further changes are necessary, it decided not to delay implementing the rule. 86 Fed. Reg. 71574 (Dec. 17, 2021). USEPA announced that it was undertaking Lead and Copper Rule Improvements (LCRI), to change the LCRR and identified specific areas of concern. 86 Fed. Reg. at 71578-79. In late 2022, USEPA began seeking public input for the LCRI. Economic and environmental justice issues relating to replacing LSLs are a major emphasis of the LCRI. USEPA plans final action before the end of 2024. 87 Fed. Reg. 61269 (Oct. 11, 2022).

***Lead Service Line Inventory and Replacement.*** The LCRR changes the scheme for identifying and replacing LSLs. The LCRR requires a supplier to pursue this more rigorously.

***LCR Requirements.*** The LCR required suppliers to identify LSLs on their distribution systems[39] and annually replace seven percent of the LSLs on a 15-year replacement program.[40] The supplier incurred this obligation if its tap water monitoring results exceeded the lead action level[41] after the supplier installed source water treatment.[42] The supplier did not need to replace the LSL for any customer whose individual sampling result was less than 0.015 mg/ℓ.[43] The supplier was required to replace only that portion of the LSL it owned and to offer to replace the customer-owned portion at the customer's expense.[44]

***LCRR Requirements.*** The LCRR requires suppliers to develop an inventory of all service lines connected to their distribution systems.[45] The LCRR expanded the list of information sources the supplier must review to assemble its inventory.[46] The supplier's inventory must classify each service line as "lead," "galvanized requiring replacement,"[47] "non-

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[39] 40 C.F.R. § 141.84(b)(1)(iii) (2020).

[40] 40 C.F.R. § 141.84(b) (2020). The State could impose a shorter schedule upon determining it is feasible. 40 C.F.R. § 141.84(e) (2020).

[41] The lead action level of 0.015 mg/ℓ is statistically based on the lead concentrations in the 90$^{th}$ percentile sample of tap samples the supplier collected. 40 C.F.R. § 141.80(a) and (c) (2020) (definition and method for computing). If the lead concentration in the 90$^{th}$ percentile sample exceeds 0.015 mg/ℓ, the supplier exceeds the lead action level.

[42] 40 C.F.R. § 141.84(a)(1) (2020).

[43] 40 C.F.R. § 141.84(e) and (f)(1)(i) (2020). This is on the basis of the individual sample lead concentration, not based on the lead action level.

[44] 40 C.F.R. § 141.84(d) (2020).

[45] 40 C.F.R. §§ 141.80(f) and 141.84(a) (2021).

[46] Compare 40 C.F.R. § 141.84(b)(1)(iii) (2021) with 40 C.F.R. § 141.84(a)(3) (2020). The supplier must further track the materials of service lines as it encounters them in normal operations. 40 C.F.R. § 141.84(a)(5) (2021).

[47] Any galvanized service line downstream of a LSL or "lead status unknown" service line. 40 C.F.R. § 141.84(a)(4)(ii) (2021). These adsorb lead and contribute to lead in drinking water. 86 Fed. Reg. 4198, 4215 (Jan. 15, 2021).

lead" or "lead status unknown."[48] Suppliers must continually update their service line inventories, submit them to the State, and make them publicly available.[49]

If a supplier serves customers through lead, galvanized requiring replacement, or lead status unknown service lines, it must inform customers of that fact.[50] Suppliers must also notify customers served through these service lines if the supplier exceeds the lead trigger level.[51]

Suppliers must assemble a LSL replacement plan for State approval. The plan must include strategies for prioritizing LSL replacements, determining the composition of its lead status unknown service lines, and informing customers before replacing LSLs.[52] The plan must include procedures for conducting full LSL replacements and for customers to flush service lines of lead.[53] Suppliers serving more than 10,000 persons must recommend a replacement goal rate if the supplier exceeds the lead trigger level.[54] Finally, the plan must include a strategy for funding LSL replacements, including the customer-owned portion for those unable to pay,[55] although the supplier is still not required to pay to replace the customer-owned portion.[56]

The LCRR includes LSL replacement requirements for a supplier serving more than 10,000 persons. If the supplier's 90th percentile lead concentration exceeds the lead trigger level[57] but not the lead action level, the supplier must complete goal-based LSL replacement on a State-approved schedule.[58] If its 90th percentile lead concentration exceeds the lead action level,

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[48] 40 C.F.R. § 141.84(a)(4), (a)(8), and (a)(10) (2021).

[49] 40 C.F.R. § 141.84(a)(6) (2021).

[50] 40 C.F.R. § 141.80(g)(4) (2021).

[51] 40 C.F.R. § 141.80(g)(2) (2021).

[52] 40 C.F.R. § 141.84(b)(1), (b)(3), and (b)(6) (2021).

[53] 40 C.F.R. § 141.84(b)(2) and (b)(5) (2021).

[54] 40 C.F.R. § 141.84(b)(4) (2021).

[55] 40 C.F.R. § 141.84(b)(7) (2021).

[56] 40 C.F.R. § 141.84(d)(1) (2021); *see* 141.84(c)(2) (2021) (customer-owned lead goosenecks, pigtails, or connectors).

[57] The lead trigger level, 0.010 mg/ℓ, like the lead action level, is based on the 90$^{th}$ percentile lead concentration. 40 C.F.R. § 141.80(c)(1) (2021).

[58] 40 C.F.R. § 141.80(f) (2021).

it must complete mandatory full LSL replacement at the rate of three percent per year on a biennially determined annual rate.[59] A supplier providing water to fewer than 10,000 persons must pursue mandatory LSL replacement if the State chooses that as a compliance option under the small system compliance flexibility rule.[60]

The base number for determining the required number of LSL replacements depends on the number of lead, galvanized requiring replacement, and lead status unknown service lines on the supplier's distribution system when it first exceeded the lead action level or lead trigger level. Subsequently, the supplier must annually update its base number by subtracting the number of lead status unknown service lines it determined are non-lead, and adding the number of non-lead service lines determined to be lead or galvanized requiring replacement.[61]

Only fully replacing lead and galvanized service lines on its distribution system counts towards the supplier's number of replacements.[62] The supplier cannot count in its total replacing a lead gooseneck, pigtail, or connector; partially replacing a LSL; or determining a lead status unknown service line as non-lead.[63]

If a supplier pursuing goal-based service line replacement fails to achieve its goal in replacing LSLs, it must conduct public outreach activities and continue replacing LSLs until it meets its replacement goal or its 90th percentile concentration does not exceed the lead trigger level during two continuous years of monitoring.[64]

A supplier performing mandatory LSL replacement may stop replacing service lines after cumulatively replacing the required number. That required number is at least three percent of the base number times the number of years since the supplier began mandatorily replacing service lines or when monitoring demonstrates the supplier's 90th percentile concentration is below the lead action level for two consecutive years.[65] Alternatively, if the supplier has no remaining lead status unknown service lines in its inventory, and it has documented refusals or non-responses to

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[59] 40 C.F.R. § 141.80(g) (2021). The State may require a supplier to replace service lines on a shorter schedule upon determining that this is feasible. 40 C.F.R. § 141.80(g)(9) (2021).

[60] 40 C.F.R. § 141.84(g)(5) (2021).

[61] 40 C.F.R. § 141.84(a)(7) (2021).

[62] 40 C.F.R. § 141.84(f)(3) and (g)(3) (2021).

[63] 40 C.F.R. § 141.84(c)(4), (a)(7)(i), (f)(3), (g)(3), and (g)(7)(iii) (2021).

[64] 40 C.F.R. § 141.84(f)(5) and (g)(3) (2021).

[65] 40 C.F.R. § 141.84(g)(6) (2021).

an offer to replace the customer-owned portion (at customer expense) from all customers still having LSLs, it may also cease mandatory replacements.[66]

The LCRR prescribes procedures for full LSL replacements, partial LSL replacements, and replacing lead goosenecks, pigtails, and connectors. The procedures differ due to the different risks involved and the divided ownership between the supplier and the customer.

For a full LSL replacement, in addition to any notifications under Section 611.354(b)(3), the supplier must notify the customer within 24 hours after completing the replacement.[67] The notice must warn that building occupants could experience elevated lead in their water, inform about health effects of lead consumption, and explain actions to minimize exposure to lead.[68] The supplier must provide the consumer with a pitcher filter or point-of-use device and a six-month supply of replacement cartridges.[69] The supplier must also offer to retest the customer's tap for lead three to six months after the replacement.[70]

For a partial LSL replacement, the supplier must notify the customer at least 45 days before replacing the line. The notice must explain that the supplier is replacing its portion of the service line and offer to replace the customer's portion at the customer's expense.[71] Before returning the service line to service, the supplier must notify the customer, provide a pitcher filter or point-of-use device, and offer follow-up testing.[72] For an emergency repair partially replacing a LSL, the supplier must notify the customer and provide mitigation measures before returning the line to service.[73]

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[66] The customer refusal may be verbal if documented and non-responses require two documented attempts to contact the customer. 40 C.F.R. § 141.84(g)(7) (2021).

[67] The supplier may notify the owner's authorized agent. The owner must also notify non-owner residents that the service line serves. 40 C.F.R. § 141.84(e) (2021).

[68] 40 C.F.R. § 141.84(e)(1) (2021). Also informing about flushing of the service line before returning the service line to service. 40 C.F.R. § 141.84(e)(2) (2021).

[69] The device must include appropriate instructions for use. The rule also addresses residents of a multiple-unit building. 40 C.F.R. § 141.84(e)(3) (2021).

[70] 40 C.F.R. § 141.84(e)(4) (2021).

[71] 40 C.F.R. § 141.84(d)(1) (2021).

[72] 40 C.F.R. § 141.84(d)(1)(i) through (d)(1)(iv) (2021).

[73] 40 C.F.R. § 141.84(d)(2) (2021).

If the customer notifies the supplier that it plans to replace the customer-owned portion of the service line, the supplier must coordinate simultaneously replacing the two halves of the service line or replace the supplier-owned portion within 45 days after the customer has completed replacing its portion.[74] If the supplier becomes aware of the customer replacing the customer-owned portion after the fact, the 45 days runs from when the supplier becomes aware of the fact.[75] If more than six months pass between the customer replacing its portion of the service line and the supplier becoming aware of that fact, the supplier needs not replace the supplier-owned portion.[76]

A supplier must replace any lead gooseneck, pigtail, or connector it owns and encounters while performing infrastructure work.[77] The supplier must offer to replace any customer-owned portion at customer's expense and may not replace that portion if the customer objects.[78] The supplier must follow risk mitigation procedures when replacing the gooseneck, pigtail, or connector.[79]

***Corrosion Control Treatment.*** Corrosion control seeks to achieve optimal corrosion control treatment (OCCT):

> *Optimal corrosion control treatment* . . . means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring [sic] that the treatment does not cause the water system to violate any national primary drinking water regulations. 40 C.F.R. § 141.2 (2021) (definition).

The LCRR made the corrosion control treatment requirements more rigorous.

***LCR Requirements.*** The LCR required suppliers to apply OCCT to avoid leaching lead from plumbing.

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[74] If the supplier fails to do so, it must notify the State within 30 days of the failure. The supplier must complete replacing the service line no later than 180 days after the customer completed its work. 40 C.F.R. § 141.84(d)(4) (2021).

[75] 40 C.F.R. § 141.84(d)(4) (2021).

[76] But the supplier must count that service line as "lead" in its inventory. 40 C.F.R. § 141.84(d)(5) (2021).

[77] 40 C.F.R. § 141.84(c)(1) (2021).

[78] 40 C.F.R. § 141.84(c)(2) and (c)(3) (2021).

[79] 40 C.F.R. § 141.84(c)(5) (2021).

The LCR deemed a small-[80] or medium-sized[81] supplier to have OCCT if it met the lead and copper action levels[82] during two consecutive six-month monitoring periods.[83] The LCR also addressed any sized supplier for whom monitoring results over two consecutive six-month monitoring periods indicate a difference between the highest single source water sample and the 90th percentile sample is less than the PQL.[84] The LCR provided that the State could deem a supplier as having OCCT upon determining the supplier completed the steps for optimizing corrosion control. The written notice the State provides the supplier must prescribe water quality parameters the State deems represent OCCT.[85]

Any supplier not deemed to have OCCT must complete corrosion control treatment.[86] This involved corrosion control studies and completing certain corrosion control treatment steps unless deemed to have OCCT.

*Large-Sized Suppliers.* A large-sized supplier not deemed to have OCCT was to complete corrosion control steps within specified deadlines:

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[80] Serving up to 3,300 persons. 40 C.F.R. § 141.81(a)(2) (2020).

[81] Serving 3,301 to 50,000 persons. *Id*.

[82] The basis for each is the 90th percentile concentration from monitoring results. The lead action level is 0.015 mg/ℓ (15 µg/ℓ). 40 C.F.R. § 141.80(c)(1) (2020). The copper action level is 1.3 mg/ℓ. 40 C.F.R. § 141.81(c)(2) (2020).

[83] 40 C.F.R. § 141.81(b)(1) (2020).

[84] 40 C.F.R. § 141.81(b)(3) (2020). A supplier whose highest source water lead level is less than the PQL if its 90$^{th}$ percentile lead level is also less than the PQL. 40 C.F.R. § 141.81(b)(3)(i) (2020). The PQL for lead is 0.005 mg/ℓ (5 µg/ℓ). 40 C.F.R. § 141.89(a)(1)(ii)(A) (2020). Any supplier this rule deems to have OCCT must continue to monitor water quality parameters and tap water for lead and copper at least triennially and biannually report the results to the State. 40 C.F.R. § 141.81(b)(3)(ii) (2020). A supplier exceeding the copper action level is not deemed to have OCCT and must undertake corrosion control treatment. 40 C.F.R. § 141.81(b)(3)(iv) and (b)(3)(v) (2020).

[85] 40 C.F.R. § 141.81(b)(2) (2020). Any supplier the State deems to have OCCT must continue to monitor water quality parameters and tap water for lead and copper at least triennially and biannually report the results to the State. *Id*.

[86] 40 C.F.R. § 141.82(a) (2020).

Step 1: Initial tap water monitoring with two consecutive six-month periods before January 1, 1993.[87]

Step 2: Corrosion control studies completed before July 1, 1994.[88]

Step 3: State designates OCCT before January 1, 1995.[89]

Step 4: Supplier installs OCCT before January 1, 1997.[90]

Step 5: Supplier completes follow-up monitoring before January 1, 1998.[91]

Step 6: State reviews supplier's installed OCCT before July 1, 1997.[92]

Step 7: Supplier operates under OCCT with ongoing monitoring before July 1, 1997.[93]

*Small- and Medium-Sized Suppliers.* As cited above,[94] the rule deems a small or medium-sized supplier to have OCCT if it does not exceed the lead or copper action level for two monitoring cycles. After that, a small or medium-sized supplier needs only undertake corrosion control steps after it exceeds the lead or copper action level. Then, the supplier was to resume at the last step not previously completed.[95] For a small or medium-sized supplier, the rule adds a new Step 2, renumbering all subsequent steps:

Step 1: Initial tap water monitoring.[96]

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[87] 40 C.F.R. § 141.81(d)(1) (2020).

[88] 40 C.F.R. § 141.81(c)(2) (2020).

[89] 40 C.F.R. § 141.81(c)(3) (2020).

[90] 40 C.F.R. § 141.81(c)(4) (2020).

[91] 40 C.F.R. § 141.81(c)(5) (2020).

[92] 40 C.F.R. § 141.81(c)(6) (2020).

[93] 40 C.F.R. § 141.81(c)(7) (2020).

[94] *See supra* note 83 and accompanying text.

[95] 40 C.F.R. § 141.81(c) (2020). The State could require the supplier to complete steps previously completed. *Id*.

[96] Until the supplier either exceeds an action level or qualifies for reduced monitoring. If exceeding an action level, the supplier was to recommend OCCT to the State. 40 C.F.R. § 141.81(e)(1) (2020).

Step 2: State requires corrosion control studies or designates OCCT.[97]

Step 3: Supplier completes corrosion control studies.[98]

Step 4: State designates OCCT.[99]

Step 5: Supplier installs OCCT.[100]

Step 6: Supplier completes follow-up monitoring.[101]

Step 7: State reviews supplier's installed OCCT.[102]

Step 8: Supplier operates under OCCT with ongoing monitoring.[103]

The LCR required suppliers to recommend corrosion control treatments for State consideration.[104] The State then requires corrosion control studies to determine OCCT.[105] The LCR offered three options for corrosion control: (1) adjusting alkalinity and pH of the supplier's finished water; (2) adjusting calcium hardness of the finished water; or (3) adding a phosphate- or silicate-based corrosion inhibitor to the water.[106] Corrosion control studies can involve research into what has worked under similar circumstances and testing using the supplier's finished water.[107] The supplier was to monitor several parameters relating to aggressiveness of

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[97] Require corrosion control studies within a year after a monitoring period exceeding an action level. Designate OCCT for a medium-sized supplier within 18 months or 24 months for a small supplier. 40 C.F.R. § 141.81(e)(2) (2020).

[98] Within 18 months after the State requires them. 40 C.F.R. § 141.81(e)(3) (2020).

[99] Within six months after Step 3 is complete. 40 C.F.R. § 141.81(e)(4) (2020).

[100] Within 24 months after State designated OCCT. 40 C.F.R. § 141.81(e)(5) (2020).

[101] Within 36 months after State designated OCCT. 40 C.F.R. § 141.81(e)(6) (2020).

[102] Within 6 months after the supplier completes follow-up sampling. 40 C.F.R. § 141.81(e)(7) (2020).

[103] 40 C.F.R. § 141.81(e)(8) (2020).

[104] 40 C.F.R. § 141.82(a) (2020).

[105] 40 C.F.R. § 141.82(b) (2020).

[106] 40 C.F.R. § 141.82(c)(1) (2020).

[107] 40 C.F.R. § 141.82(c)(2) (2020).

its water: lead, copper, pH, alkalinity, calcium, conductivity, water temperature, and orthophosphate or silicate if the supplier uses an inhibitor.[108]

The supplier must recommend OCCT to the State based on the results of the corrosion control studies and other available information, providing a written rationale to the State.[109] The State may either accept the supplier's recommendation or designate an alternative OCCT, considering the results of the corrosion control studies and the effects on the supplier's water.[110] The State must give its determination and provide its rationale in writing. The determination must give a range of concentrations and values representing optimum water quality parameters (OWQPs) constituting OCCT in its determination.[111] The supplier must operate within the requirements of its OCCT.[112]

The LCR provides that the State may modify its determination of OCCT on its own motion, on request of the suppliers, or on request of an "other interested party." The supplier or interested party must make its request in writing, and the State must give its decision in writing.[113] USEPA can review a State's determination and render its own if the State has failed to make a determination within applicable deadlines, the State abused its discretion making its determination, or USEPA believes that "technical aspects of a State's determination would be indefensible in an expected Federal enforcement action."[114]

***LCRR Requirements.*** The LCRR revised the corrosion control treatment rules, although corrosion control treatment requirements are essentially similar. The LCRR adds a "lead trigger level" based on the 90th percentile lead concentration.[115] The lead trigger level is lower than the lead action level.[116] Exceeding the lead trigger level prompts specific actions under the LCRR, as discussed below.

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[108] 40 C.F.R. § 141.82(c)(3) (2020).

[109] 40 C.F.R. § 141.82(c)(4) through (a)(6) (2020).

[110] 40 C.F.R. § 141.82(d)(1) (2020).

[111] 40 C.F.R. § 141.82(f) (2020).

[112] 40 C.F.R. § 141.82(g) (2020).

[113] 40 C.F.R. § 141.82(h) (2020).

[114] 40 C.F.R. § 141.82(i) (2020).

[115] USEPA shifted the term "90th percentile level" to "90th percentile lead concentration." *Compare* 40 C.F.R. § 141.80(c)(3)(iii) (2020) *with* 40 C.F.R. § 141.80(c)(4) (2021).

[116] The lead trigger level is 10 µg/L (0.010 mg/ℓ). 40 C.F.R. § 141.80(c)(1) (2021).

The LCRR still distinguishes between large-sized suppliers and small- and medium-sized suppliers.[117] The LCRR further distinguishes small-sized suppliers from medium-sized suppliers. It also distinguishes suppliers having corrosion control treatment and those that do not.

*Suppliers Deemed to Have OCCT.* The LCRR deems to have optimized corrosion treatment for any sized supplier for whom the State has not determined OCCT and whose monitoring results over two consecutive six-month monitoring periods do not exceed the copper action level and indicate a 90th percentile lead concentration less than the PQL.[118] The supplier must continue monitoring tap water for lead and copper no less frequently than triennially.[119] The supplier is no longer deemed to have OCCT if its subsequent monitoring exceeds the lead PQL or copper action level until after completing corrosion control steps.[120]

The LCRR deems a small- or medium-sized supplier without corrosion control treatment to have OCCT if its monitoring results for two consecutive six-month "tap sampling monitoring periods"[121] do not exceed the lead action level or copper action level, and the supplier's results remain below the lead trigger level and copper action level in all subsequent monitoring results.[122]

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[117] Both still defined as serving the same numbers of persons. USEPA, however, added a formal definition of "medium-size water system." 40 C.F.R. § 141.2 (2021); 86 Fed. Reg. at 4294. USEPA parenthetically defined "large water systems," "medium size water systems," and "small water system" in its substantive corrosion treatment rules. 40 C.F.R. § 141.81(a)(1), (a)(2), and (a)(3) (2021). USEPA defined "small community water systems" in its substantive small system compliance flexibility options rule, 40 C.F.R. § 141.93 (2021). The Board sees a distinction between the terms "small water systems" and "small community water systems."

[118] 40 C.F.R. § 141.81(b)(3) (2021). The rule states the PQL is 0.005 mg/ℓ (5 µg/ℓ). *Id*.

[119] 40 C.F.R. § 141.81(b)(3)(ii) (2021).

[120] *Id*. This would culminate in the State designating OCCT. *See* 40 C.F.R. § 141.81(d)(7) and (e)(7) (2021).

[121] USEPA added this term and "tap sampling period," defining both. *See* 40 C.F.R. § 141.2 (2021). To clarify the separate terms, the Board has changed them to "tap monitoring cycle" and "tap sampling period," respectively.

[122] 40 C.F.R. § 141.81(b)(1) (2021).

The LCRR deems a small- or medium-sized supplier with corrosion control treatment to have OCCT if its monitoring results for two consecutive six-month "monitoring periods"[123] do not exceed the lead trigger level or copper action level, and the supplier's results remain below the lead trigger level and copper action level in all subsequent monitoring results. The LCRR deems a small- or medium-sized supplier with corrosion control treatment exceeding the lead trigger level to have reoptimized OCCT if its monitoring results for two consecutive monitoring periods subsequently remain below the lead and copper action levels.[124]

A supplier deemed to have OCCT with corrosion control treatment in place must continue maintaining and operating that treatment. The supplier must further meet any additional conditions the State imposes to ensure maintaining OCCT.[125]

*Suppliers Undertaking Corrosion Control Treatment.* A large-sized supplier with corrosion control treatment exceeding the lead trigger level or copper action level must complete a first set of corrosion control steps and optimize or reoptimize its corrosion control.[126] The State may require a large supplier exceeding the lead PQL[127] but not the lead trigger level or copper action level having corrosion control to undertake the first set of corrosion control steps.[128] A large-sized supplier exceeding the lead PQL or copper action level without corrosion control must undertake a second set of corrosion control steps.[129]

A medium-sized supplier not having corrosion control exceeding the lead or copper action level must complete the first set of corrosion control steps.[130] A medium-sized supplier not having corrosion control treatment exceeding the lead or copper action level must complete the second set of corrosion control steps. A medium-sized supplier not having corrosion control

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[123] This term shifts from "tap sampling monitoring period."

[124] 40 C.F.R. § 141.81(b)(2) (2021).

[125] 40 C.F.R. § 141.81(b) (2021).

[126] 40 C.F.R. § 141.81(a)(1)(i) (2021).

[127] Based on the 90th percentile level and given as 0.005 mg/ℓ in the substantive rule. 40 C.F.R. § 141.81(a)(1)(ii) (2021). However, USEPA defines the PQL functionally, based on analytical capabilities, in a new definition, not assigning a specific concentration to the term. 40 C.F.R. § 141.2 (2021).

[128] 40 C.F.R. § 141.81(a)(1)(iii) (2021).

[129] 40 C.F.R. § 141.81(a)(1)(ii) (2021).

[130] 40 C.F.R. § 141.81(a)(2)(i) (2021).

treatment exceeding the lead trigger level but not the copper action level must pursue Step 1 of the second set of corrosion control steps.[131] It must follow through and complete the entire second set upon subsequently exceeding the lead or copper action level.[132]

A small-sized supplier or non-transient, non-community water system (NTNCWS)[133] with corrosion control exceeding the lead trigger level or lead action level but not the copper action level must complete the first set of corrosion control treatment steps if the State determines this as a small system supplier compliance option.[134] A small-sized or NTNCWS supplier with corrosion control exceeding the copper action level must complete the first set of corrosion control steps.[135] A small-sized or NTNCWS supplier without corrosion control exceeding the lead action level must complete the second set of corrosion control steps if the State determines this as a small system supplier compliance option.[136] A small-sized or NTNCWS supplier without corrosion control exceeding the copper action level must complete the second set of corrosion control steps.[137]

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[131] 40 C.F.R. § 141.81(a)(2)(ii) (2021).

[132] 40 C.F.R. § 141.81(a)(2)(iii) (2021).

[133] Defined as a supplier serving at least 25 persons at least six months of the year that is not a community water system. 40 C.F.R. § 141.2 (2021). A community water system provides water to 25 or more persons through 15 or more service connections on a year-round basis. *Id*. The Department of Public Health (DPH) regulates NTNCWS suppliers. *See* 77 Ill. Adm. Code 900.20 (2020); *see also* 77 Ill. Adm. Code 900.10 (2020) (definitions). The Board has a history of including rules applicable to NTNCWS suppliers for the convenience of the Department of Public Health's use. Safe Drinking Water Act Update, Phase II and Coliform Rules (July 1, 1990 through January 31, 1991), R91-3, Safe Drinking Water Act Phase I Corrections, R92-9 (Nov. 19, 1992) (consol.), slip op. at 23; Safe Drinking Water Act Update, Lead and Copper Rules Corrections (January 1, 1994 through June 30, 1994), R94-23, Safe Drinking Water Act Update, Phase II, IIB, and V Corrections and Analytical Methods Amendments (July 1, 1994 through December 31, 1994), R95-3 (June 15, 1995) (Consol.), slip op. at 8-9; *see* 77 Ill. Adm. Code 900.15(b)(2) (2020).

[134] 40 C.F.R. § 141.81(b)(3)(i) (2021).

[135] 40 C.F.R. § 141.81(b)(3)(ii) (2021).

[136] 40 C.F.R. § 141.81(b)(3)(iii) (2021).

[137] 40 C.F.R. § 141.81(b)(3)(iv) (2021).

The first set of corrosion control treatment steps applies to suppliers with corrosion control treatment seeking to reoptimize their OCCT.[138] The second applies to suppliers without corrosion control treatment seeking to determine OCCT.[139] There is a third, less rigorous set of corrosion control treatment steps for small community water system (CWS) suppliers pursuing OCCT as a small supplier compliance flexibility alternative.[140]

*Reoptimizing OCCT.* Steps for suppliers having corrosion control treatment:

Step 1 (if exceeding the lead trigger level but not the lead action level):
Supplier recommends reoptimized OCCT to the State.[141]
Alternative 1: State designates reoptimized OCCT.[142]
Alternative 2: State modifies the supplier's corrosion control treatment without study.[143]
Supplier implements OCCT.[144]

Step 1 (if exceeding the lead action level and having LSLs)[145]:
Supplier pipe-loop tests its finished water on lead pipes harvested from its distribution system.[146] The supplier proceeds to Step 3 using its pipe loops.

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[138] 40 C.F.R. § 141.81(d) (2021).

[139] 40 C.F.R. § 141.81(e) (2021).

[140] 40 C.F.R. § 141.81(f) (2021).

[141] Within six months after the tap sampling period during which it exceeded the lead trigger level or copper action level. 40 C.F.R. § 141.81(d)(1)(i) (2021); *see* 40 C.F.R. § 141.82(a)(1) and (a)(5) (2021).

[142] Within six months after the supplier's recommendation. 40 C.F.R. § 141.81(d)(1)(i) (2021); *see* 40 C.F.R. § 141.82(d)(2) (2021).

[143] If the supplier exceeded the lead trigger level but not the copper action level. 40 C.F.R. § 141.81(d)(1)(i) (2021).

[144] Within six months of the State's designation. 40 C.F.R. § 141.81(d)(1)(i) (2021).

[145] 40 C.F.R. § 141.81(d)(1)(ii) (2021).

[146] Within one year after the tap sampling period during which the supplier exceeded the lead action level.

Step 2 (large-sized suppliers):
Supplier conducts corrosion control studies under Step 3 if the State did not modify its corrosion control treatment under Step 1.[147]

Step 2 (small- and medium-sized suppliers)[148]:
Alternative 1: State requires corrosion control studies.[149]
Alternative 2: State determines OCCT.[150]

Step 3: Supplier completes corrosion control studies.[151]

Step 4: State designates OCCT.[152]

Step 5: Supplier installs reoptimized OCCT.[153]

Step 6: Supplier completes follow-up sampling.[154]

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[147] 40 C.F.R. § 141.81(d)(2)(i) (2021); *see* 40 C.F.R. § 141.82(b) (2021).

[148] 40 C.F.R. § 141.81(d)(2)(ii) (2021); *see* 40 C.F.R. § 141.82(b) (2021).

[149] Under 40 C.F.R. § 141.82(c) (2021); *see* 40 C.F.R. § 141.82(b) (2021).

[150] Within a year after the tap sampling period when supplier exceeded the lead trigger level or copper action level. 40 C.F.R. § 141.81(d)(2)(ii)(A) (2021). Within 18 months after the tap sampling period. 40 C.F.R. § 141.81(d)(2)(ii)(B) (2021).

[151] Within 30 months after the tap sampling period. 40 C.F.R. § 141.81(d)(3)(i) (2021); *see* 40 C.F.R. § 141.82(c) (2021). Within 18 months after the State requires the studies under Step 2. 40 C.F.R. § 141.81(d)(3)(ii) (2021); *see* 40 C.F.R. § 141.82(c) (2021).

[152] Within six months after the supplier completes the corrosion control studies. 40 C.F.R. § 141.81(d)(4)(i) and (d)(4)(ii) (2021); *see* 40 C.F.R. § 141.82(d) (2021). The LCRR distinguishes between suppliers required to perform corrosion control studies under Step 1 and those required under Step 2, but both require State action within six months. *Compare* 40 C.F.R. § 141.81(d)(4)(i) (2021) *with* 40 C.F.R. § 141.81(d)(4)(ii) (2021).

[153] Within a year after the State designates OCCT. 40 C.F.R. § 141.81(d)(5)(i) (2021); *see* 40 C.F.R. § 141.82(e) (2021). The LCRR maintains the distinction made in Step 4, but both require a year. The distinction at Step 5 is between large-sized suppliers, on the one hand, and small- and medium-sized suppliers on the other. *Compare* 40 C.F.R. § 141.81(d)(5)(i) (2021) *with* 40 C.F.R. § 141.81(d)(5)(ii) (2021).

[154] Within a year after installing reoptimized OCCT. 40 C.F.R. § 141.81(d)(6) (2021).

Step 7: State reviews corrosion control treatment, designates reoptimized OCCT, and designates water quality parameters.[155]

Step 8: Supplier operates reoptimized OCCT.[156]

*Optimizing OCCT.* Steps for suppliers not having corrosion control treatment:

Step 1 (if exceeding the lead trigger level or copper action level)[157]:
Supplier recommends OCCT to the State.[158]
Step 1 (if exceeding the lead action level and having LSLs)[159]:
Supplier pipe-loop tests its finished water on lead pipes harvested from its distribution system.[160] The supplier proceeds to Step 3 using its pipe loops.
Step 1 (large-sized suppliers exceeding the lead PQL or copper action level)[161]:
Supplier conducts corrosion control studies under Step 3.

Step 2[162]:
Alternative 1: State requires corrosion control studies.[163]
Alternative 2: State specifies OCCT.[164]

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[155] Within six months after the supplier completes follow-up sampling. 40 C.F.R. § 141.81(d)(7) (2021); *see* 40 C.F.R. § 141.82(f) (2021).

[156] Continuing tap water quality and water quality parameter testing. 40 C.F.R. § 141.81(d)(8) (2021); *see* 40 C.F.R. § 141.82(g) (2021).

[157] 40 C.F.R. § 141.81(e)(1)(i) (2021).

[158] Within six months after the tap sampling period during which it exceeded the lead trigger level or copper action level. 40 C.F.R. § 141.81(e)(1)(i) (2021); *see* 40 C.F.R. § 141.82(a) (2021).

[159] 40 C.F.R. § 141.81(e)(1)(ii) (2021).

[160] Within one year after the tap sampling period during which the supplier exceeded the lead action level. 40 C.F.R. § 141.81(e)(1)(ii).

[161] Suppliers not having corrosion control directed to corrosion control studies under 40 C.F.R. § 141.81(a)(1)(ii). 40 C.F.R. § 141.81(e)(1)(iii) (2021).

[162] 40 C.F.R. § 141.81(e)(2) (2021).

[163] Within a year after the tap sampling period when supplier exceeded the lead or copper action level. *Id*.

[164] Within 18 months after the tap sampling period when medium-sized supplier exceeded the

Step 3: Supplier completes corrosion control studies.[165]

Step 4: State designates OCCT.[166]

Step 5: Supplier installs optimized OCCT.[167]

Step 6: Supplier completes follow-up sampling.[168]

Step 7: State reviews the corrosion control treatment, designates optimized OCCT, and designates water quality parameters.[169]

Step 8: Supplier operates redesignated OCCT.[170]

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lead trigger level or copper action level. 40 C.F.R. § 141.81(e)(2)(i) (2021). Within two years after the tap sampling period when small-sized supplier exceeded the lead trigger level or copper action level. 40 C.F.R. § 141.81(e)(2)(ii) (2021).

[165] Within 30 months after the tap sampling period for large-sized suppliers and small- and medium-sized suppliers having service lines exceeding the lead action level. 40 C.F.R. § 141.81(e)(3)(i) (2021); *see* 40 C.F.R. § 141.82(c) (2021). Within 18 months after the State requires the studies under Step 2. 40 C.F.R. § 141.81(e)(3)(ii) (2021).

[166] Within six months after the supplier completes the corrosion control studies. 40 C.F.R. §§ 141.81(e)(4)(i) and (e)(4)(ii) (2021); *see* 40 C.F.R. § 141.82(d) (2021). USEPA's rule in 40 C.F.R. § 141.81(e)(4)(i) cites to corrosion control studies under "§ 141.82(d)(3)" and "paragraph (d)(3)(i) of this section." These are apparent errors. LCRR has no 40 C.F.R. § 141.82(d)(3), and 40 C.F.R. § 141.81(e)(3)(i) appears irrelevant to a supplier not having corrosion control treatment. The Board corrects these citations to "subsection (e)(3)" and "subsection (e)(3)(A)," respectively. The LCRR distinguishes between suppliers required to perform corrosion control studies under Step 2 and those required under Step 3, but both require State action within six months. *Compare* 40 C.F.R. § 141.81(e)(4)(i) (2021) *with* 40 C.F.R. § 141.81(e)(4)(ii) (2021).

[167] Within one year after installing OCCT. 40 C.F.R. § 141.81(e)(5) (2021); *see* 40 C.F.R. § 141.82(e) (2021). The LCRR maintains the distinction made in Step 4, but both require two years.

[168] Within six months after installing reoptimized OCCT. 40 C.F.R. § 141.81(e)(6) (2021).

[169] Within six months after the supplier completes follow-up sampling. 40 C.F.R. § 141.81(e)(7) (2021); *see* 40 C.F.R. § 141.82(f) (2021).

[170] Continuing tap water quality and water quality parameter testing. 40 C.F.R. § 141.81(e)(8) (2021); *see* 40 C.F.R. § 141.82(g) (2021).

*Small-Sized Supplier Compliance Flexibility Option.* Steps for small-sized CWS and NTNCWS suppliers electing corrosion control treatment as a small system compliance flexibility option[171]:

Step 1: Supplier recommends OCCT to the State.[172]

Step 2: State approves corrosion control as a small system compliance flexibility option.

The procedure then follows the appropriate schedule of the first or second set of corrosion control steps described above, beginning at Step 3.[173]

*Find-and-Fix Assessment.* The find-and-fix assessment rule addresses individual or clusters of tap samples exceeding the lead action level.[174] For a tap sample exceeding the lead action level, the supplier must pursue the find-and-fix assessment steps:

Step 1: Supplier resamples at a nearby site for water quality parameters.[175]

Step 2: Supplier performs site assessment at tap exceeding lead action level.[176]

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[171] Under 40 C.F.R. § 141.93(a)(2) (2021); 40 C.F.R. §§ 141.82(a)(2) through (a)(5) (2021).

[172] Within six months after the tap sampling period during which it exceeded the lead trigger level or lead action level. 40 C.F.R. § 141.81(f)(1) (2021). The small system compliance flexibility rule requires monitoring water quality parameters, evaluating compliance options, and recommending an option to the State within six months upon exceeding the lead trigger level but not the lead or copper action levels. The supplier must implement a State-approved compliance option upon exceeding the lead action level. 40 C.F.R. § 141.93(a) (2021).

[173] Within five days after receiving the results from the sample exceeding the lead action level (up to 14 days for a small-sized supplier without corrosion control treatment). The new site must be on the same-sized water main, in the same pressure zone, and within half a mile of the original sampling site. 40 C.F.R. § 141.82(j)(1) (2021).

[174] If at least 90 percent of a supplier's tap samples are less than the lead action level, the supplier does not exceed that standard. Thus, barely fewer than ten percent of the supplier's tap water samples could still exceed the lead action level. *See* 40 C.F.R. § 141.80(c)(4) (2021).

[175] Within six months after the tap sampling period during which it exceeded the lead trigger level or lead action level. 40 C.F.R. § 141.81(f)(1) (2021). The small system compliance flexibility rule requires monitoring water quality parameters, evaluating compliance options, and recommending an option to the State within six months upon exceeding the lead trigger level but not the lead or copper action levels. The supplier must implement a State-approved compliance option upon exceeding the lead action level. 40 C.F.R. § 141.82(j)(1) (2021).

[176] Collecting follow-up samples to assess source of elevated lead within 30 days after receiving the original results. 40 C.F.R. § 141.82(j)(2) (2021).

Step 3: Supplier evaluates site assessment and recommends to State.[177]

Step 4: State approves recommendation or a different approach.[178]

Step 5:

Alternative 1: Supplier must complete changes in OCCT.[179]
Alternative 2: Supplier undertakes corrosion control steps.[180]

Step 6: Supplier completes follow-up sampling.[181]

Step 7: State reviews adjusted corrosion control treatment and designates reoptimized OCCT.[182]

Step 8: Supplier operates redesignated OCCT.[183]

***Tap Water Monitoring for Lead and Copper.*** The LCR requires suppliers to monitor lead and copper at customer taps. The LCR prioritized tap sampling sites to address the greatest problems first. The LCRR revised this monitoring. [184]

***LCR Requirements.*** The Board below reviews the LCR only to the extent of monitoring requirement revised by the LCRR.

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[177] To determine whether centralized or local adjustment to OCCT or other distribution system actions are needed, submitting a recommendation within six months after the tap sampling period. A supplier optimizing or reoptimizing OCCT needs not submit a recommendation. 40 C.F.R. § 141.82(j)(3) (2021). USEPA cites to "monitoring conducted under this paragraph (j)(3)." The Board corrects this to "monitoring under subsection (j)(2)."

[178] Within six months after Step 3. 40 C.F.R. § 141.82(j)(4) (2021).

[179] A supplier having corrosion control treatment; within 12 months after Step 4. 40 C.F.R. § 141.82(j)(4) (2021).

[180] A supplier without corrosion control treatment must undertake corrosion control steps within 6 months after Step 4. *Id*. Presumably, this supplier now exits this sequence for the new one. *See* 40 C.F.R. § 141.82(j)(7) and (j)(8) (2021).

[181] A supplier under Step 5 Alternative 1; within 12 months after Step 5. 40 C.F.R. § 141.82(j)(4) (2021).

[182] Within six months after Step 6. 40 C.F.R. § 141.82(j)(4) (2021).

[183] Continuing tap water quality and water quality parameter testing. 40 C.F.R. § 141.82(j)(8) (2021).

[184] 86 Fed. Reg. 4198, 4200-01 (Jan. 15, 2021).

*LCR Sample Site Selection.* The LCR required suppliers to evaluate the materials in their distribution systems to select sites for collecting tap water samples.[185] The supplier was to prioritize sampling sites into three tiers:

Tier 1: Single-family homes containing copper pipes with lead solder installed after 1982[186] or containing lead pipes.[187]

Tier 2: Multiple-family residences containing copper pipes with lead solder installed after 1982 or containing lead pipes.[188]

Tier 3: Single-family residences containing copper pipes with lead solder installed before 1983 or containing lead pipes.[189]

The supplier was to populate its tap water monitoring sites first with Tier 1 sites, then Tier 2 sites, then with Tier 3 sites. If it had insufficient Tier 1, Tier 2, and Tier 3 sites, it was to

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[185] 40 C.F.R. § 141.86(a) (2020). The various available materials included building records and codes, inspections and records of the distribution system, and prior analytical results. 40 C.F.R. §§ 141.86(a)(2)(i) through (a)(2)(ii) (2020). The prior sampling was under a special monitoring provision of the Interim Primary Drinking Water Regulations, which required reporting directly to USEPA. *See* 40 C.F.R. § 141.42(d) (2020); *see also* 45 Fed. Reg. 57332 (Aug. 27, 1980) (requiring reporting before February 27, 1983). The Board did not adopt an equivalent rule with the initial Illinois SDWA-based rules. Safe Drinking Water Act Regulations, R88-26 (Aug. 9, 1990), slip op. at 92.

[186] USEPA used 1982 because it was before the 1986 ban on lead solder but less than 10 years before the LCR. USEPA asserted that older homes could have solder with dissipated lead. 56 Fed. Reg. 26460, 26485-86 (June 7, 1991) (adopting the LCR).

[187] 40 C.F.R. § 141.86(a)(3) (2020). The supplier could include residences normally in Tier 2 when those comprise at least 20 percent of the structures the supplier serves. 40 C.F.R. § 141.86(a)(3)(ii) (2020). The LCR defines Tier 1 sites similarly for NTNCWS suppliers but does not distinguish single-family homes from multiple-family residences. 40 C.F.R. § 141.86(a)(6) (2020).

[188] 40 C.F.R. § 141.86(a)(4) (2021).

[189] 40 C.F.R. § 141.86(a)(5) (2021).

use "representative sites throughout the distribution system."[190] The LCR required suppliers to draw half their samples from sites it serves through lead service connections.[191]

*LCR Tap Water Monitoring for Lead and Copper.* The LCR required a supplier[192] to collect "first-draw samples"[193] from customer taps in its pool of sites normally used for consumption.[194] The supplier was to use the same sites for succeeding sampling unless inaccessible.[195] The supplier could not sample sites using point-of-use (POU) or point-of-entry (POE) treatment devices.[196]

*Standard Monitoring.* Every monitoring period, the LCR required the supplier to collect a specified minimum number of samples from a specified number of sites. The number of samples and required number of sites increased with the number of persons the supplier serves, ranging from five samples from five sites for a supplier serving up to 100 persons to 100 samples from 50 sites for a supplier serving 100,000 persons.[197]

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[190] 40 C.F.R. § 141.86(a)(4) and (a)(5) (2021). The LCR allows NTNCWS suppliers having insufficient Tier 1 sites to populate its pool of sampling sites first with sites containing copper pipes with lead solder installed after 1983, then with representative sites throughout the distribution system. 40 C.F.R. § 141.86(a)(6) and (a)(7) (2020).

[191] Using all of their sites with lead service connections if the supplier does not have enough sites. 40 C.F.R. § 141.86(a)(6) and (a)(7) (2020).

[192] The LCR allowed trained residents of the buildings to collect the samples and allowed later acidification to avoid residents handling nitric acid. 40 C.F.R. § 141.86(b)(2) (2020).

[193] A first-draw sample is a sample of water that has stood in plumbing pipes for at least six hours and is collected without flushing the tap. 40 C.F.R. § 141.2 (2020) (definition). The LCR included procedures for collecting samples to ensure they are of water standing in the LSL. 40 C.F.R. § 141.86(3) (2021). The object was to maximize the likelihood of collecting the highest concentration of lead. 56 Fed. Reg. 26460, 26479 (June 7, 1991). The Board consistently hyphenates the term "first-draw," although USEPA does not do so.

[194] 40 C.F.R. § 141.86(b)(1) (2020). With the exception that the State may allow a supplier that does not have enough taps for first-draw samples to collect substitute samples from sites likely to have the longest standing times. 40 C.F.R. § 141.86(b)(5) (2020); *see* 40 C.F.R. § 141.85(b)(7) (2020) (waiver procedure).

[195] The supplier could then substitute with a new site meeting the same targeting criteria within reasonable proximity of the original site. 40 C.F.R. § 141.86(b)(4) (2020).

[196] 40 C.F.R. § 141.86(a)(1) (2020).

[197] 40 C.F.R. § 141.86(c) (2020). The sampling was also to begin on a date during 1992 or 1993,

Large-sized suppliers were to collect samples during each of two consecutive six-month periods. Small- and medium-sized suppliers were to monitor during each six-month monitoring period until required to implement corrosion control treatment for exceeding the lead or copper action level.[198] After installing corrosion control treatment or source water treatment, suppliers were to monitor during two consecutive monitoring periods. After the State specifies water quality control parameters for OCCT, suppliers were to monitor during each subsequent six-month monitoring period. [199]

The LCR provided that any additional monitoring that a supplier undertakes goes into calculations for compliance, such as determining the 90th percentile lead or copper level.[200] The LCR also allowed the State to invalidate lead or copper tap water samples if the laboratory results are erroneous, the sample came from a site not meeting selection criteria, the sample container became damaged in transit, or there is substantial reason to believe tampering occurred.[201] If invalidation left a supplier with results from fewer than its required number of samples, the supplier was to take replacement samples as soon as possible.[202]

*Reduced Monitoring.* The LCR allowed suppliers meeting the lead and copper action levels for two consecutive monitoring periods to reduce monitoring. A small or medium-sized supplier could reduce its number of samples and monitoring frequency to annually.[203] The State could allow reduced monitoring for any supplier meeting the lead and copper action levels and maintaining State-specified water quality parameters reflecting OCCT for two consecutive six-month monitoring periods.[204]

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based on the number of persons the supplier served. 40 C.F.R. § 141.86(d)(1) (2020).

[198] 40 C.F.R. § 141.86(d)(1)(i) and (d)(1)(ii) (2020).

[199] 40 C.F.R. § 141.86(d)(2) and (d)(3) (2020).

[200] 40 C.F.R. § 141.86(e) (2020).

[201] Requiring the supplier to submit all sample results to the State and any documentation supporting a supplier request for invalidation. The State could not invalidate a sample due to different results from follow-up samples. 40 C.F.R. § 141.86(f)(2) and (f)(3) (2020).

[202] But no later than 20 days after the State invalidated the samples. The supplier was to use the same sampling site if possible or at a site the supplier did not already use if not possible. 40 C.F.R. § 141.86(f)(4) (2020).

[203] 40 C.F.R. § 141.86(d)(4)(i) (2020). The reduced number of samples was one per sampling site. 40 C.F.R. § 141.86(c) (2020).

[204] 40 C.F.R. § 141.86(d)(4)(ii) (2020). This also applied to large-sized suppliers.

A small or medium-sized supplier could further reduce its monitoring frequency to triennially after meeting the lead and copper action levels for three successive years of annual monitoring.[205] Triennial monitoring was also available for any supplier demonstrating a 90th percentile lead level less than 0.005 mg/ℓ and copper level less than 0.65 mg/ℓ.[206]

A supplier on reduced monitoring, whether annual or triennial, was to collect the samples during June, July, or August.[207]

The LCR allowed the State to grant a "small system waiver" to any small-sized supplier if the supplier fulfilled specific criteria. A "full waiver" would allow the supplier to sample once every nine years for both lead and copper. A "partial waiver" would allow the supplier to reduce monitoring to once every nine years for only copper or lead.[208] The supplier was to prove that its distribution system and all connected plumbing had no lead-containing or copper-containing materials.[209] The State could revoke a small system waiver for stated reasons.[210]

*Resuming Standard Monitoring.* A small- or medium-sized supplier engaged in reduced monitoring was to return to standard monitoring upon exceeding the lead or copper action level. The supplier was also to conduct water quality parameter monitoring in the monitoring period when the supplier exceeded the action level. Two consecutive six-month monitoring periods without exceeding either action level would entitle the supplier to again reduce to annual monitoring. Three consecutive years without exceeding an action level would allow the supplier to switch to triennial monitoring.[211]

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[205] Subject to ongoing State review. 40 C.F.R. § 141.86(d)(4)(iii) (2020).

[206] 40 C.F.R. § 141.86(d)(4)(v) (2020). This applied also to large-sized suppliers.

[207] Unless the State specified a different period. 40 C.F.R. § 141.86(d)(4)(iv) (2020).

[208] 40 C.F.R. § 141.86(g) (2020).

[209] For lead, this would include having no pipes or service connections of lead, leaded brass or bronze, or plastic having lead plasticizer and no lead solder. For copper, the supplier was to certify that its system had no copper pipes or service lines. The supplier was also to provide at least one six-month round of standard tap water monitoring with a 90th percentile lead level less than 0.005 mg/ℓand 90th percentile copper level less than 0.65 mg/ℓ. The State could require the supplier to perform limited monitoring, engage in public outreach to remind its customers not to install materials that could void the waiver, and/or undertake some other task to ensure its system remains lead- and/or copper-free. 40 C.F.R. § 141.86(g) (2020).

[210] 40 C.F.R. § 141.86(g)(6) (2020).

[211] 40 C.F.R. § 141.86(c)(4)(vi)(A) (2020).

Similarly, any supplier on reduced monitoring and failing to meet the lead action level in any four-month period or failing to operate within its State-approved water quality parameters for more than nine days in any six-month period was to resume standard tap water monitoring and monitoring for water quality parameters. The supplier was to resume standard monitoring in the first six months of the year after the supplier exceeded the lead action level.[212] The State could also require a supplier on reduced monitoring to resume standard monitoring upon switching to a new source of water.[213]

This supplier could return to reduced monitoring after again qualifying for reduced monitoring for two consecutive six-month monitoring periods and gaining written approval from the State.[214] The State could again approve triennial monitoring if the supplier subsequently demonstrated compliance with the lead action level for three consecutive years of annual monitoring.[215]

***LCRR Requirements.*** The LCRR revised two significant aspects of monitoring[216]: selecting sampling sites and tap water monitoring for lead and copper. The LCRR added a new rule requiring lead monitoring in schools and child-care facilities.

*LCRR Sample Site Selection.* The LCRR extensively revised the criteria for selecting sample sites. The supplier was to prioritize sampling sites based on the information gathered under the new lead inventory requirements.[217] The LCRR classifies sampling sites for CWS suppliers differently than NTNCWS suppliers. With an emphasis on lead, galvanized, and lead status unknown service connections,[218] the LCRR requires classifying sites into four tiers[219]:

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[212] 40 C.F.R. § 141.86(c)(4)(vi)(B) (2020). This applied also to large-sized suppliers.

[213] 40 C.F.R. § 141.86(c)(4)(vii) (2020).

[214] 40 C.F.R. § 141.86(c)(4)(vi)(B)(*1*) (2020).

[215] 40 C.F.R. § 141.86(c)(4)(vi)(B)(*2*) (2020).

[216] The LCRR made only a minor change in laboratory analytical requirements, no longer requiring analyses for conductivity, calcium, and temperature by USEPA-approved methods in accredited laboratories. *See* 86 Fed. Reg 4198, 4302 (Jan. 15, 2021) (amending 40 C.F.R. § 141.89(a)).

[217] 40 C.F.R. § 141.86(a)(2) (2021).

[218] *See supra* note 48 and accompanying text.

[219] Suppliers cannot include lead status unknown service connections in any of their Tier 1 through Tier 4 sites. 40 C.F.R. § 141.86(a)(3) through (a)(6), (a)(8) and (a)(9) (2021).

Tier 1: Single-family structures the supplier serves through a lead service connection.[220]

Tier 2: Buildings, including multiple-family structures the supplier serves through a lead service connection.[221]

Tier 3: Single-family structures having galvanized lines downstream of a lead service connection.[222]

Tier 4: Single-family structures having copper pipes with lead solder.[223]

Tier 5: Buildings[224] representative of sites throughout the supplier's distribution system.[225]

The supplier must select sampling sites for its sampling pool, using Tier 1 sites first, then Tier 2, Tier 3, Tier 4, ending with Tier 5, selecting from the higher-numbered tier only if it has an insufficient number of sites from the lower-numbered tier.[226] The supplier must collect all

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[220] 40 C.F.R. § 141.86(a)(3) (2021). The supplier could include multiple-family residences, normally in Tier 2, when those comprise at least 20 percent of the structures the supplier serves. 40 C.F.R. § 141.86(a)(3) (2021). The LCRR defines Tier 1 sites similarly for NTNCWS suppliers but does not distinguish single-family homes from multiple-family residences. 40 C.F.R. § 141.86(a)(6) (2021).

[221] 40 C.F.R. § 141.86(a)(4) (2021). The LCR does not include a Tier 2 for NTNCWS suppliers. 40 C.F.R. § 141.86(a)(8) through (a)(10) (2021).

[222] Or downstream of a lead gooseneck, pigtail, or connector—currently or in the past. 40 C.F.R. § 141.86(a)(5) (2021). The LCRR defines Tier 3 sites similarly for NTNCWS suppliers but does not distinguish single-family homes from multiple-family residences. 40 C.F.R. § 141.86(a)(9) (2021).

[223] Installed before the State banned lead. 40 C.F.R. § 141.86(a)(6) (2021). Section 611.126 gives June 19, 1986, as the effective date of the ban on lead solder in Illinois. This was the effective date of the federal ban. *See* 42 U.S.C. 300-g (2020); Safe Drinking Water Act of 1986, § 1417, 100 Stat. 642, 651-52 (June 19, 1986).

[224] Described as "single-family structures or buildings, including multiple-family residences." 40 C.F.R. § 141.86(a)(7) (2021).

[225] The supplier could use non-residential buildings only if it had an insufficient number of single-family structures and multiple-family residences to complete its Tier 5 sampling. The rule defines a representative site as one having plumbing materials commonly found at other sites the supplier serves. *Id*. The LCRR defines Tier 5 sites similarly for NTNCWS suppliers but does not distinguish residential from non-residential buildings. 40 C.F.R. § 141.86(a)(10) (2021).

[226] 40 C.F.R. § 141.86(a)(3) through (a)(10) (2021).

samples from sites having lead service connections.[227] After collecting samples from every site the supplier serves through a LSL, the supplier may use other sites following the site tiering scheme.[228]

*LCRR Tap Water Monitoring for Lead and Copper.* The LCRR still requires suppliers to use first-draw samples of tap water for lead and copper.[229] The LCRR adds a requirement that the supplier[230] collect a "fifth-liter sample."[231] The LCRR continues to prohibit sampling from sites using POE devices. The LCRR narrowed the prohibition against sampling at sites using POU devices.[232] The LCRR further narrowed the sampling locations to the cold-water bathroom or kitchen sink tap.[233] The LCRR did not change the number of samples a supplier must collect.[234]

The LCRR appears inconsistent on how the supplier is to use the first-draw samples. The rule requiring first-draw tap samples provides that first-draw samples are for lead and copper in

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[227] Tier 1 and Tier 2 sites.

[228] 40 C.F.R. § 141.86(a)(11) (2021).

[229] Now specifying the use of wide-mouthed bottles. 40 C.F.R. § 141.86(b)(1) (2021). Wide-mouthed bottles allow higher flow-rate filling. 86 Fed. Reg. 4198, 4226 (Jan. 15, 2021). The LCRR moved the requirement that water stand in plumbing pipes before sampling from the definition of "first draw sample" into the substantive rule for collecting samples. *See* 40 C.F.R. §§ 141.2 (definition) and 141.86(b)(2) (2021).

[230] The LCRR still allows trained residents of the buildings to collect the samples with later acidification. However, the LCRR added a prohibition against including instructions to remove or clean the tap aerator and flushing taps within the minimum six-hour stagnancy period. 40 C.F.R. § 141.86(b)(2) (2021).

[231] The sample collector was to consecutively fill five numbered, one-liter bottles. The first bottle holds the first-draw sample, and the fifth bottle hold the fifth-liter sample. 40 C.F.R. § 141.86(b)(3)(ii) (2021). The Board consistently hyphenates the term, "fifth-liter sample," although USEPA does not do so.

[232] Now only extends to those designed to remove inorganic contaminants. 40 C.F.R. § 141.86(a)(1) (2021).

[233] 40 C.F.R. § 141.86(a)(2) (2021).

[234] *See* 86 Fed. Reg. 4198, 4298 (Jan. 15, 2021).

sampling periods requiring both and for lead only in periods requiring only lead.[235] The rule providing for fifth-liter samples provides that first-draw samples are for copper, and fifth-liter samples are for lead.[236] USEPA stated that LSLs contribute the majority of lead consumed in drinking water, and the fifth-liter sample more likely captures water from the customer's LSL. The first-draw sample more clearly reflects lead corrosion[237] in the customer's plumbing.[238]

The LCRR maintained the LCR timing of tap water sampling for lead and copper. The LCRR organized the timing around two new defined terms:

> *Tap sampling monitoring period* . . . means the period of time during which each water system must conduct tap sampling for lead and copper analysis. A tap sampling monitoring period is determined by lead and copper concentrations in tap samples and the frequency can range from every six months (i.e., semi-annual) up to once every nine years. Water systems on semi-annual tap sampling monitoring must collect samples no less frequently than every six months while those on annual monitoring must sample no less frequently than every year. Water systems on triennial monitoring must collect samples no less frequently than every three years; and those on monitoring waivers must sample no less frequently than every nine years. The start of each new tap sampling monitoring period, with the exception of semi-annual monitoring, must begin on January 1.
>
> *Tap sampling period* . . . means the time period, within a tap sampling monitoring period, during which the water system is required to collect samples for lead and copper analysis. For systems monitoring at a reduced frequency, the tap sampling period must be between the months of June and September, unless a different 4-month period of time is approved in writing to be more appropriate by the State. 40 C.F.R. § 141.2 (2021).[239]

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[235] 40 C.F.R. § 141.86(b)(1) (2021); *see* 40 C.F.R. § 141.86(b)(3)(i) (2021) (all samples for copper are first-draw samples).

[236] 40 C.F.R. § 141.86(b)(3)(ii) (2021).

[237] Taps, solder, pipes, and fittings.

[238] 86 Fed. Reg. 4198, 4226 (Jan. 15, 2021).

[239] The Board moved these defined terms to the definitions for Lead and Copper Rule and changed "tap sampling monitoring period" to "tap monitoring cycle." In this segment of discussion, the Board uses USEPA's defined terms.

*Standard Monitoring* The LCRR allows suppliers to use monitoring data collected before the compliance date as a first round of standard monitoring.[240] Suppliers having LSLs[241] and suppliers that did not monitor before the compliance date must begin a first round of standard monitoring after the compliance date.[242] After that first round,[243] the supplier continues standard tap monitoring for lead and copper in six-month tap sampling monitoring periods beginning every January 1 and July 1.[244]

*Reduced Monitoring.* The LCRR provides reduced monitoring in annual and triennial tap sampling monitoring periods. It relies on 90th percentile lead and copper values to determine whether the supplier may conduct reduced monitoring.[245] The tap sampling period for suppliers on reduced monitoring is June through September, unless the State requires a different tap sampling period.[246]

A supplier meeting the lead trigger level and copper action level during two consecutive six-month tap sampling monitoring periods (and maintaining the State-approved OWQPs as OCCT[247]) may reduce its monitoring to annual tap sampling monitoring periods. The supplier

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[240] Suppliers collecting LCRR-compliant samples under 40 C.F.R. §§ 141.86(a) and (b) between January 15, 2021 (the LCRR *Federal Register* publication date) and January 16, 2024 (the LCRR compliance deadline). 40 C.F.R. § 141.86(d)(1) (2021).

[241] Even if deemed to have OCCT. 40 C.F.R. § 141.86(d)(1)(i) (2021).

[242] 40 C.F.R. § 141.86(d)(1)(i) (2021). On the sooner of "January 1 or July 1 in the year following the [sic] January 16, 2024." Whether this is July 1, 2024, or January 1, 2025, is uncertain on the face of the rule.

[243] Including those conducting compliant monitoring between January 15, 2021, and January 16, 2024.

[244] 40 C.F.R. § 141.86(d)(1)(ii) and 141.86(d)(4) (2021).

[245] 40 C.F.R. § 141.86(d)(4) (2021).

[246] 40 C.F.R. § 141.86(d)(4)(i). Any alternative State-required monitoring period must be within four consecutive months, in a single calendar year, when the highest lead levels are likely, and during a period of normal operation. 40 C.F.R. § 141.86(d)(4)(i)(A) (2021). The LCRR specifies when suppliers on reduced monitoring must conclude their next round of sampling after the State approves an alternative tap sampling period. 40 C.F.R. § 141.86(d)(4)(i)(B) and (d)(4)(i)(C) (2021).

[247] If applicable.

must continue to sample at the standard number of sampling sites for lead but may sample for copper at a reduced number of sites.[248]

Similarly, a supplier exceeding the lead trigger level but not the lead or copper action levels during two consecutive tap sampling monitoring periods (and maintaining any applicable State-approved OWQPs for OCCT) may reduce its monitoring to annual tap sampling monitoring periods. However, the supplier must obtain written approval for annual monitoring from the State, and the supplier must continue sampling at the standard number of sampling sites for both lead and copper.[249]

A supplier monitoring annually exceeding the lead trigger level but not the lead and copper action levels for three consecutive tap sampling monitoring periods may increase[250] its tap sampling monitoring period for copper to every three years but may not reduce its tap sampling monitoring period for lead. If the supplier operates OCCT, it must maintain the range of State-approved OWQPs and receive written State approval for triennial monitoring.[251]

A small- or medium-sized supplier not exceeding the lead trigger level or copper action level in three consecutive years of monitoring[252] may reduce its monitoring frequency to triennial. The supplier can also use a reduced number of sampling sites. If the supplier operates OCCT, it must maintain the range of State-approved OWQPs and receive written State approval for triennial monitoring.[253]

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[248] Annual sampling begins the calendar year after the supplier's last standard sampling. 40 C.F.R. § 141.86(d)(4)(ii) (2021).

[249] Annual sampling begins the calendar year after the supplier's last standard sampling. 40 C.F.R. § 141.86(d)(4)(iii) (2021).

[250] The LCRR uses "reduce the tap sampling monitoring period." 40 C.F.R. § 141.86(d)(4)(iv) (2021). Although the supplier reduces its monitoring frequency, its tap sampling monitoring period increases.

[251] Triennial monitoring begins in the third calendar year of the supplier's last annual monitoring. 40 C.F.R. § 141.86(d)(4)(iv) (2021).

[252] This appears to embrace a combination of both standard monitoring and annual monitoring, with two six-month tap sampling monitoring periods counting for one year. *See* 40 C.F.R. § 141.86(d)(4)(v) (2021).

[253] Triennial monitoring begins in the third calendar year of the supplier's last annual monitoring. 40 C.F.R. § 141.86(d)(4)(v) (2021).

Any supplier demonstrating a 90th percentile lead concentration not exceeding 0.005 mg/L and 90th percentile copper concentration not exceeding 0.65 mg/L for two consecutive six-month tap sampling monitoring periods can reduce its monitoring to triennial. The supplier can also use a reduced number of sampling sites. If the supplier operates OCCT, it must maintain the range of State-approved OWQPs and receive written State approval for triennial monitoring.[254]

*Returning to Standard Monitoring.* Exceedances while on reduced monitoring prompt return to standard monitoring:

- Any supplier on reduced monitoring must resume standard monitoring beginning the first of the calendar year after the end of the tap sampling monitoring period in which the supplier exceeds the lead or copper action level.[255]

- A supplier on reduced monitoring exceeding the lead trigger level but not the lead or copper action level must monitor at least annually and collect the standard number of samples.[256]

- A supplier failing to maintain State-approved OWQPs in any tap water quality monitoring period mut return to standard tap water monitoring.[257]

- A supplier becoming a large-sized supplier without corrosion control treatment or large-sized supplier without corrosion control treatment exceeding the lead PQL must return to standard monitoring for at least two consecutive six-month tap sampling monitoring periods.[258]

*Monitoring after Optimized or Reoptimized OCCT, Installing Source Water Treatment, Adding a New Source, or a Change in Treatment.* Various changes affect a supplier's monitoring:

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[254] 40 C.F.R. § 141.86(d)(4)(vi) (2021).

[255] 40 C.F.R. § 141.86(d)(1)(ii)(C) (2021).

[256] The sampling must begin the calendar year after the tap sampling monitoring period when the supplier exceeded the trigger level. 40 C.F.R. § 141.86(d)(1)(ii)(D) (2021).

[257] 40 C.F.R. § 141.86(d)(1)(ii)(E) (2021).

[258] 40 C.F.R. § 141.86(d)(1)(ii)(F) (2021). This rule continues, "and then must continue monitoring in accordance with this paragraph (d)(1)(ii)(F)," making it uncertain whether the standard monitoring then continues after the supplier otherwise qualifies for reduced monitoring under 40 C.F.R. § 141.86(d)(4).

- A supplier installing initial or reoptimized OCCT after exceeding the lead or copper action level must conduct standard monitoring and comply with previous State-approved OWQPs until the State approves new OWQPs for OCCT.[259]

- A supplier reoptimizing OCCT after exceeding the lead trigger level but not the lead or copper action level must annually monitor for lead at the standard number of sites and for copper triennially.[260]

- A supplier installing source water treatment must conduct standard monitoring until it does not exceed the lead or copper action levels for two consecutive six-month tap sampling monitoring periods.[261]

- After the State specifies OWQPs for OCCT, a supplier must conduct standard monitoring for two consecutive six-month tap sampling monitoring periods.[262]

- A supplier reoptimizing OCCT after exceeding the lead trigger level but not the lead or copper action level must conduct standard monitoring for two consecutive six-month tap sampling monitoring periods.[263]

- If a supplier notifies the State of its intent to add a new source or make a long-term change in treatment,[264] it must engage in standard monitoring until at or below the lead and copper action levels for two consecutive tap sampling monitoring periods.[265]

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[259] 40 C.F.R. § 141.86(d)(2)(i) (2021).

[260] A small- or medium-sized supplier not exceeding the lead trigger level for three consecutive annual tap sampling monitoring periods can reduce its lead monitoring. 40 C.F.R. § 141.86(d)(2)(ii) (2021).

[261] The supplier may then reduce monitoring. 40 C.F.R. § 141.86(d)(2)(iii) (2021).

[262] After which the supplier may be eligible for reduced monitoring. 40 C.F.R. § 141.86(d)(3)(i) (2021).

[263] After which the supplier may be eligible for reduced monitoring upon State approval. 40 C.F.R. § 141.86(d)(3)(ii) (2021).

[264] Under 40 C.F.R. § 141.90(a)(3) (2021).

[265] Unless the State determines the new source or change in treatment is insignificant. After not exceeding the lead trigger level, lead action level, or copper action level for two consecutive six-month tap sampling monitoring periods, the supplier may reduce monitoring. 40 C.F.R. § 141.86(d)(2)(iv) (2021).

*Monitoring in Schools and Child Care Facilities.* The LCRR added requirements for monitoring in schools and child-care facilities.

Children are most at risk from exposure to lead.[266] Suppliers must undertake monitoring and public education activities at schools and child-care facilities constructed before the earlier of the State ban on lead plumbing and solder[267] or January 1, 2014.[268] Suppliers must sample at elementary schools and child-care facilities once, then at the request of the school or facility. Suppliers must sample at secondary schools on request.[269]

Suppliers must contact elementary schools and child-care facilities with information about lead health risks and notify them of the requirement for sampling with a schedule and instructions.[270] Suppliers must document their attempts to contact the elementary schools and child-care facilities.[271] Suppliers must contact secondary schools annually instructing them how to request sampling.[272]

The supplier must collect five samples from each school: two from drinking fountains, one from a kitchen faucet used for preparing food or drink, one from a classroom faucet used for drinking, and one from a nurse's office faucet. The supplier must collect two samples from each child-care facility: one from a drinking fountain and one from a kitchen faucet used for

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[266] 86 Fed. Reg. 4198, 4201, 4205-06, 4224, 4231 (Jan. 15, 2021).

[267] This is June 19, 1986, in Illinois.

[268] This was about the effective date of the Reduction of Lead in Drinking Water Act, P.L. 111-380. *See supra* note **Error! Bookmark not defined.**.

[269] 40 C.F.R. § 141.92 preamble (2022); *see* 40 C.F.R. § 141.92(g)(1) and (g)(2) (2022). The rule includes public education requirements discussed below beginning on page 45. The State may exempt suppliers from sampling under the LCRR where State or local law requires sampling consistent with the LCRR. 40 C.F.R. § 141.92(d) (2022). The same is true of a supplier's voluntary sampling program. 40 C.F.R. § 141.92(g)(4) (2022).

[270] 40 C.F.R. § 141.92(a)(2) (2022); *see* 40 C.F.R. § 141.92(g)(1) and (g)(2) (2022). After completing sampling at all elementary schools and child care facilities it serves, a supplier can sample these facilities on request. 40 C.F.R. § 141.92(b)(3) (2022).

[271] 40 C.F.R. § 141.92(a)(3) (2022).

[272] 40 C.F.R. § 141.92(a)(4) (2022).

preparing food or drink or another outlet used for drinking.[273] The supplier must use first-draw samples for lead.[274]

A supplier must sample at least 20 percent of elementary schools and 20 percent of child-care facilities it serves each year according to a State-approved schedule.[275] A supplier needs not sample more than 20 percent of the secondary schools it serves in any year.[276] A supplier must update its list of schools and child-care facilities every five years.[277]

The supplier must promptly provide the analytical results from sampling to the school or child-care facility with information about remediation options. The supplier must also provide the results to local and State public health departments and the State.[278]

***Monitoring Water Quality Parameters.*** ***LCR Requirements.*** The LCR required all large-sized suppliers and small- and medium-sized suppliers exceeding the lead or copper action level to monitor water quality parameters.[279] The supplier was to collect tap water samples representing the water throughout its distribution system considering several factors: the number of persons the supplier serves, the different sources of water, different treatment methods the supplier uses, and seasonal variability of the water.[280] The required number of sites increased

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[273] The supplier cannot use an outlet with a POU device unless every outlet at the facility has one, and if the school or facility does not have enough outlets, the supplier must use all outlets available. 40 C.F.R. § 141.92(b)(1) (2022).

[274] 40 C.F.R. § 141.92(b)(1)(vi) (2022). These differ in both volume and stagnation time from residential tap samples for lead. *Compare* 40 C.F.R. § 141.90(b)(1)(vi)(B) and (b)(1)(vi)(C) (2022) (250 mL and eight- to 18-hour stagnation time) *with* 40 C.F.R. § 141.86(b)(2) (2022) (1 ℓ and minimum six-hour stagnation time).

[275] The supplier can count documented refusals and non-responses towards its goal. 40 C.F.R. § 141.92(c)(1) (2022).

[276] And the supplier needs not sample any single secondary school more than once every five years. 40 C.F.R. § 141.92(b)(4) (2022); *see* 40 C.F.R. § 141.92(g)(3) (2022).

[277] 40 C.F.R. § 141.92(e) (2022).

[278] 40 C.F.R. § 141.92(f) (2022).

[279] 40 C.F.R. § 141.87 preamble and (b) (2020). The State and supplier were to consider any additional monitoring the supplier performed in decisions under the rules. 40 C.F.R. § 141.87(f) (2020).

[280] 40 C.F.R. § 141.87(a)(1)(i) (2020). The sampling was to begin with tap water monitoring for lead and copper on a date during 1992 or 1993, based on the number of persons the supplier

with the number of persons the supplier serves, ranging from one site for a supplier serving up to 500 persons to 25 sites for a supplier serving over 100,000 persons.[281]

The supplier was also to collect two samples at each entry point to its distribution system representing each water source after treatment during initial monitoring. The LCR required only one sample after the supplier installed corrosion control treatment, the State approved OWQPs for OCCT, or went on reduced monitoring.[282] If the supplier blended water from multiple sources before distribution, the samples were to represent periods of normal operation.[283]

*Initial Monitoring.* At both taps and entry points, the supplier was to begin sampling every six months during the monitoring period for tap water sampling for lead and copper.[284] For small- and medium-sized suppliers, the LCR required the supplier to begin sampling only during monitoring periods when exceeding the lead or copper action level. The supplier was to test for pH, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica (if the supplier used a phosphate- or silicate-based corrosion inhibitor).[285]

*Monitoring after Installing Corrosion Control.* After installing corrosion control treatment, suppliers were to continue sampling during the six-month tap water sampling periods for lead and copper. The supplier was to collect two samples from each tap for pH, alkalinity, calcium (if the supplier used calcium carbonate stabilization for corrosion control), and orthophosphate or silica (if the supplier used a phosphate- or silicate-based corrosion inhibitor).[286] The supplier was to collect one sample biweekly from each entry point for pH, alkalinity and chemical dose rate (if the supplier adjusted alkalinity), and inhibitor dose rate and orthophosphate or silica (if the supplier used corrosion inhibitor).[287] After the State specified

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served. 40 C.F.R. § 141.87(b) (2020); *see* 40 C.F.R. § 141.86(d)(1) (2020).

[281] 40 C.F.R. § 141.86(a)(2) (2020).

[282] *Id*.

[283] 40 C.F.R. § 141.87(a)(1)(ii) (2020).

[284] 40 C.F.R. § 141.87(b) (2020); *see* 40 C.F.R. § 141.86(d)(1) (2020).

[285] 40 C.F.R. § 141.87(b) (2020).

[286] 40 C.F.R. § 141.87(c) and (c)(1) (2020).

[287] 40 C.F.R. § 141.87(c)(2) (2020). A supplier using groundwater was to sample from entry points representative of water quality and treatment conditions throughout the supplier's system and from entry points separately representing treated and untreated water if the supplier provided both. 40 C.F.R. § 141.87(c)(3) (2020).

OWQPs for OCCT, the LCR required suppliers to monitor every six months, with small- and medium-sized suppliers required to monitor only when exceeding the lead or copper action level.[288]

*Reduced Monitoring.* The LCR provided for reduced water quality parameter monitoring for suppliers maintaining OWQPs for OCCT for two consecutive six-month monitoring periods. The supplier was to continue sampling entry points as before but could reduce its number of tap water sampling points.[289] A supplier maintaining its State-approved OWQPs representing OCCT for three consecutive years could reduce its tap monitoring frequency from semiannual to annual beginning after the end of the third calendar year.[290]

After maintaining its OWQPs for three consecutive years of annual monitoring, the supplier could further reduce its tap sampling to triennial immediately after the third year.[291] A supplier maintaining its OWQPs and demonstrating a 90th percentile lead level less than the PQL and copper level not exceeding 0.65 mg/ℓ for two consecutive monitoring periods could also reduce its monitoring to triennial.[292]

A supplier on reduced monitoring failing to maintain its OWQPs for more than nine days in any six-month period[293] must return to standard monitoring. The supplier could return to reduced monitoring after again meeting the criteria for doing so.[294]

***LCRR Requirements.*** The LCRR modified the monitoring scheme for water quality parameters. The LCRR still requires all large-sized suppliers and small- and medium-sized suppliers exceeding the lead or copper action level to monitor water quality parameters. The

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[288] 40 C.F.R. § 141.87(d) (2020).

[289] Ranging from two samples from one tap sampling site for a supplier serving 500 or fewer persons to two samples from each of 10 sites for a supplier serving more than 100,000 persons. 40 C.F.R. § 141.87(e)(1) (2020).

[290] 40 C.F.R. § 141.87(e)(2)(i) (2020). The supplier must collect annual samples evenly through the year. 40 C.F.R. § 141.87(e)(3) (2020).

[291] 40 C.F.R. § 141.87(e)(2)(i) (2020); *see* 40 C.F.R. § 141.86(c)(4)(vi)(B)(*3*) (2020) (tap water monitoring).

[292] 40 C.F.R. § 141.87(e)(2)(i) (2020).

[293] The six months could include six months spanning two monitoring periods, as the rule does not specify a single six-month monitoring period.

[294] 40 C.F.R. § 141.87(e)(4) (2020).

LCRR now also requires small- and medium-sized suppliers with corrosion control treatment exceeding the lead trigger level to monitor.[295] The supplier must still collect tap water samples representing the water throughout its distribution system considering the same factors: the number of persons the supplier serves, the different sources of water, different treatment methods the supplier uses, and seasonal variability of the water. The LCRR adds a requirement that the supplier include the sampling sites for water quality parameters in the site sampling plan for tap water monitoring for lead and copper.[296]

The required number of sites continues unchanged under the LCRR, still ranging from one site for a supplier serving up to 500 persons to 25 sites for a supplier serving more than 100,000 persons. The supplier still collects two samples at each entry point to its distribution system representing each water source after treatment through initial monitoring, afterwards requiring only one sample. The LCRR adds that a supplier engaged in "find-and-fix" must adjust the number of its sampling sites and continue monitoring water quality parameters from the adjusted number of sites.[297] In monitoring after installing corrosion control or after the State designates OWQPs for OCCT, the supplier needs only collect one sample from each site.[298] A supplier blending water from multiple sources before distribution must sample during periods of normal operation.[299]

*Initial Monitoring.* The LCRR requires large-sized suppliers without corrosion control treatment to monitor during the first two six-month tap sampling monitoring periods. The supplier is to begin monitoring no later than the beginning of the next calendar year following becoming a large-sized supplier or failing to maintain a 90th percentile lead concentration less than the PQL. A small- or medium-sized supplier exceeding the lead or copper action level must begin this monitoring for two consecutive six-month periods[300] beginning that month after the exceedance. Any supplier with corrosion control treatment for which the State has not

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[295] 40 C.F.R. § 141.87 preamble (2022). The State and supplier must still consider any additional monitoring in decisions under the rules. 40 C.F.R. § 141.87(f) (2022).

[296] 40 C.F.R. § 141.87(a)(1)(i) (2022); *see* 40 C.F.R. § 141.86(a)(1) (2022).

[297] A supplier already collecting twice the required number of sites needs not do so. 40 C.F.R. § 141.86(a)(2)(i) (2022).

[298] *Id.*; see 40 C.F.R. § 141.87(b) through (e) (2022).

[299] 40 C.F.R. § 141.87(a)(1)(ii) (2022).

[300] The timing of this monitoring within a month after the tap sampling period means these are six-calendar-month periods, not tap sampling monitoring periods, which begin on the first of January or July. *See* 40 C.F.R. § 141.2 (definition of "tap sampling monitoring period") and 141.86(d)(1) (2022).

designated OWQPs that exceeds the lead trigger level must also begin monitoring for two consecutive six-month periods.[301]

The LCRR changed the water quality parameters suppliers must monitor. For tap water samples (two at each tap) and entry point samples (one at each entry point[302]), the supplier now tests for pH and alkalinity.[303]

*Monitoring after Installing Corrosion Control.* After installing OCCT or reoptimized OCCT, suppliers sample every six months until the State specifies OWQPs for OCCT. Suppliers must collect these samples evenly through each six-month period. The supplier collects two samples from each tap for pH, alkalinity, and orthophosphate or silica (if the supplier used a phosphate- or silicate-based corrosion inhibitor).[304] The supplier biweekly collects one sample from each entry point for pH, alkalinity and chemical dose rate (if the supplier adjusts alkalinity), and inhibitor dose rate and orthophosphate or silica (if the supplier used corrosion inhibitor).[305]

After the State specifies OWQPs for OCCT, the LCRR requires suppliers to monitor in six-month monitoring periods, spacing the monitoring evenly throughout each period. For a large-sized supplier, this monitoring begins after the State specifies OCCT.[306] For a small- or medium-sized supplier, the monitoring begins after the supplier exceeds the lead or copper action level and continues only until the supplier no longer exceeds an action level and meets the State-

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[301] 40 C.F.R. § 141.87(b) (2022).

[302] 40 C.F.R. § 141.87(a)(2)(ii)(A) (2022).

[303] 40 C.F.R. § 141.87(b) (2022). The LCRR removed calcium, conductivity, temperature, and orthophosphate, and silica from initial monitoring. *Compare* 40 C.F.R. § 141.87(b) (2022) *with* 40 C.F.R. § 141.87(b) (2020).

[304] 40 C.F.R. § 141.87(c)(1) (2022). The LCRR removed calcium. *Compare* 40 C.F.R. § 141.87(c)(1)(i) (2022) *with* 40 C.F.R. § 141.87(c)(1) (2020).

[305] 40 C.F.R. § 141.87(c)(1) (2022). The LCRR removed calcium. *Compare* 40 C.F.R. § 141.87(c)(1)(ii) (2022) *with* 40 C.F.R. § 141.87(c)(2) (2020). A supplier using groundwater still samples from entry points representative of water quality and treatment conditions. 40 C.F.R. § 141.87(c)(1)(iii) (2020). Under the LCRR, States have discretion to require small- and medium-sized suppliers for which the State has not designated OWQPs exceeding the lead trigger level but not the lead or copper action level to conduct this monitoring or pursue some other State-approved monitoring scheme. 40 C.F.R. § 141.87(c)(2) (2020). This requires Board action in Illinois.

[306] Beginning on the first of January and July each calendar year. 40 C.F.R. § 141.87(d)(1) and (d)(1)(i) (2022).

designated OWQPs reflecting OCCT for two consecutive six-month monitoring periods.[307] A small- or medium-sized supplier exceeding the lead trigger level but not the lead or copper action level must monitor every six months until it no longer exceeds the lead trigger level.[308]

*Reduced Monitoring.* As under the LCR, a supplier maintaining its State-approved OWQPs representing OCCT and not exceeding the lead trigger level or copper action level for three consecutive years can reduce its tap monitoring frequency from semiannual to annual beginning after the end of the third calendar year.[309] If the supplier maintains OWQPs reflecting OCCT and its 90th percentile lead concentration does not exceed the PQL for lead of 0.005 mg/ℓ and 90th percentile copper concentration does not exceed 0.65 mg/ℓ two consecutive monitoring periods, it may reduce its monitoring frequency to annual.[310] A supplier monitoring annually must collect its samples throughout the year to reflect seasonal variability.[311]

As under the LCR, the LCRR requires a supplier on reduced monitoring failing to maintain its OWQPs for more than nine days in any six-month period[312] to return to standard monitoring. The supplier could return to reduced monitoring after again meeting the criteria for doing so.[313]

The LCRR removed the rule allowing a supplier to reduce its monitoring to triennial.[314]

*LCRR Changes in Analytical Requirements.* The LCRR changed analytical requirements relating to water quality monitoring. USEPA removed the requirements that only a certified

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[307] 40 C.F.R. § 141.87(d)(1) and (d)(1)(ii) (2022).

[308] 40 C.F.R. § 141.87(d)(2) (2022). The LCRR provides that the State has discretion to have these small- and medium-sized suppliers to monitor their OWQPs. 40 C.F.R. § 141.87(d)(3) (2022).

[309] 40 C.F.R. § 141.87(e)(2)(i) (2022). The supplier must collect annual samples evenly through the year. 40 C.F.R. § 141.87(e)(3) (2020).

[310] 40 C.F.R. § 141.87(e)(2)(ii) (2022).

[311] 40 C.F.R. § 141.87(e)(3) (2022).

[312] The six months could embrace six months spanning two monitoring periods; the rule does not specify in a single six-month monitoring period.

[313] 40 C.F.R. § 141.87(e)(4) (2022).

[314] *Compare* 40 C.F.R. § 141.87(e)(2)(i) (2022) *with* 40 C.F.R. § 141.87(e)(2)(i) (2020); *see* 86 Fed. Reg. 4198, 4300-02 (Jan. 15, 2021).

laboratory perform analyses for calcium, conductivity, and temperature, and the laboratory must use prescribed methods for the analyses.[315]

***Source Water Monitoring for Lead and Copper.***

The LCR required water systems to conduct source water monitoring following an action level exceedance. Based on the results of the monitoring, a decision on whether it was necessary to install water treatment was made. 86 Fed. Reg. 4231 (Jan 15, 2021). LCRR eliminates source water lead and copper monitoring that is not necessary to protect public health. *Id*. The final LCRR includes the provision for discontinued additional source water monitoring requirements if:

1) a water system has conducted source water monitoring for a prior lead and/or copper action level exceedance,
2) the state has determined that source water treatment is not required, and
3) a water system has not added any new water source. *Id*.

***Public Education, Supplemental Monitoring, and Mitigation.***

LCRR requires all CWSs to sample for lead in elementary schools and child-care facilities once during the first five years after the compliance date for the final rule. LCRR also requires sampling for lead in the secondary schools served by CWSs upon request. After initial testing of elementary schools and child-care facilities, the CWS will be required to conduct sampling at all the schools and child-care facilities they serve when requested by a facility. Schools and child-care facilities constructed after January 1, 2014, are exempt. Also exempt are facilities built after the date of state adopted standards that meet the definition of lead-free in accordance with Section 1417 of the SDWA, as amended by the Reduction of Lead in Drinking Water Act, to account for localities that adopted lead free standards earlier than 2014. 86 Fed. Reg 4234 (Jan. 15, 2021).

***Reporting and Recordkeeping.***

LCRR clarifies that all water systems must report to the state an addition of a new source or long-term treatment change prior to adding the source or modifying treatment. In addition,

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[315] *Compare* 40 C.F.R. § 141.89(a), (a)(1), and (a)(1)(iii) (2022) *with* 40 C.F.R. § 141.89(a), (a)(1), and (a)(1)(iii) (2022); *see* 86 Fed. Reg. 4198, 4303 (Jan. 15, 2021). Originally, 40 C.F.R. § 141.89(a)(1) required all analyses by a state- or USEPA-approved laboratory. 56 Fed. Reg. 26460, 26560 (June 7, 1991). USEPA amended 40 C.F.R. § 141.89(a)(1) adding a sentence allowing analyses (for all analytes but lead and copper) by any person acceptable by the State. 64 Fed. Reg. 67449, 67466 (Dec. 1, 1999). The Board did not similarly change the Illinois rule, continuing to require using certified laboratories. Safe Drinking Water Update, USEPA Regulations (July 1, 1999 through December 31, 1999), R00-10 (Aug. 24, 2000), slip op. at 30-31.

the rule includes a requirement for water systems to submit a tap site sample plan prior to the compliance date of the rule with tap sampling sites that meet the new site selection tiering criteria based on their LSL inventory to ensure states can verify the tap sampling sites comply with the requirements in the final rule and can track changes in the tap sampling pool. 86 Fed. Reg 4238 (Jan. 15, 2021).

For small system compliance flexibility options, an additional reporting requirement is added for systems who have opted to remove lead-bearing plumbing from their distribution system; they must certify within one year that the material has been eliminated. Under reporting for schools and childcare facilities, the rule adds reporting requirements for elementary and childcare facilities in the first five years of monitoring and reporting requirements for school and childcare sampling that is performed on-request.

**Incorporating the LCRR Changes.** The Board was able to incorporate the LCRR into the Illinois rules with minimal deviation from the federal text. For some areas, the Board encountered a few issues. For example, the only issues involved in the LSL inventory and replacement rules were limited to stylistic and clarifying changes in language.

The Board encountered more significant problems with other aspects of the LCRR. These include problems with USEPA relying on outdated LCR rules until the compliance deadline.

The Board assembled an Identical-in-Substance Rulemaking Addendum (Proposed) (IIS-RA(P)) and added it to the docket for this consolidated rulemaking. The IIS-RA(P) details all Board changes to USEPA's language, adding notes where the Board deems necessary. This discussion considers only the changes needing expansion.

***Relying on the Outdated LCR.*** The LCRR was effective December 16, 2021.[316] The compliance date is October 16, 2024.[317] For the interim, the LCRR provides that,

> [b]etween December 16, 2021, and October 16, 2024, community water systems and non-transient, noncommunity water systems must comply with 40 CFR 141.80 through 141.91, as codified on July 1, 2020.[318]

While the Board can add a delayed effective date, the Board must maintain the older version of the rule until obsolete. Thus, the Board must incorporate an "effective October 16, 2024" version of each revised rule together with an "until October 16, 2024" version.

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[316] 40 C.F.R. § 141.80(a)(2) (2022).

[317] 40 C.F.R. § 141.80(a)(3) (2022).

[318] 40 C.F.R. § 141.80(a)(4)(i) (2022).

The Board amended Subpart G to incorporate USEPA's LCRR amendments. The Board opted to incorporate the existing version of the LCR in Subpart G as a new Subpart AG with all Sections renumbered based on their prior Section numbers.[319] This helps highlight the changes the LCRR is making, and it will facilitate removing the older LCR version of the rules in the future.

***Tap Water Monitoring for Lead and Copper.*** The Board incorporated the LCRR requirements for tap water sampling as closely as possible to USEPA's language. However, the Board ma a number of minor, stylistic changes and corrections that do not merit discussion.[320]

The principal issue the Board confronted is that USEPA used confusing and inconsistent terms for the various times for sampling.[321] The Board quoted USEPA's new defined terms, "tap sampling monitoring period" and "tap sampling period" above.[322] USEPA intended the former to refer to the time when the supplier collects samples and the latter to describe monitoring frequency.[323] These are confusing. The Board changed "tap sampling monitoring period" to "tap monitoring cycle" to distinguish the terms. The Board further made usage more consistent throughout the LCRR and pre-existing text.

The NPDWRs have varied terms for monitoring periods. The rules define two terms for standard monitoring for chemical, microbiological, and radiological contaminants having traditional maximum contaminant limits (MCLs). A "compliance period" is a three-year period for compliance monitoring. A "compliance cycle" is three consecutive compliance periods.[324]

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[319] The Board added "1" after the period in the Section number. Thus, *e.g.*, "Section 611.355" becomes "Section 611.1355."

[320] The IIS-RA(P) for this rulemaking details all changes the Board made.

[321] USEPA explains that it proposed the terms "sampling period" (for the time for collecting samples) and "monitoring period" (for monitoring frequency) but commenters found their use inconsistent and confusing. USEPA changed these to the current terms. 86 Fed. Reg. 4198, 4240 (Jan. 15, 2021).

[322] *See* discussion beginning at page 29.

[323] 86 Fed. Reg. 4198, 4241 (Jan. 15, 2021).

[324] 40 C.F.R. § 141.2 (2022) (definitions). The term "compliance cycle" provides a basis for reduced monitoring. *See, e.g.,* 40 C.F.R. § 141.23(b)(1) and (c)(3) (2022). This includes source water monitoring for lead and copper under the LCRR. *See* 40 C.F.R. § 141.88(e)(1) and (e)(2) (2022).

Defining a tap sampling period as being within a tap monitoring cycle maintains consistency with existing rules for NPDWR monitoring.[325] Using "tap" distinguishes the terms as pertaining to tap water monitoring. The Board believes the changed term distinguishes each from the others and avoids confusion.[326]

Further, USEPA was not consistent in its use of "tap sampling monitoring period" and "tap sampling period." For example, USEPA uses "tap sampling period" in 40 C.F.R. § 141.81(b)(1) where "tap sampling monitoring period" seems more appropriate. USEPA then uses "two consecutive 6-month monitoring periods" in 40 C.F.R. § 141.81(b)(2), ignoring both defined terms.[327] As another example, USEPA uses "after the end of the tap sampling monitoring period during which a water system exceeds the lead or copper action level" in 40 C.F.R. § 141.81(e)(2)(i) and (e)(2)(ii), while using "after the end of the tap sampling period during which such water system exceeds the lead trigger level or copper action level" in 40 C.F.R. § 141.81(e)(2).

As one other example of apparent inconsistency, USEPA uses "monitoring period" in 40 C.F.R. § 141.83(a)(1), where "tap sampling period" is more consistent with 40 C.F.R. § 141.81(d)(1), (e)(1), and (f)(1). USEPA similarly used "monitoring period" in 40 C.F.R. § 141.85(b)(2), where "tap sampling period" appears more appropriate.

The Board did not correct every reference to tap water monitoring timeframes. In some instances of "tap sampling period," the Board believes USEPA may have intended "tap sampling monitoring period," but "tap sampling period" is arguably correct.[328] The Board will again review the text for consistent usage during the comment period for the proposal.

***Monitoring for Water Quality Parameters.*** The Board incorporated the LCRR requirements for tap water sampling as closely as possible to USEPA's language. However, the Board made a number of minor, stylistic changes and corrections that do not merit discussion.[329]

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[325] Avoiding confusion with the other terms may have been what USEPA sought, but the Board believes USEPA accomplished the opposite.

[326] The Board further added a definition of "water quality monitoring period" to distinguish that from the periods for tap sampling for lead and copper.

[327] The IIS-RA(P) lists all such changes the Board makes.

[328] *E.g.*., 40 C.F.R. §§ 141.81(b)(2), (c), (d)(1), (e)(1), and (f)(1); 141.82(a)(5) and (j)(1); and 141.84(f)(6) and (g)(8) (2022).

[329] The IIS-RA(P) for this rulemaking details all changes the Board made.

The Board added a definition for "water quality monitoring period" to the definitions for Subpart G in 35 Ill. Adm. Code 611.350(b). This was to avoid confusion with "tap monitoring cycle" and "tap sampling period," which appear in the rules for water quality parameter monitoring though they apply to tap water monitoring for lead and copper.

The Board changed the rule in 40 C.F.R. § 141.87(c)(2) allowing the State to derive alternative water quality parameters for small- and medium-sized suppliers. Corresponding Section 611.357(c)(2) provides that the Board can require an alternative scheme by rule, variance, or adjusted standard. The Board must establish a standard for the Agency to use when making such determinations,[330] and USEPA's rule provides nothing for the Board to establish a standard using IIS rulemaking.

**Laboratory Analytical Methods**

USEPA updated its Clean Water Act analytical methods.[331] The Illinois rules incorporate methods by reference in Section 611.102.[332] Updating the incorporation by reference to the 2021 edition of *Code of Federal Regulations* will complete Board action on this USEPA action.

USEPA added 17 new ATPs for monitoring compliance with the National Primary Drinking Water Regulations (NPDWRs). These included methods for inorganic and organic chemical analytes, disinfectant residuals, and radiochemical contaminants and microbiological methods.[333]

The following table summarizes the new ATPs, the analytes, the Board's short-form name for each, and the substantive Illinois rules affected:

ATP: ASTM D 1293-18: "Standard Test Methods for pH of Water", approved 2018
Source: ASTM International
Method Type: electrometric
Approved analyte/parameter: pH
Board-assigned short-form name: ASTM D1293-18
Substantive rule relying on the method: Section 611.611(a)(21)

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[330] *See* Granite City Steel Div. of National Steel Co. v. Pollution Control Board, 155 Ill. 2d 149, 613 N.E.2d 719 (1993).

[331] 86 Fed. Reg. 27226 (May 19, 2021) (revising, *inter alia*, 40 C.F.R. § 136.3(a)).

[332] Microbiological methods for Section 611.1004(b) (the Long Term 2 Enhanced Surface Water Treatment Rule).

[333] 86 Fed. Reg. 28277 (May 26, 2021); *see* 86 Fed. Reg. 29526 (June 2, 2021) (corrections). USEPA's ATPs included methods for chloride and sulfate, 86 Fed. Reg. at 28289-90, having no counterparts in the Illinois rules. *See* 35 Ill. Adm. Code 611.612.

ATP: ASTM D 1688-17 A: "Standard Test Methods for Copper in Water", "Test Method A—Atomic Absorption, Direct", approved 2017
Source: ASTM International
Method Type: atomic absorption—direct aspiration
Approved analyte: copper
Board-assigned short-form name: ASTM D1688-17 A
Substantive rule relying on the method: Section 611.611(a)(10)(B)

ATP: ASTM D 1688-17 C: "Standard Test Methods for Copper in Water", "Test Method C—Atomic Absorption, Graphite Furnace", approved 2017
Source: ASTM International
Method Type: atomic absorption—furnace technique
Approved analyte: copper
Board-assigned short-form name: ASTM D1688-17 C
Substantive rule relying on the method: Section 611.611(a)(10)(A)

ATP: ASTM D 3223-17: "Standard Test Method for Total Mercury in Water", approved 2017
Source: ASTM International
Method Type: manual cold vapor technique
Approved analyte: mercury
Board-assigned short-form name: ASTM D 3223-17
Substantive rule relying on the method: 611.611(a)(16)(A)

ATP: ASTM D 3454-18: "Standard Test Method for Radium-226 in Water", approved 2005
Source: ASTM International
Method Type: radon emanation
Approved analyte: radium-226
Board-assigned short-form name: ASTM D3454-18
Substantive rule relying on the method: Section 611.720(a)(3)(B)

ATP: ASTM D 3697-17: "Standard Test Method for Antimony in Water", approved 2017
Source: ASTM International
Method Type: atomic absorption—hydride technique
Approved analyte(s): antimony
Board-assigned short-form name: ASTM D 3697-17
Substantive rule relying on the method: Section 611.611(a)(2)(B)

ATP: ASTM D 4327-17: "Standard Test Method for Anions in Water by Ion Chromatography", approved 2017
Source: ASTM International
Method Type: ion chromatography
Approved analytes: fluoride, nitrate, nitrite, orthophosphate
Board-assigned short-form name: ASTM D4327-17

Substantive rules relying on the method: Sections 611.611(a)(13)(A), (a)(18)(A), (a)(19)(A), and (a)(20)(F)

ATP: ASTM D 6919-17: "Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography", approved 2017
Source: ASTM International
Method Type: ion chromatography
Approved analytes: calcium, magnesium, sodium
Board-assigned short-form name: ASTM D6919-17
Substantive rules relying on the method: Sections 611.611(a)(8)(D), (a)(15)(D), and (a)(24)(C)

ATP: ME 531: "Measurement or N-Methylcarbamoyloximes and N-Methylcarbamates in Drinking Water by LC-MS/MS", version 1.0 (September 2019)
Source: Maine Health and Environmental Testing Laboratory
Method Type: liquid chromatography/mass spectrometry
Approved analytes: carbofuran, oxamyl
Board-assigned short-form name: ME 531 (19)
Substantive rules relying on the method: Sections 611.645(b)(7)(B) and (b)(25)(B)

ATP: "Modified Colitag™ Test Method for Simultaneous Detection of Total Coliforms and E. coli in Water", Version 2.0, (June 2020)
Source: Neogen Corporation
Method Type: enzyme substrate
Approved analyte/parameter: total coliforms
Board-assigned short-form name: Modified Colitag™ (20)
Substantive rules relying on the method: Sections 611.802(c)(2)(A)(ix) and 611.1052(a)(5)(C)(vi) and (a)(5)(G)(vi)

ATP: "Method 1001: Lead in Drinking Water by Differential Pulse Anodic Stripping Voltammetry", May 2020, Revision 1.1
Source: Palintest, Ltd.
Method Type: differential pulse anodic stripping voltametry
Approved analyte: lead
Board-assigned short-form name: Palintest 1001 (20)
Substantive rule relying on the method: Section 611.611(a)(14)(F)

ATP: "Chlorine Dioxide and Chlorite in Drinking Water by Amperometry using Disposable Sensors", Version 1.1 (February 2020)
Source: Palintest, Ltd.
Method Type: amperometric sensor
Approved analytes: chlorine dioxide, chlorite (daily)
Board-assigned short-form name: Palintest ChlordioX Plus (20)

Substantive rules relying on the method: Sections 611.381(b)(1)(D)(ii) and (c)(1)(D)(iii) and 611.531(b)(3)(A)

ATP: "Free and Total Chlorine in Drinking Water by Amperometry using disposable sensors", Revision 1.1 (February 2020)
Source: Palintest, Ltd.
Method Type: amperometric sensor
Approved analytes/parameters: free chlorine, total chlorine
Board-assigned short-form name: Palintest ChloroSense (20)
Substantive rules relying on the method: Sections 611.381(c)(1)(A)(vi) and (c)(1)(C)(vi) and 611.531(b)(1)(F) and (b)(2)(G)

ATP: "Simultaneous Detection of Total Coliform Bacteria and Escherichia coli Using RAPID'E. coli 2 (REC2) in Drinking Water" (May 2020)
Source: Bio-Rad Laboratories
Method Type: membrane filtration
Approved analytes/parameters: *E. coli*, total coliforms
Board-assigned short-form name: RAPID'E. coli (20)
Substantive rules relying on the method: Sections 611.802(c)(2)(A)(xii) and 611.1052(a)(5)(B)(v) and (a)(5)(F)(vi)

ATP: "Method 127: Determination of Monochloramine Concentration in Drinking Water," Version 1.0 (January 2021), doc. no. EPA 815-B-21-004
Source: USEPA, Office of Ground Water and Drinking Water
Method Type: indophenol colorimetric
Approved analytes: total chlorine
Board-assigned short-form name: USEPA 127 (21)
Substantive rule relying on the method: Section 611.531(b)(2)(H)

ATP: Method 903.0, Revision 1.0: "Alpha-Emitting Radium Isotopes in Drinking Water" (January 2021), doc. no. EPA 815-B-21-002
Source: USEPA, Office of Ground Water and Drinking Water
Method Type: radiochemical
Approved analyte: radium-226
Board-assigned short-form name: USEPA 903.0 (21)
Substantive rule relying on the method: Section 611.720(a)(3)(A)

ATP: Method 903.1, Revision 1.0: "Radium-226 in Drinking Water Radon Emanation Technique" (January 2021), doc. no. EPA 815-B-21-003
Source: USEPA, Office of Ground Water and Drinking Water
Method Type: radon emanation
Approved analyte: radium-226
Board-assigned short-form name: USEPA 903.1 (21)
Substantive rule: Section 611.720(a)(3)(B)

USEPA made a limited number of minor, stylistic changes and corrections to the tables in appendix A to subpart C of 40 C.F.R. 141. None required Board action. Many simply added, changed, or moved punctuation or capitalization in table entries. Others corrected errors in USEPA's table that the Board did not need to correct in the corresponding Illinois rules.[334]

## Board-Initiated Revisions

The Board corrects and revises existing text of rules. These corrections and revisions are Board-initiated and do not derive from the present USEPA approval of new ATPs. However, the volume of the review did not allow for completing it today, and the Board will conclude the review in a future rulemaking.

Table 3 in the IIS-RA(P) for this proceeding lists all Board housekeeping amendments. This opinion includes no further explanation of those changes and refers participants to the IIS-RA(P) for explanation.

## PUBLIC COMMENTS

The Board requests comments on the proposed amendments. The Board specifically requests comment on whether the proposed amendments ensure that Illinois' primary drinking water regulations remain consistent with the NPDWRs.

The Board will receive public comments on this proposal for at least 45 days following its publication in the *Illinois Register*. After that time, the Board will immediately consider adopting final amendments, making any necessary changes made evident through the public comments. The Board expects to file any adopted rules with the Secretary of State immediately after adoption, likely by September 18, 2023.

## ORDER

The Board directs the Clerk to provide notice in the *Illinois Register* of the appended proposed amendments to the Illinois Primary Drinking Water Regulations.

I, Don A. Brown, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion on June 1, 2023, by a vote of 3-0.

Don A. Brown, Clerk
Illinois Pollution Control Board

[334] See the entries for 35 Ill. Adm. Code 611.102(a), Palintest Methods; 35 Ill. Adm. Code 611.102(a), Palintest ChlordioX Plus (20); 35 Ill. Adm. Code 611.102(b), USEPA 525.3 (12); and 35 Ill. Adm. Code 611.531(b)(1)(E) and (b)(2)(F) in Table 2 of the IIS-RA(P).