Annex A
TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Subpart C. PROTECTION OF NATURAL RESOURCES
ARTICLE II. WATER RESOURCES
CHAPTER 109. SAFE DRINKING WATER
Subchapter A. GENERAL PROVISIONS

§ 109.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

ANSI—The American National Standards Institute, Inc. of New York, New York.

Act—The Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.17).

Administrator—The Administrator of the EPA **or the Administrator's authorized representative**.

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CCR—Consumer Confidence Report—An annual water quality report that community water systems deliver to their customers, as described in § 109.416 (relating to CCR requirements).

***CCT*—Corrosion control treatment.**

CPE—Comprehensive performance evaluation—A thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation and maintenance practices.

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Cartridge filter—A pressure-driven separation device that removes particulate matter larger than 1 micrometer using an engineered porous filtration media. It is typically constructed as rigid or semirigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

***Childcare facility*—A location that houses a provider of childcare, day care, or early learning services to children as licensed by the State licensing agency.**

Coagulation—A process using coagulant chemicals and mixing by which colloidal and suspended material are destabilized and agglomerated into settleable or filterable flocs, or both.

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Confluent growth—Bacterial growth, with or without sheen, covering the entire membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

***Connector*—Also referred to as a gooseneck or pigtail, is a short segment of piping, not exceeding 3 feet, which can be bent and used for connections between service piping. Lead connectors exceeding 3 feet are considered to be part of a lead service line. Lead connectors may result in a galvanized service line needing replacement if the lead connector is upstream of the galvanized line.**

Consecutive water system—A public water system which obtains all of its water from another public water system and resells the water to a person, provides treatment to meet a primary MCL, MRDL or treatment technique, or provides drinking water to an interstate carrier. The term does not include bottled water and bulk water systems.

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Federal regulations—The National Primary Drinking Water Regulations and the National Secondary Drinking Water Regulations.

***Fifth-liter sample*—For systems collecting tap water samples in accordance with § 109.1103(a)(4) (relating to monitoring requirements), the final 1-liter sample collected in a sequence of five consecutively numbered 1-liter sample bottles.**

Filter profile—A graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

Filtration—A process for removing particulate matter from water by passage through porous media.

Finished water—Water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as necessary to maintain water quality in the distribution system (for example, booster disinfection or addition of corrosion control chemicals).

***[First-draw] First-liter** sample*—**[A 1-liter sample of tap water collected in accordance with § 109.1103 (relating to monitoring requirements), that has been standing in plumbing pipes at least 6 hours and is collected without flushing the tap.] For systems collecting tap water samples in accordance with § 109.1103(a)(4), the first 1-liter volume collected.**

Flocculation—A process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable or filterable particles through gentle stirring by hydraulic or mechanical means.

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GAC20—A granular activated carbon filter bed with an empty bed contact time of 20 minutes based on average daily flow and a carbon reactivation frequency of every 240 days.

***GRR service line*—Galvanized requiring replacement service line.**

GUDI—Groundwater under the direct influence of surface water—

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Lake/reservoir—A natural or man-made basin or hollow on the earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

***[Lead service line*—A service line made of lead which connects a water main to a building inlet and a lead pigtail, gooseneck or other fitting which is connected to the lead line.]**

Level 1 assessment—An evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices and, when possible, the likely reason that the system triggered the assessment.

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Nontransient noncommunity water system—A noncommunity water system that regularly serves at least 25 of the same persons over 6 months per year.

***OCCT—Optimal corrosion control treatment*—CCT that minimizes the lead and copper concentrations at users' taps while ensuring that the treatment does not cause the water system to violate a provision of this chapter.**

***OWQP—Optimal water quality parameters*—A minimum value or range of values designated by the Department for each of the key parameters for OCCT once it has been installed. The minimum value or range of values for the key parameters are set at both entry points and locations in the distribution system.**

PDWEP—Guidelines for Public Drinking Water Equipment Performance issued by NSF.

PFAS—Perfluoroalkyl and Polyfluoroalkyl Substances.

PFOA—Perfluorooctanoic acid—CASRN 335-67-1.

PFOS—Perfluorooctanesulfonic acid—CASRN 1763-23-1.

***POE device—Point-of-entry device*—A treatment device used as an alternative to central treatment that is installed on a public water line or service connection to a house, building or other facility for the purpose of reducing contaminants in the water distributed throughout the house, building or facility.**

***POU device—Point of use device*—A treatment device physically installed or connected to a single fixture, outlet or tap to reduce or remove contaminants in drinking water.**

***POL—Practical quantitation limit*—The minimum concentration of an analyte that can be measured with a high degree of confidence that the analyte is present at or above that concentration.**

***Partial service line replacement*—Replacement of any portion of a lead or GRR service line that leaves in service any length of that line upon completion of the work.**

Performance Evaluation Sample—A reference sample provided to a laboratory for the purpose of demonstrating that the laboratory can successfully analyze the sample within the limits of performance specified by the Department. The true value of the concentration of the reference material is unknown to the laboratory at the time of the analysis.

Person—An individual, partnership, association, company, corporation, municipality, municipal authority, political subdivision or an agency of Federal or State government. The term includes the officers, employees and agents of a partnership, association, company, corporation, municipality, municipal authority, political subdivision, or an agency of Federal or State government.

***Pitcher filter*—A nonplumbed water filtration device which consists of a gravity fed water filtration cartridge and a filtered drinking water reservoir that is certified by an ANSI accredited certifier to reduce lead in drinking water.**

Plant intake—The works or structures at the head of a conduit through which water is diverted from a source (for example, a river or lake) into the treatment plant.

[*Point-of-entry (POE) device*—A treatment device used as an alternative to central treatment that is installed on a public water line or service connection to a house, building or other facility for the purpose of reducing contaminants in the water distributed throughout the house, building or facility.]

Presedimentation—A preliminary treatment process used to remove gravel, sand and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

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Sanitary survey—An onsite review and evaluation of a public water system's source, facilities and equipment and the operation and maintenance procedures used by a public water supplier for producing and distributing safe drinking water.

***School*—Any building(s) associated with public, private, nonpublic or charter institutions that primarily provides teaching and learning for elementary or secondary students and is categorized as one of the following:**

(i) An elementary school, which is a school with students in any combination of grades (including preschool) up to and including grade 8.

(ii) A secondary school, which is a school with students in grades no less than 9 nor greater than 12.

Seasonal system—A noncommunity water system that is not operated as a public water system on a year-round basis and starts up and shuts down at the beginning and end of each operating season.

Sedimentation—A process for the removal of solids before filtration by gravity or separation.

***Service line*—A pipe which connects the water main, or other conduit for distributing water to consumers, to the building inlet. Where a building is not present, the service line connects the water main, or other conduit for distributing water to consumers, to the outlet. A service line is of the following types:**

(i) *Lead service line*—A service line where any portion is made of lead, including lead-lined galvanized service lines. The term does not include a lead connector that is less than or equal to 3 feet long.

(ii) *GRR service line*—A service line that is iron or steel piping that has been dipped in zinc to prevent corrosion and rusting and is: currently, or ever was, downstream of any portion of a lead service line, a lead connector, or is currently downstream of a lead status unknown service line. For this definition, downstream means in the direction of flow through the service line.

(iii) *Lead status unknown service line*—A service line with pipe material that has not been demonstrated to be a lead service line, GRR service line or a nonlead service line in accordance with § 109.1109 (relating to service line and connector inventory, service line replacement plan and sample site plan).

(iv) *Nonlead service line*—A service line with pipe material that has been determined not to be lead or GRR service line through an evidence-based record, method or technique.

Significant deficiency—A defect in design, operation or maintenance, or a failure or malfunction of the sources, treatment, storage or distribution system that the Department determines to be causing, or has the potential for causing, the introduction of contamination into the water delivered to consumers.

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System—

(i) A group of facilities used to provide water for human consumption including facilities used for collection, treatment, storage and distribution. The facilities shall constitute a system if they are adjacent or geographically proximate to each other and meet at least one of the following criteria:

(A) The facilities provide water to the same establishment which is a business or commercial enterprise or an arrangement of residential or nonresidential structures having a common purpose and includes mobile home parks, multi-unit housing complexes, phased subdivisions, campgrounds and motels.

(B) The facilities are owned, managed or operated by the same person.

(C) The facilities have been regulated as a single public water system under the Federal act or the act.

(ii) This definition may not be interpreted to require two or more currently regulated public water systems to become one system.

***System with CCT*—A public water system that has or purchases all of its water from a system that has either of the following:**

(i) OCCT approved by the Department.

(ii) Any pH adjustment, alkalinity adjustment and/or corrosion inhibitor addition resulting from other water quality adjustments as part of its treatment train infrastructure.

TOC—Total organic carbon—The total organic carbon in mg/L measured using heat, oxygen, ultraviolet irradiation, chemical oxidants or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.

TTHM—Total trihalomethanes—the sum of the concentrations in milligrams per liter of the trihalomethane compounds (trichloromethane, bromodichloromethane, dibromochloromethane and tribromomethane), rounded to two significant figures after addition.

***Tap monitoring period*—The time period during which each water system must conduct tap sampling for lead and copper analysis. The applicable tap monitoring period is determined by lead and copper concentrations in tap samples. The length of the tap monitoring period can range from 6 months to 9 years.**

***Tap sampling period*—The time period, within a tap monitoring period, during which the water system is required to collect samples for lead and copper analysis.**

***Tap sampling protocol*—The method for collecting tap samples for lead and copper analysis, as specified in § 109.1103(a)(4).**

Thickener supernatant—A stream containing the decant from a clarifier, sedimentation basin, or other unit used to treat water, solids or semi-solids from the primary treatment process.

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Vended water system—A public water system which provides water for bottling through the use of one or more water vending machines.

***WQP*—Water quality parameters.**

Waterborne disease outbreak—An illness of the same etiology experienced by two or more persons and attributed to pathogenic organisms in which the public water system is implicated as the source of illness by the Department of Health.

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Wholesale system—A public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more public water systems.

***90th percentile*—The concentration of lead or copper in tap water samples that is equal to or exceeded by 10% of the samples collected during a tap monitoring period in accordance with § 109.1103, calculated in accordance with § 109.1102(a.1) (relating to lead and copper action levels, 90th percentile calculation and treatment technique requirements). This level is compared to the lead and copper action levels to determine if an action level has been exceeded.**

Subchapter D. PUBLIC NOTIFICATION

§ 109.408. Tier 1 public notice—categories, timing and delivery of notice.

(a) *General violation categories and other situations requiring a Tier 1 public notice.* A public water supplier shall provide Tier 1 public notice for the following circumstances:

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(7) **[Violation of a treatment technique requirement for *Cryptosporidium* as defined in § 109.1203 (relating to bin classification and treatment technique requirements), resulting from a failure to provide the level of treatment appropriate for the systems bin classification] {Reserved}**.

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§ 109.410. Tier 3 public notice—categories, timing and delivery of notice.

(a) *General violation categories and other situations requiring a Tier 3 public notice.* A public water supplier shall provide Tier 3 public notice for the following circumstances:

(1) Monitoring violations under Subchapter C, K, L or M, except when a categories, timing and delivery of notice) or when the Department determines that a Tier 2 notice is required.

(2) Reporting and record maintenance violations under §§ 109.701(h) **and 109.1107** (relating to reporting and recordkeeping**; and system management responsibilities)**.

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Subchapter F. DESIGN AND CONSTRUCTION STANDARDS

§ 109.602. Acceptable design.

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(e) **[Point-of-use] POU** devices which are treatment devices applied to a single tap are not an acceptable treatment method for complying with an MCL, MRDL or treatment technique requirement**, except as specified in § 109.1102(d) (relating to lead and copper action levels, 90th percentile calculation and**

treatment technique requirements). **POU devices may be used for a temporary period approved by the Department to avoid unreasonable risk to health if approved in writing by the Department.**

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Subchapter G. SYSTEM MANAGEMENT RESPONSIBILITIES

§ 109.718. Comprehensive monitoring plan.

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(b) The plan must include the sample siting plans and monitoring plans required under other sections of this chapter, including the total coliform sample siting plan required under § 109.701(a)(5) (relating to reporting and recordkeeping), **the disinfection requirements rule sample siting plan required under § 109.701(a)(8),** the monitoring plan for disinfectants, DBPs and DBP precursors required under § 109.701(g), the lead and copper sample site location plan required under **[§ 109.1107(a)(1) (relating to system management responsibilities)] § 109.1109(c) (relating to service line and connector inventory, service line replacement plan and sample site plan)** and the source water sampling plan required under § 109.1202(h) (relating to monitoring requirements).

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Subchapter K. LEAD AND COPPER

Sec.
109.1101. Scope.
109.1102. **[Action levels] Lead and copper action levels, 90th percentile calculation** and treatment technique requirements.
109.1103. Monitoring requirements.
109.1104. Public education and notification**, supplemental monitoring and mitigation requirements.**
109.1105. Permit requirements.
109.1106. Design standards.
109.1107. System management responsibilities.
109.1108. Fees.
109.1109. Service line and connector inventory, service line replacement plan and sample site plan.
109.1110. Service line and lead connector replacement requirements.

§ 109.1101. Scope.

(a) This subchapter establishes **a** treatment technique **[requirements that include requirements for corrosion control treatment, lead service line replacement] rule that includes treatment techniques to control corrosion, treat source water and replace service lines, and provides** public education. **The regulations in this subchapter include requirements to support the treatment technique including development of a service line inventory, tap sampling, and monitoring for lead in schools and childcare facilities. [These] Some of the** requirements **only apply if there is an exceedance of [are triggered, in some cases, by samples collected at consumers' taps which exceed**

a] the lead or copper action level **as measured in samples collected at consumers' taps**. **Failure to comply with the requirements of this subchapter, including requirements established by the Department, is a violation of the National Primary Drinking Water Regulations and of this chapter.**

(b) This subchapter applies to community water systems and nontransient noncommunity water systems. For purposes of this subchapter, the systems are classified as either large, medium or small, based on the population served by the system. A large water system serves more than 50,000 persons. A medium water system serves more than **[3,300] 10,000** and fewer than or equal to 50,000 persons. A small water system serves **[3,300] 10,000** or fewer persons.

(c) A community or nontransient noncommunity water system which is a consecutive water system shall comply with this subchapter regardless of the compliance status of any public water system from which finished water is obtained. Each interconnection with a public water system from which finished water is obtained is considered source water for the receiving public water system and is subject to the **[monitoring, corrosion control treatment and source water treatment]** requirements under this subchapter.

§ 109.1102. **[Action levels] Lead and copper action levels, 90th percentile calculation** and treatment technique requirements.

(a) **[*Action levels for lead and copper*] *Lead action level, copper action level, lead PQL and copper PQL*.**

(1) **[The lead action level is 0.015 mg/L.] The lead or copper action level means the concentration of lead or copper in water which determines requirements under this subchapter. The action levels for lead and copper are as follows:**

(i) The lead action level is 0.010 mg/L.

(ii) The copper action level is 1.3 mg/L.

(iii) An action level is exceeded when the 90th percentile concentration of lead or copper is greater than the action level.

(2) **[The copper action level is 1.3 mg/L.] The PQLs for lead and copper are as follows:**

(i) The lead PQL is 0.005 mg/L.

(ii) The copper PQL is 0.65 mg/L.

(iii) A PQL is exceeded when the 90th percentile concentration of lead or copper is greater than the PQL.

(3) **[An action level is exceeded when the concentration of a contaminant in more than 10% of tap water samples collected during a monitoring period conducted in accordance with § 109.1103 (relating to monitoring requirements) is greater than the action level] {Reserved}.**

(4) **[The 90th percentile lead and copper levels shall be computed as follows:**

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

(ii) **The number of samples taken during the monitoring period shall be multiplied by 0.9.**

(iii) **The contaminant concentration in the numbered sample yielded by the calculation in subparagraph (ii) is the 90th percentile contaminant level.**

(iv) **For water systems that collect five samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.**

(v) **Interpolation shall be used to compute the 90th percentile when the numbered sample indicated in subparagraph (iii) is not a whole number] {Reserved}.**

(a.1) *90th percentile calculation.* A separate 90th percentile value must be calculated for lead and copper. The 90th percentile for lead and copper must be determined based on tap water samples collected in accordance with the tap sampling monitoring requirements and tested using the analytical methods specified in § 109.1103 (relating to monitoring requirements).

(1) The 90th percentile lead and copper concentrations must be calculated as follows for systems that only have sites identified as Tier 3, 4 or 5 in the sample site location plan required under § 109.1109(c) (relating to service line and connector inventory, service line replacement plan and sample site plan):

(i) Determine the minimum number of sites required for the appropriate monitoring schedule in § 109.1103.

(ii) Water systems shall include in the 90th percentile calculation customer requested samples that meet the conditions specified in § 109.1103(f)(1)(i).

(iii) The results of lead or copper samples taken in accordance with § 109.1103, including the results of any sampling conducted in addition to the minimum number of samples determined in subparagraph (i) and samples specified in subparagraph (ii), must be placed in order from lowest concentration to highest concentration.

(iv) Each sample result to be included in the calculation must be assigned a number, ascending by single integers, beginning with the number 1 for the sample with the lowest concentration being used. The number assigned to the sample with the highest concentration must be equal to the total number of samples taken during a tap sampling period plus the number of customer requested samples that meet the requirements of subparagraph (ii).

(v) The number of samples identified in subparagraph (iv) must be multiplied by 0.9.

(vi) The contaminant concentration in the numbered sample equal to the number yielded by the calculation in subparagraph (v) is the 90th percentile concentration.

(vii) For water systems that collect five samples per tap sampling period, the 90th percentile concentration is the average of the highest and second highest concentrations.

(viii) Interpolation shall be used to compute the 90th percentile when the numbered sample indicated in subparagraph (vi) is not a whole number.

(2) The 90th percentile lead and copper concentrations must be computed as follows for systems with sufficient Tier 1 or 2 sites to meet the minimum number of sites listed for the appropriate monitoring schedule in § 109.1103:

(i) Determine the minimum number of sites required for the appropriate monitoring schedule in § 109.1103.

(ii) Water systems shall include customer requested samples in the 90 th percentile calculation that meet the conditions specified in § 109.1103(f)(1)(i). To determine which sample results to use under subparagraph (iv) consider all first-liter and fifth-liter samples taken from each Tier 1 and 2 site and use the higher result of the first-liter or fifth-liter sample in subparagraph (iv).

(iii) The results of the higher first-liter and fifth-liter lead (or first-liter lead sample if tiering is based on premise plumbing) or first-liter copper samples taken in accordance with § 109.1103, including the results of any sampling conducted in addition to the minimum number of samples determined in subparagraph (i) and samples specified in subparagraph (ii), must be placed in order from lowest concentration to highest concentration.

(iv) Each sample result to be used in the calculation must be assigned a number, ascending by single integers, beginning with the number 1 for the sample with the lowest contaminant level being used. The number assigned to the sample with the highest concentration must be equal to the total number of samples taken during a tap sampling period plus the number of customer requested samples that meet the requirements of subparagraph (ii).

(v) The number of samples identified in subparagraph (iv) must be multiplied by 0.9.

(vi) The contaminant concentration in the numbered sample equal to the number yielded by the calculation in subparagraph (v) is the 90th percentile concentration.

(vii) For water systems that collect five samples per tap sampling period, the 90th percentile concentration is the average of the highest and second highest concentrations.

(viii) Interpolation shall be used to compute the 90th percentile when the numbered sample indicated in subparagraph (vi) is not a whole number.

(3) The 90th percentile lead and copper concentrations must be computed as follows for systems with sites identified as Tier 1 or 2 under § 109.1109 with an insufficient number of Tier 1 or 2 sites to meet the minimum number of sites listed for the appropriate monitoring schedule in § 109.1103:

(i) Determine the minimum number of sites required for the appropriate monitoring schedule in § 109.1103; this is the number of results to be included in the calculation.

(ii) Water systems shall include customer requested samples in the 90th percentile calculation that meet the conditions specified in § 109.1103(f)(1)(i).

(iii) To determine which sample results to use under subparagraph (iv) consider all first-liter and fifth-liter samples taken from each Tier 1 and 2 site and use the higher result of the first-liter or fifth-liter sample in subparagraph (iv).

(iv) The results of the highest first-liter or fifth-liter lead (or first-liter lead sample if tiering is based on premise plumbing) or first-liter copper samples taken at Tier 1 or Tier 2 sites along with the first-liter results from the number of Tier 3, 4, or 5 sites as specified in § 109.1103(f)(1)(iii) needed to meet the minimum number of sites determined in subparagraph (i) must be placed in order from lowest concentration to highest concentration. The results of any sampling conducted in addition to the minimum number of samples determined in subparagraph (i) and samples specified in subparagraph (ii), must also be included in this ranking. Sample results from any remaining Tier 3, 4, and 5 sites must not be included in this calculation.

(v) Each sample result to be used in the calculation must be assigned a number, ascending by single integers, beginning with the number 1 for the sample with the lowest contaminant level being used. The number assigned to the sample with the highest contaminant level must be equal to the total minimum number of sites listed for the appropriate monitoring schedule in § 109.1103.

(vi) The number of samples identified in subparagraph (v) must be multiplied by 0.9.

(vii) The contaminant concentration in the numbered sample equal to the number yielded by the calculation in subparagraph (vi) is the 90th percentile concentration.

(viii) For water systems that collect five samples per tap sampling period, the 90th percentile concentration is the average of the highest and second highest concentrations.

(ix) Interpolation shall be used to compute the 90th percentile when the numbered sample indicated in subparagraph (vii) is not a whole number.

(4) For water systems that fail to collect at least five samples, the 90th percentile concentration is the highest sample concentration. For any water system that does not collect the required minimum number of samples for the appropriate monitoring schedule in § 109.1103, the 90th percentile concentration will be calculated in accordance with paragraph (1)(ii)—(viii).

(b) *Treatment technique requirement for corrosion control.* **A water system shall provide OCCT as defined in § 109.1. All water systems are required to install, optimize or reoptimize OCCT in accordance with this subsection unless the system is deemed to have OCCT or reoptimized OCCT under paragraph (1.3). This subsection sets forth when a system shall complete the CCT steps under paragraph (2.1) or (2.2) based on size, whether the system has CCT, and whether it has exceeded the lead PQL, lead action level or copper action level.**

(1) **[*Optimal corrosion control treatment.* A community water system or nontransient noncommunity water system shall provide optimal corrosion control treatment which**

minimizes the lead and copper concentrations at users' taps while ensuring that the treatment does not cause the system to violate a primary MCL. Water systems deemed to have optimized corrosion control treatment under this subsection shall operate in compliance with Department designated water quality parameters and continue to conduct lead and copper tap monitoring. A system may achieve optimal corrosion control treatment in one of the following ways:

(i) A small or medium water system is deemed to have optimized corrosion control if the system does not exceed either the lead or copper action level during each of two consecutive 6-month monitoring periods conducted in accordance with § 109.1103. If the system thereafter exceeds an action level during a monitoring period, the system shall complete applicable compliance activities under paragraph (2). The Department may require a system to repeat compliance activities previously completed when the Department determines that this is necessary for the system to achieve optimal corrosion control treatment.

(ii) A water system is deemed to have optimized corrosion control if the system demonstrates to the Department that for two consecutive 6-month monitoring periods conducted in accordance with § 109.1103 that the system does not exceed a lead or copper action level and the difference between the 90th percentile tap water lead level and the highest source water lead concentration is less than 0.005 mg/L, which is the Practical Quantitation Level for lead.

(A) **To make this demonstration, the system shall collect one sample for lead from each entry point during a monitoring period prior to initiation of construction or modification of corrosion control treatment facilities. If the system thereafter exceeds an action level during a monitoring period, the system shall complete applicable compliance activities under paragraph (2). The Department may require a system to repeat compliance activities previously completed when the Department determines that this is necessary for the system to achieve optimal corrosion control treatment.**

(B) **A water system deemed to have optimized corrosion control in accordance with this subparagraph shall continue monitoring for lead and copper at the tap no less frequently than once every 3-calendar years using the reduced number of sites specified in § 109.1103(e), and collecting the samples at times and locations specified in § 109.1103(e)(1)(iii).**

(iii) A system is deemed to have optimized corrosion control if the system installs new corrosion control treatment facilities or modifies existing treatment in accordance with paragraph (2) and operates in compliance with water quality parameter performance requirements specified by the Department in a permit issued under § 109.1105(c) (relating to permit requirements)] **{Reserved}**.

(1.1) ***Applicability of CCT steps to large, medium and small water systems.***

(i) Any large, medium or small community or any nontransient noncommunity water system with CCT that exceeds either the lead or copper action level shall complete the reoptimized OCCT steps in paragraph (2.1) unless the system meets all of the following:

(A) Has reoptimized OCCT once under paragraph (2.1) after November 1, 2027.

(B) Is meeting Department designated OWQPs.

(C) Is continuing to operate and maintain CCT as required in paragraph (3.1).

(ii) The Department may require a system that satisfies subparagraph (A)—(C) to reoptimize OCCT under paragraph 2.1.

(iii) After completing service line replacements in accordance with § 109.1110 (relating to service line and lead connector replacement requirements), if there are no lead, GRR or lead status unknown service lines remaining in the system's inventory, any water system that exceeds the lead action level at the end of a subsequent tap sampling period must follow the steps in paragraph (2.1).

(iv) Large water systems with CCT that exceed the lead PQL but do not exceed the lead or copper action level may be required by the Department to complete the reoptimized OCCT steps in paragraph (2.1).

(v) Large water systems without CCT that exceed either the lead PQL or the copper action level shall complete steps to study and install OCCT, as specified in paragraph (2.2).

(vi) Medium water systems with CCT that do not exceed either the lead or copper action level and do not have Department designated OWQPs shall complete the CCT steps in paragraph (2.1) starting with subparagraph (v) unless the system is deemed optimized in accordance with paragraph (1.3).

(vii) Medium and small water systems and nontransient noncommunity water systems without CCT that exceed either the lead or copper action level shall complete the OCCT steps in paragraph (2.2).

(1.2) *Water systems eligible to be deemed to have OCCT.*

(i) A small water system with Department designated OWQPs is not eligible to be deemed to have OCCT.

(ii) A medium water system without CCT or a small water system is deemed to have OCCT if the system meets the requirements of paragraph (1.3)(i).

(iii) A medium or large water system with CCT is deemed to have OCCT or reoptimized OCCT if it meets the requirements of paragraphs (1.3)(i) and (ii).

(1.3) *Requirements to be deemed to have OCCT.*

(i) Water systems specified under paragraph (1.2)(ii) that do not exceed the lead or copper action level during each of the two consecutive 6-month tap sampling monitoring periods and thereafter remain at or below the lead or copper action level in all tap sampling periods conducted in accordance with § 109.1103 are deemed to have OCCT or reoptimized OCCT. If the systems later exceeds either the lead or copper action level during any future tap sampling period, the treatment steps in paragraph (2.2) must be completed and the systems

shall not be eligible to be deemed to have OCCT or reoptimized OCCT under this subparagraph.

(ii) Water systems specified under paragraph (1.2)(iii) that meet the requirements of subparagraph (i) and do not exceed the lead PQL for two consecutive 6-month tap sampling monitoring periods conducted in accordance with § 109.1103 are deemed to have OCCT or reoptimized OCCT.

(A) Any water system specified under paragraph (1.2)(iii) that later exceeds the lead PQL or copper action level during any tap sampling period shall not be eligible to be deemed to have OCCT or reoptimized OCCT under this subparagraph and shall complete the treatment steps specified in paragraph (2.2).

(B) A water system deemed to have OCCT or reoptimized OCCT in accordance with this subparagraph shall continue monitoring for lead and copper at the tap no less frequently than once every 3 calendar years using the reduced number of sites specified in § 109.1103(a)(2.1), and collecting the samples at times and locations specified in § 109.1103(a)(2.1)(i).

(iii) A water system that has optimized or reoptimized CCT under this paragraph that has OCCT in place shall continue to operate and maintain that treatment, maintain Department designated WQPs, and conduct lead and copper tap sampling in accordance with § 109.1103.

(2) **[*Corrosion control treatment compliance schedule.* A system shall comply with the following schedule unless the system achieves optimal corrosion control treatment under paragraph (1)(i) or (ii) prior to initiation of construction or modification of corrosion control treatment facilities.**

(i) **An existing large water system shall:**

(A) **Submit a corrosion control treatment feasibility study that complies with paragraph (3) by June 30, 1994.**

(B) **Submit a permit application for construction or modification of corrosion control treatment facilities by March 31, 1995.**

(C) **Initiate construction or modification of corrosion control treatment facilities by December 31, 1995.**

(D) **Complete construction or modification of corrosion control treatment facilities and begin operation of these facilities by January 1, 1997.**

(E) **Submit a request for a Department designation of optimal corrosion control treatment performance requirements by January 31, 1998.**

(ii) A large water system triggered into corrosion control because it is no longer deemed to have optimized corrosion control under paragraph (1), or any medium or small water system that exceeds an action level shall:

(A) **Submit a corrosion control treatment feasibility study that complies with paragraph (3) within 18 months of the end of the monitoring period in which the action level was exceeded.**

(B) **Submit a permit application or otherwise comply with the permit application requirements under § 109.1105(b) for construction or modification of corrosion control treatment facilities within 30 months of the end of the monitoring period in which the action level was exceeded.**

(C) **Initiate construction or modification of corrosion control treatment facilities within 48 months of the end of the monitoring period in which the action level was exceeded.**

(D) **Complete construction or modification of corrosion control treatment facilities and begin operation of these facilities within 60 months of the end of the monitoring period in which the action level was exceeded.**

(E) **Submit a request for Department designation of optimal corrosion control treatment performance requirements within 30 days of the end of the second follow-up monitoring period required under § 109.1103(c)(1)(ii) following completion of construction or modification of corrosion control treatment facilities] {Reserved}.**

(2.1) *CCT steps and deadlines for water systems reoptimizing OCCT.* Any water system with CCT not deemed to have OCCT or reoptimized OCCT, under paragraph (1.3), shall complete the following CCT steps in accordance with the applicable schedule specified in this paragraph. The treatment steps must also be completed in accordance with the requirements specified in paragraph (3.1). Water systems shall conduct lead and copper tap sampling in accordance with § 109.1103 while completing the CCT steps in this paragraph.

(i) *Step 1*: *Initiate mandatory pipe rig/loop study.* Large or medium water systems with lead service lines that exceed the lead action level shall harvest lead service lines from the distribution system, construct flowthrough pipe rigs/loops and operate the rigs/loops with finished water within 1 year after the end of the tap sampling period in which they exceed the lead action level.

(ii) *Step 2*: *Complete a CCT feasibility study for reoptimization.*

(A) Large or medium water systems with lead service lines that exceed the lead action level shall complete the CCT feasibility study for reoptimization using pipe rigs/loops and submit a permit application within 28 months after the end of the tap sampling period in which the system exceeded the lead action level.

(B) Large or medium water systems without lead service lines that exceed the lead or copper action level shall complete the CCT feasibility study for reoptimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the lead or copper action level.

(C) Large or medium water systems with lead service lines that exceed the copper action level shall complete the CCT feasibility study for reoptimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the copper action.

(D) Small water systems and nontransient noncommunity water systems that exceed the lead or copper action level shall complete the CCT feasibility study for reoptimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the lead or copper action.

(E) Small water systems and nontransient noncommunity water systems that exceed only the lead action level and were not approved for a compliance flexibility option under subsection (d), shall complete the CCT feasibility study for reoptimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the lead action level.

(iii) *Step 3: Obtain a permit for construction or modification of OCCT.* After the water system completes Step 2 in subparagraph (ii), the water system shall obtain a permit within 8 months.

(iv) *Step 4*: *Complete construction or modifications of OCCT.* Water systems shall complete installation of reoptimized OCCT and obtain the operation permit within 12 months of obtaining a permit for construction or modification of OCCT.

(v) *Step 5*: *Complete follow-up monitoring in accordance with § 109.1103(a)(1.1) and (b.1)(3).* Water systems shall complete follow-up monitoring within 12 months after receiving the operation permit for construction or modification of OCCT.

(vi) *Step 6*: *Submit a request for Department designation of OWQPs.* Water systems shall complete this step within 30 days of completing follow-up monitoring under Step 5 in subparagraph (v) and obtain Department designated OWQPs within 6 months after completing follow-up monitoring under Step 5.

(vii) *Step 7*: *Operate in compliance with Department designated OWQPs and continue to conduct monitoring in accordance with § 109.1103*. Water systems shall comply with the Department designated OWQPs and conduct standard monitoring in accordance with § 109.1103(a)(1.1)(i)(C)(V) and WQP monitoring in accordance with § 109.1103(b.1)(4).

(2.2) *CCT steps and deadlines for water systems optimizing CCT or without CCT.* Any water system without CCT or not deemed to have OCCT, under paragraph (1.3), shall complete the following CCT steps in accordance with the applicable schedule specified in this paragraph. The treatment steps must also be completed in accordance with the requirements specified in paragraph (3.1). Water systems shall conduct lead and copper tap sampling in accordance with § 109.1103 while completing the CCT steps in this paragraph.

(i) *Step 1*: *Initiate mandatory pipe rig/loop study.* Large or medium water systems with lead service lines that exceed the lead action level shall harvest lead service lines from the distribution system, construct flowthrough pipe rigs/loops and operate the rigs/loops with finished water within 1 year after the end of the tap sampling period in which they exceed the lead action level.

(ii) *Step 2*: *Complete a CCT feasibility study for optimization.*

(A) Large or medium water systems with lead service lines that exceed the lead action level shall complete the CCT feasibility study for reoptimization using pipe rigs/loops and submit a permit application within 28 months after the end of the tap sampling period in which the system exceeded the lead action level.

(B) Large water systems without lead service lines that exceed the lead PQL or copper action level shall complete the CCT feasibility study for optimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the lead PQL or copper action level.

(C) Medium water systems without lead service lines that exceed the lead or copper action level shall complete the CCT feasibility study for optimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the lead or copper action level.

(D) Medium water systems with lead service lines that exceed the copper action level shall complete the CCT feasibility study for optimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the copper action level.

(E) Small water systems and nontransient noncommunity water systems that exceed the lead or copper action level shall complete the CCT feasibility study for optimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the lead or copper action level.

(F) Small water systems and nontransient noncommunity water systems that exceed only the lead action level and were not approved for a compliance flexibility option under subsection (d), shall complete the CCT feasibility study for optimization and submit a permit application within 16 months after the end of the tap sampling period in which the system exceeded the lead action level.

(iii) *Step 3: Obtain a permit for construction of OCCT.* After the water system completes Step 2 in subparagraph (ii), the water system shall obtain a permit within 8 months.

(iv) *Step 4*: *Complete construction of OCCT.* Water systems shall complete installation of OCCT and obtain the operation permit within 24 months of obtaining a permit for construction or modification of OCCT.

(v) *Step 5*: *Complete follow-up monitoring in accordance with § 109.1103(a)(1.1) and (b.1)(3).* Water systems shall complete follow-up monitoring within 12 months after receiving the operation permit for construction of OCCT.

(vi) *Step 6*: *Submit a request for Department designation of OWQPs.* Water systems shall submit a request for Department designated OWQPs within 30 days of completing follow-up monitoring under Step 5 in subparagraph (v) and obtain Department designated OWQPs within 6 months after completing follow-up monitoring under Step 5.

(vii) *Step 7: Operate in compliance with Department designated OWQPs and continue to conduct monitoring in accordance with § 109.1103*. Water systems shall comply with the Department designated OWQPs and conduct standard monitoring in accordance with § 109.1103(a)(1.1)(i)(C)(V) and WQP monitoring in accordance with § 109.1103(b.1)(4).

(3) **[*Corrosion control treatment feasibility study.* The system shall prepare and submit a corrosion control treatment feasibility study to the Department by the applicable deadline established in paragraph (2). The purpose of this study is to identify corrosion control priorities, evaluate viable corrosion control approaches and select the optimal corrosion control treatment. As a minimum, the system shall include the information required in a basic study described in subparagraph (i). The Department may require a water supplier to conduct demonstration testing if the Department determines that a basic study is insufficient to determine optimal corrosion control treatment. Demonstration testing may also be required when a system continues to exceed an action level after corrosion control treatment has been installed.**

(i) The basic study shall include the following information:

(A) **A sample site location plan prepared in accordance with § 109.1103(g).**

(B) **A summary of lead and copper and water quality parameter monitoring results performed in accordance with § 109.1103. These results shall be evaluated considering the location of sample sites within the distribution system and used as the basis for considering corrosion control treatment options.**

(C) **An evaluation of source water contributions and the need for source water treatment.**

(D) **A desktop evaluation of alkalinity and pH adjustment, calcium hardness adjustment and corrosion inhibitor addition or a combination of these treatments. The evaluation shall include analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration. If source water treatment is needed to achieve optimal corrosion control, the water supplier shall evaluate the source water treatments specified in paragraph (4).**

(E) **An identification of chemical, physical or regulatory constraints on the use of a particular corrosion control treatment, such as its adverse effects on other treatment processes or the ability of wastewater facilities to comply with applicable statutes or regulations.**

(F) **A recommendation of optimal corrosion control treatment, including source water treatment, if applicable, for the system based on the supporting documentation specified in clauses (A)—(E). When a system has multiple sources, it may be necessary for the system to provide different corrosion control treatment for different sources.**

(G) **Recommended water quality parameter performance requirements for the selected corrosion control treatment.**

(H) **A proposed schedule for completion of the remaining corrosion control treatment compliance steps in accordance with paragraph (2), including, but not limited to, treatment design and permit application submittal, financing and construction, and initiation of operation.**

(ii) A demonstration study shall include the evaluation of corrosion control treatments using pipe rig/loop tests, metal coupon tests or partial system tests] {Reserved}.

(3.1) *Description of CCT steps*.

(i) *Step 1.* Large or medium water systems with lead service lines that exceed the lead action level shall conduct pipe rig/loop studies using harvested lead service lines from its distribution system to assess the effectiveness of CCT options on the existing pipe scale. For these systems, metal coupon tests can be used as a screen to reduce the number of options that are evaluated in the pipe rig/loop studies to the current water quality and at least two additional treatment options. A water system shall receive Department approval and conduct pipe rig/loop studies as specified in the Department's *Corrosion Control Treatment—Basic Feasibility Study* guidance document.

(ii) *Step 2.* The system shall prepare and submit a CCT feasibility study to the Department as part of the construction permit application by the applicable deadline.

(A) The purpose of the feasibility study is to identify corrosion control priorities, evaluate viable corrosion control approaches and select OCCT. The study must include the following information:

(I) A sample site plan prepared in accordance with § 109.1109(c).

(II) A summary of lead and copper and WQP monitoring results performed in accordance with § 109.1103.

(III) A desktop evaluation of the treatments specified in items (-a-)—(-d-) individually or, if appropriate, in combinations, using pipe rig/loop tests, metal coupon tests or analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration, or computer models found acceptable to the Department.

(-a-) Alkalinity and pH adjustment or readjustment.

(-b-) The addition of an orthophosphate or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective corrosion inhibitor residual concentration in all test samples. This evaluation is not necessary for a water system that is reoptimizing OCCT and already utilizing such an inhibitor.

(-c-) The addition of an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 1 mg/L (as PO_4) in all test samples. This evaluation is not necessary for a water system reoptimizing OCCT that already uses an orthophosphate-based inhibitor process which is meeting the residual concentration of 1 mg/L (as PO_4).

(-d-) The addition of an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 3 mg/L (as PO_4) in all test samples. This evaluation is not necessary for a water system reoptimizing OCCT

that already uses an orthophosphate-based inhibitor process which is meeting the residual concentration of 3 mg/L (as PO_4).

(IV) An identification and documentation of chemical, physical or regulatory constraints on the use of a particular CCT, such as its adverse effects on other treatment processes or the ability of wastewater facilities to comply with applicable statutes or regulations. Systems required to complete treatment Step 1 in subparagraph (i) or demonstration testing under clause (B) shall not exclude treatment strategies from the studies based on the constraints identified in this subclause unless the treatment was found to be ineffective in a previous pipe loop/rig study.

(V) A recommendation of OCCT or reoptimized OCCT for the system, based on the supporting documentation specified in subclauses (I)—(IV). When a system has multiple sources, it may be necessary for the system to provide different OCCT for different sources.

(VI) Recommended WQPs for the selected OCCT.

(VII) A proposed schedule for completion of the remaining CCT steps in accordance with paragraphs (2.1) and (2.2), including, but not limited to, treatment design and permit application submittal, financing and construction, and initiation of operation.

(B) In addition to the water systems required to complete treatment Step 1 in subparagraph (i), the Department may require any water system to conduct demonstration testing if the Department determines that a feasibility study is insufficient to determine OCCT. Demonstration testing may also be required when a system continues to exceed an action level after OCCT has been installed. A demonstration study must include the evaluation of CCT using pipe rig/loop tests or metal coupon tests.

(C) The Department's *Corrosion Control Treatment—Basic Feasibility Study* guidance document sets forth procedures which the Department finds to be acceptable for conducting a feasibility study. Other procedures may be approved by the Department if the water system demonstrates the alternate procedure is reliable.

(iii) *Step 3.* Obtain a construction permit in accordance with § 109.503 (relating to public water system construction permits) as required under paragraph (2.1) or (2.2).

(iv) *Step 4.* Complete construction or modifications of OCCT in accordance with the plans and specifications approved in the construction permit, submit a certificate of construction in accordance with § 109.504(a) (relating to public water system operation permits) and obtain an operation permit as required under paragraph (2.1) or (2.2).

(v) *Step 5.* Complete follow-up monitoring in accordance with § 109.1103(a)(1.1) and (b.1)(3) on the applicable schedule specified in paragraphs (2.1) and (2.2).

(vi) *Step 6.* Following completion of Step 5 in subparagraph (v), obtain Department designated WQPs within the time frames established in paragraphs (2.1) and (2.2). The

request must contain a summary of analyses from follow-up sampling conducted under Step 5 and recommended WQPs if different from those recommended by the water system as part of the construction permit application. The Department designated WQPs will be specified in the amended operation permit issued in accordance with paragraphs (2.1) and (2.2). The Department may designate values for additional WQPs in the operation permit, if the Department determines these requirements are necessary to assure OCCT. Depending on the type of CCT, the WQPs will be designated as follows:

(A) For pH:

(I) A minimum value or range of values to be maintained at each entry point to the distribution system.

(II) A minimum value to be maintained in distribution system. This value must be equal to or greater than 7.0 unless the Department agrees that meeting a pH level of 7.0 is not technologically feasible or is not necessary for OCCT.

(B) If a corrosion inhibitor is used:

(I) A minimum concentration or range of concentrations for orthophosphate (as PO_4) or silicate to be maintained at each entry point.

(II) A minimum concentration for orthophosphate (as PO_4) or silicate that the Department determines is necessary to maintain a passivating film on the interior walls of the pipes in the distribution system. When orthophosphate is used for OCCT designations for systems previously without CCT, the orthophosphate concentration must be equal to or greater than 0.5 mg/L (as PO_4) and for OCCT designations for systems previously with CCT, the orthophosphate concentration must be equal to or greater than 1.0 mg/L (as PO_4), unless the Department determines that meeting the applicable minimum orthophosphate residual is not technologically feasible or is not necessary for OCCT.

(C) If alkalinity is adjusted as part of OCCT, a minimum concentration or range of concentrations for alkalinity to be maintained at each entry point and in all tap samples.

(vii) *Step 7*. Any water system that has installed or reoptimized OCCT under treatment Steps 1—6 in subparagraphs (i)—(vi) shall:

(A) Continue to operate and maintain OCCT, including WQPs at or above minimum values or within specified ranges designated by the Department in the operation permit issued in accordance with paragraphs (2.1) and (2.2).

(I) A system is out of compliance with the requirements of this subparagraph for a 6-month period if it has excursions for any Department specified WQPs on more than 9 days, cumulatively, during the 6-month monitoring period. An excursion occurs whenever the daily value for one or more of the WQPs is below the minimum value or

outside the range of values designated by the Department. An excursion of more than one daily value for a WQP in a single day counts as one excursion day.

(II) Daily values are calculated as follows:

(-a-) On days when more than one sample for the WQP is collected at a sampling location, the daily value must be the average of all results collected during the day including continuous monitoring or grab samples, or both.

(-b-) On days when only one sample for the WQP is collected at a sampling location, the daily value must be the result of that sample.

(-c-) On days when there is no valid sample data for the WQP at a sampling location, the daily value must be the most recent calculated daily value for which a WQP was sampled at that location.

(B) Continue to conduct lead and copper tap monitoring and WQP monitoring in accordance with § 109.1103.

(4) *Source water treatment **steps***. **[A system that must reduce the concentration of lead or copper in its source water to achieve optimal corrosion control shall provide source water treatment] A water system which exceeds either the lead or copper action level shall complete the following applicable source water treatment steps**.

(i) ***Step 1: Complete entry point monitoring and determine need for source water treatment.*** A system which exceeds either the lead or copper action level shall conduct **[initial source water monitoring] lead and copper entry point monitoring** in accordance with § **[109.1103(a)(3)] 109.1103(f.1)**. The water supplier shall use the results of this monitoring along with the results of lead and copper tap and **[water quality parameter] WQP** monitoring to determine **[corrosion control treatment priorities including]** the need for source water treatment **[as part of the corrosion control feasibility study required under paragraph (3)]**. **Within 6 months after the end of the tap sampling period in which the lead or copper action level was exceeded, the water system shall make a recommendation in writing to the Department of one of the following:**

(A) A determination that source water treatment is not required, based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps. The Department will notify the system within 6 months whether the Department agrees with this recommendation or that source water treatment is required as specified under clause (B). If the Department agrees with the recommendation, no further steps are necessary under this subsection.

(B) A determination that source water treatment is required. The water system shall also submit a permit application for construction of source water treatment in accordance with § 109.503. Prior to submitting the permit application, the water system shall evaluate treatments including ion exchange, reverse osmosis, lime softening, coagulation/filtration and other treatments acceptable to the Department. The water system shall recommend a

source water treatment and maximum permissible lead and copper entry point levels for the selected treatment in the construction permit application.

(ii) [If source water treatment needs to be evaluated, the water supplier shall evaluate treatments including ion exchange, reverse osmosis, lime softening and coagulation/filtration. The water supplier shall recommend a source water treatment along with the recommendation for optimal corrosion control treatment. The water supplier shall include recommended source water treatment performance requirements for the selected treatment] {Reserved}.

(ii.1) *Step 2: Obtain construction permit.* The construction permit must be obtained within 12 months after the end of the tap sampling period in which the lead or copper action level was exceeded.

(iii) **[If, after review of the feasibility study, the Department determines that source water treatment is necessary as part of a system's overall approach to achieving optimal corrosion control, the water supplier shall provide source water treatment under the compliance schedule established in paragraph (2) for corrosion control treatment. The Department may require the water supplier to provide source water treatment for lead on an earlier schedule if the Department determines that lead in the source water presents an imminent hazard to the public health] {Reserved}**.

(iii.1) *Step 3: Complete construction of source water treatment.* Complete construction of source water treatment in accordance with the plans and specifications approved in the construction permit, submit a certificate of construction and obtain an operation permit in accordance with § 109.504(a) within 24 months of obtaining the construction permit.

(iv) **[Following the installation of source water treatment, the water supplier shall conduct source water monitoring in accordance with § 109.1103(c)(3). Based on the results of this monitoring and lead and copper tap and water quality parameter monitoring, the Department will establish source water treatment performance requirements when water quality parameter performance requirements are established for the system under paragraph (5)] {Reserved}**.

(iv.1) *Step 4: Follow-up monitoring.* Complete follow-up tap monitoring and entry point monitoring in accordance with § 109.1103(a)(1.1)(i)(C)(VI) and (f.1)(3) within 12 months of completing construction of source water treatment.

(v) *Step 5: Designation of maximum permissible entry point levels.* Within 30 days of completing Step 4 in subparagraph (iv.1), the water system shall submit a request for an amended operation permit in accordance with § 109.504 to designate the maximum permissible lead and copper entry point levels. The Department will review results of lead and copper entry point and tap monitoring, taken both before and after the water system installed source water treatment, and designate maximum permissible lead and copper entry point levels. The designated levels must reflect the contaminant removal capability of the treatment when properly operated and maintained. The Department will designate these

levels within 6 months of completion of follow-up monitoring if the water system submits the request within the time frame specified in this subparagraph.

(vi) *Step 6: Continued operation and monitoring.* Operate in compliance with Department designated maximum permissible lead and copper entry point levels and continue to conduct monitoring in accordance with § 109.1103. The system is out of compliance with this paragraph if the level of lead or copper at the entry point is greater than the maximum permissible level designated by the Department.

(5) **[*Water quality parameter performance requirements.* The Department will designate optimal corrosion control treatment water quality parameter performance requirements for large water systems by June 30, 1998, and for medium or small water systems within 18 months after the system completes construction or modification of corrosion control treatment, if the water supplier submits a request for Department designation of performance requirements within the time frames established in paragraph (2) and the request contains the information specified in § 109.1107(a)(3)(v) (relating to system management responsibilities). The performance requirements will be specified in the amended operation permit issued in accordance with § 109.1105(c). A system shall maintain the designated water quality parameter performance requirements at or above minimum values or within specified ranges designated by the Department. The Department may designate values for additional water quality parameters if the Department determines these requirements are necessary to assure optimal corrosion control treatment. Depending on the type of corrosion control treatment, the performance requirements will be designated as follows:**

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

(ii) **A minimum pH value measured in distribution system samples.**

(iii) **If a corrosion inhibitor is used, a minimum concentration or range for the inhibitor necessary to form a passivating film on the interior walls of the distribution system pipes. The inhibitor concentration is measured at each entry point and in all distribution system samples.**

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

(v) **If calcium carbonate stabilization is used as part of optimal corrosion control treatment, a minimum concentration or range of concentrations for calcium measured in distribution system samples] {Reserved}.**

(5.1) *Completing CCT steps for small and medium water systems without CCT.*

(i) Any small or medium water systems without CCT required to complete the steps in paragraph (2.2) that do not exceed the lead action level or copper action level during two consecutive 6-month monitoring periods prior to the start of Step 2 in paragraph (2.2)(ii) or prior to or concurrent with the end of Step 3 in paragraph (2.2)(iii) may stop completing the steps.

(A) Medium water systems without CCT and with lead service lines shall complete a CCT study under Step 1 in paragraph (2.2)(i) even if they qualify for this exception.

(B) A 90 th percentile concentration at or below the lead action level or copper action level based on less than the required minimum number of samples under § 109.1103 cannot be used to meet the requirements of this paragraph.

(C) Eligible systems can only use this exception once.

(ii) Any system that starts Step 4 in paragraph (2.2)(iv) shall complete all the remaining steps in paragraphs (2.2)(v) – (vii) and is not permitted to stop the steps.

(iii) Any small or medium water system without CCT under subparagraph (i) that stopped the steps in paragraph (2.2) and subsequently exceeds either the lead or copper action level must complete the CCT steps in paragraph (2.2) beginning with the first treatment step that was not completed.

(iv) The Department may require a water system to repeat treatment steps previously completed by the water system when the Department determines that this is necessary to implement the treatment requirements in this subsection. The Department will notify the system in writing of such a determination and explain the basis for its decision.

(c) *Notification requirements for upcoming long-term change in treatment or source.* As early as possible but no later than 6 months prior to the addition of a new source or any long-term change in treatment, a water system shall submit written documentation describing the addition of a new source or any long-term change in treatment to the Department. A water system may not implement the addition of a new source or long-term change in treatment without Department review and approval. A water system may need to take actions before or after the addition of a new source or long-term change in treatment, as required by the Department, to ensure that the system will operate and maintain OCCT.

(d) *Small water system compliance flexibility options*. Small community water systems serving 3,300 or fewer persons that have control over and access to all premise plumbing and service connections and all nontransient noncommunity water systems that have control over and access to all plumbing in its buildings that exceed the lead action level, but do not exceed the copper action level, may choose one of the compliance alternatives in this subsection. If one of the compliance alternatives is denied by the Department, the system may recommend the other compliance alternative. Systems not choosing one of these options shall comply with the requirements in subsection (b).

(1) *Alternative compliance option requirements for small community water systems and nontransient noncommunity water systems*. Small community water systems and nontransient noncommunity water systems that elect to use one of the alternative compliance options shall:

(i) Submit the recommendation in accordance with the following schedule:

(A) Within 3 months of the end of the tap sampling period in which the lead action level exceedance occurred, the system shall recommend one of the compliance alternatives specified in paragraph (4) or (5). Within 2 months of receiving the recommendation, the Department will approve or disapprove the recommendation in writing.

(B) Within 3 months after receiving the Department's disapproval of the first compliance alternative, submit the other compliance alternative specified in paragraph (4) or (5). Within 2 months of receiving the new recommendation, the Department will approve or disapprove the new recommendation in writing. Instead of recommending the second alternative compliance option, the system shall comply with the applicable CCT requirements under subsection (b)(2.1) for systems with corrosion control or subsection (b)(2.2) for systems without corrosion control. The system shall follow the schedules, beginning in subsection (b)(2.1)(ii) or (b)(2.2)(ii).

(ii) Collect WQPs in accordance with § 109.1103(b.1)(2) for systems who have not installed OCCT in accordance with subsection (b)(2.2) or systems who have not reoptimized OCCT in accordance with subsection (b)(2.1).

(iii) Continue to operate and maintain OCCT, for systems with OCCT installed, until the Department determines, in writing, that it is no longer necessary, and meet any requirements that the Department determines to be appropriate before implementing the Department approved alternate compliance option.

(iv) Submit the alternative compliance recommendation on forms provided by the Department.

(2) *CCT requirements if the Department disapproves an alternative compliance.* If the Department does not approve an alternative compliance option, the system shall comply with the applicable CCT requirements under subsection (b)(2.1) for systems with corrosion control or subsection (b)(2.2) for systems without corrosion control. The system shall follow the schedules, beginning in subsection (b)(2.1)(ii) or (b)(2.2)(ii).

(3) *Requirements if a system fails to implement an approved alternative compliance option or the Department revokes approval.* If the system fails to implement the approved alternative compliance option, or the Department revokes approval for the alternate compliance option, then the system shall follow the requirements for small and nontransient noncommunity water systems as described under subsection (b)(2.1) for systems with corrosion control or subsection (b)(2.2) for systems without corrosion control.

(4) *Alternative compliance option: POU devices.*

(i) A water system that elects the alternate compliance option in this paragraph shall install, maintain, and monitor POU devices in each household and each building served by the water system as an alternative compliance option. The water system shall install a POU device to every tap that is used for cooking or drinking on a schedule specified by the Department, but not to exceed 3 months.

(ii) The POU devices must be independently certified by a third party to meet the ANSI/NSF standard applicable to the specific type of POU device to reduce lead in drinking water.

(iii) The POU devices must be:

(A) Maintained by the water system in accordance with the manufacturer's recommendations and the ANSI/NSF certification requirements or on a more frequent schedule if required by the Department to ensure continued effective filtration, including but not limited to changing filter cartridges and resolving any operational issues.

(B) Equipped with mechanical warnings to ensure that consumers are automatically notified of operational problems.

(iv) The water system shall provide documentation to the Department to certify maintenance of the POU devices in accordance with § 109.1107(a)(6.1)(i).

(v) The water system shall monitor one-third of the POU devices for lead each year and all POU devices must be monitored within a 3-year period.

(A) First-liter tap samples collected under this subparagraph must be taken after water passes through the POU device to assess its performance.

(B) Samples must be one liter in volume and have had a minimum 6-hour stagnation time.

(C) The water system shall report the results from the tap sampling no later than 10 days after the end of the tap sampling period in accordance with § 109.1107(a)(6.1)(i).

(D) All tap samples must be at or below the lead action level.

(E) If a sample exceeds the lead action level, the water system shall notify the persons served by the POU device, and/or building management no later than one business day after receiving the tap sample results. The water system shall document and take corrective action at each site where the sample result exceeds the lead action level. Corrective action must be completed in accordance with § 109.1107(a)(6.1)(i).

(vi) The water system shall provide public education to consumers to inform them of proper use of POU devices.

(A) *Content.* All small community water systems serving 3,300 or fewer persons and nontransient noncommunity water systems that are approved to implement POU devices under this paragraph shall provide public education materials to inform users how to properly use POU devices to maximize the units' effectiveness in reducing lead levels in drinking water. Public education materials must meet the requirements of § 109.1104(a)(1) (relating to public education and notification, supplemental monitoring and mitigation requirements).

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

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

(vii) If the water system fails to operate and maintain the POU devices, the Department may require the water system to comply with the applicable CCT requirements under subsection (b)(2.1) or subsection (b)(2.2).

(viii) The water system shall operate and maintain the POU devices in future tap monitoring periods until one of the following occurs:

(A) The system receives Department approval to select the other compliance flexibility option and has fully implemented it.

(B) The system chooses to comply with the CCT requirements and completes all applicable steps under subsection (b)(2.1) or subsection (b)(2.2)

(C) The Department requires the water system to comply with the applicable CCT requirements under subsection (b)(2.1) or subsection (b)(2.2) and has obtained an operation permit. The system shall follow the schedules, beginning in subsections (b)(2.1)(ii) or (b)(2.2)(ii).

(5) *Alternative compliance option: replacement of lead-bearing plumbing.*

(i) A water system that has control over and access to all plumbing and service connections supplied by the system, is not served by lead, GRR or unknown service lines and that elects the alternate compliance option in this paragraph shall replace all potable plumbing that is not lead free in accordance with section 1417 of the Federal act (42 U.S.C. § 300g-6), as amended by the Reduction of Lead in Drinking Water Act (Public Law 111–380, 124 Stat. 4131), and any future amendments applicable at the time of replacement. The replacement of all lead-bearing plumbing must occur on a schedule approved by the Department but not to exceed 1 year.

(ii) Water systems shall provide certification to the Department that all lead-bearing material has been replaced within 1 year of the Department approval of this compliance option as required in 109.1107(a)(6.1)(ii).

(e) *Distribution System and Site Assessment.* A water system shall conduct the following steps when an individual tap sample exceeds the lead action level for monitoring conducted under § 109.1103(a) and the site is included in the site sample plan.

(1) *Step 1: Additional WQP monitoring.* The water system shall measure the WQPs specified in subparagraph (i) at a location meeting one of the descriptions in subparagraph (ii) within 5 days of receiving the sample result that exceeded the action level. Water systems without CCT are not required to collect these samples.

(i) The water system shall measure the following WQPs:

(A) pH.

(B) Alkalinity.

(C) Orthophosphate (as PO_4), when an inhibitor containing an orthophosphate compound is used.

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

(ii) The WQPs must be measured at one of the following locations:

(A) An existing WQP sample site that is on the same size water main, in the same pressure zone, and located within a half mile of the site with the action level exceedance.

(B) A new WQP site added in accordance with subparagraph (iii).

(iii) All water systems required to meet Department designated OWQPs that do not have an existing site as specified under subparagraph (ii)(A), shall add a new site that is on the same size water main, in the same pressure zone, and located within a half mile of the site with the action level exceedance. Sites must be added in accordance with 109.1103 (f)(3)(ii). When a system exceeds twice the number of sites, the water system shall determine which sites can better assess the effectiveness of the CCT and provide documentation to the Department justifying the decision. The Department will notify the system if it disagrees with the water system assessment or if it determines that retaining all the WQP sites and exceeding the maximum number of sites is necessary to demonstrate OCCT.

(iv) All monitoring required under this paragraph is in addition to WQP monitoring required under § 109.1103(b.1).

(2) *Step 2: Follow-up sample.* Water systems shall collect a follow-up sample for lead at any tap sample site that exceeds the lead action level within 30 days of receiving the sample results. The follow-up sample may use different sample volumes or different sample collection procedures, if needed to better assess the source of elevated lead levels. Samples collected under this section must be submitted to the Department but must not be included in the 90th percentile calculation for compliance monitoring conducted under § 109.1103(a). If the water system is unable to collect a follow-up sample at a site, the water system shall provide documentation to the Department, explaining why it was unable to collect a follow-up sample.

(3) *Step 3: Distribution system recommendation.* Water systems shall evaluate the results of the monitoring conducted under this subsection to determine if adjustment or modification of the OCCT, or other distribution system actions are necessary. Following this evaluation, the water system shall submit a recommendation to the Department within 6 months after the end of the tap sampling period in which the site(s) exceeded the lead action level. CCT adjustment or modification may not be necessary to address every exceedance, in some cases implementing distribution system best management practices such as flushing to reduce water age may be more appropriate. The recommendation must comply with the following:

(i) A water system shall note the cause of the elevated lead level, if determined during Steps 1 and 2 in paragraphs (1) and (2), in its recommendation to the Department.

(ii) If the recommendation includes installation or modification of OCCT, the recommendation must be made in the form of a permit application in accordance with § 109.503 and follow the requirements of subsection (b).

(iii) Systems required to optimize or reoptimize OCCT under subsection (b) do not need to submit a treatment recommendation for distribution system and site assessment.

(4) *Step 4: Department response.* The Department will respond to the recommendation made in Step 3 in paragraph (3) as follows:

(i) If the recommendation includes installation or modification of OCCT, and the Department approves the recommendation, the approval will be in the form of a construction permit in accordance with § 109.503.

(ii) If the recommendation includes adjustment to OCCT, and the Department approves the recommendation, new WQPs will be designated that comply with the requirements of treatment Step 6 in subsection (b)(3.1)(vi).

(iii) If the Department does not approve the recommendations in accordance with subparagraphs (i) or (ii), the water system shall recommend an alternate approach and obtain Department approval within 6 months of the Department's disapproval.

(5) *Step 5: Implementation of approved recommendation.*

(i) If the Department-approved recommendation requires the water system to modify OCCT, the water system shall complete modifications and obtain an amended operation permit within 12 months after completion of Step 4 in paragraph (4).

(ii) For systems without CCT, if the Department-approved recommendation requires the water system to install OCCT, the water system shall follow the treatment steps in accordance with subsection (b)(2.2) and (3.1).

(iii) If the Department designates new WQPs under Step 4, the water system shall begin complying with the new WQPs immediately upon issuance of an amended operation permit.

(6) *Step 6: Treatment steps for systems modifying OCCT.* Water systems that modify OCCT under Step 5 in paragraph (5)(i) shall complete treatment Steps 5—7 specified under subsection (b)(2.1)(v)–(vii) or (2.2)(v)–(vii).

§ 109.1103. Monitoring requirements.

(a) **[*Initial monitoring*] *Monitoring requirements for lead and copper in tap water*. All water systems shall sample for lead and copper in accordance with the requirements of this subsection, from taps used to provide water for human consumption and from at sites selected in accordance with § 109.1109(c) (relating to service line and connector inventory, service line replacement plan**

and sample site plan). The lead and copper action levels and lead PQL referenced within this section are defined in § 109.1102(a) (relating to lead and copper action levels, 90th percentile calculation and treatment technique requirements).

(1) **[*Initial lead and copper tap monitoring.* The initial lead and copper tap monitoring for community and nontransient noncommunity water systems consists of two consecutive 6-month periods. Monitoring periods begin in January and July and end in June and December.**

(i) **In accordance with 40 CFR 141.86(d)(1) (relating to monitoring requirements for lead and copper in tap water), the first 6-month monitoring period for large, medium and small water systems shall begin on the following dates:**

System size	*1st monitoring period begins on*
Large	**January 1, 1992**
Medium	**July 1, 1992**
Small	**July 1, 1993**

(ii) **The first 6-month monitoring period for a new water system created after June 26, 1995, shall begin with the next 6-month monitoring period following the issuance of an operations permit or following the system's provision of water to a sufficient number of sampling sites for the water supplier to comply with sample site requirements under subsection (g), whichever period is later.**

(iii) **A large water system shall monitor during two consecutive 6-month periods and shall comply with the corrosion control treatment compliance schedule under § 109.1102(b)(2) (relating to action levels and treatment technique requirements) or achieve optimal corrosion control treatment under § 109.1102(b)(1)(ii).**

(iv) **A small or medium water system shall monitor during each 6-month monitoring period until one of the following occurs:**

(A) **The system exceeds either the lead or copper action level and is therefore required to comply with the corrosion control treatment compliance schedule under § 109.1102(b)(2).**

(B) **The system meets both the lead and copper action levels during two consecutive 6-month monitoring periods, in which case the system qualifies for reduced monitoring in accordance with subsection (e)(1).**

(v) **A system shall collect at least one sample during each monitoring period from the number of sample sites listed in the following chart. The sample sites shall be selected in accordance with subsection (g).**

System size (# of people served)	*# of Sample Sites*
> 100,000	**100**
10,001 to 100,000	**60**
3,301 to 10,000	**40**
501 to 3,300	**20**
101 to 500	**10**
100 or fewer	**5] {Reserved}.**

(1.1) *Standard monitoring.* Standard monitoring is a 6-month tap monitoring period that begins on January 1 or July 1 and consists of collecting at least one sample from the number of sites listed in the following chart:

System size (# of people served)	*Standard monitoring number of sites*
>100,000	100
10,001 to 100,000	60
3,301 to 10,000	40
501 to 3,300	20
101 to 500	10
≤100	5

(i) The following systems shall conduct standard monitoring for at least two consecutive tap monitoring periods beginning January 1 or July 1, whichever is sooner, following the tap sampling period in which the criterion requiring standard monitoring is met, unless a different date is listed. Systems shall continue monitoring in accordance with this subparagraph until the criteria for reduced monitoring under paragraph (2) is met.

(A) All water systems with lead or GRR service lines in their inventory as of November 1, 2027, including those deemed optimized under § 109.1102(b)(1.2) and (1.3) (relating to lead and copper action levels, 90th percentile calculation and treatment technique requirements) shall begin standard monitoring January 1, 2028, unless the system has, by that date, met all the following criteria:

(I) The system conducts compliance monitoring at sites that meet the correct priority tiering, targeting sites served by lead and GRR service lines in accordance with § 109.1109(c)(1).

(II) The system collects samples in accordance with all sample collection requirements specified in paragraph (4) and § 109.1109(c)(1)(viii).

(III) The system collects either first-liter samples or first-liter and-fifth-liter paired samples in accordance with paragraph (4).

(IV) The system shall provide documentation to the Department by December 31, 2027, that demonstrates the criteria in subclauses (I) – (III) have been met.

(B) Any water system whose most recent 90th percentile lead or copper results as of November 1, 2027, exceeds the lead or copper action level shall begin standard monitoring January 1, 2028.

(C) Systems meeting any of the following criteria:

(I) Any water system that exceeds a lead or copper action level.

(II) Any system that fails to operate at or above the minimum value or within the range of values for the OWQP designated by the Department under § 109.1102(b)(3.1) for more than 9 days in any tap monitoring period as specified in subsection (b.1).

(III) Any water system that becomes a large water system without CCT or any large water system without CCT whose lead 90th percentile exceeds the lead PQL.

(IV) Any water system that installs OCCT or reoptimizes OCCT as a result of exceeding the lead or copper action level, or any water system that adjusts OCCT following a Distribution System and Site Assessment. Systems conducting standard monitoring under this criterion shall continue standard monitoring until the Department designates new OWQP, at which point systems shall continue standard monitoring under subclause (V).

(V) Any water system for which the Department has designated new values for OWQP under § 109.1102.

(VI) Any water system that installs source water treatment under § 109.1102(b)(4).

(VII) Any water system that has notified the Department in writing in accordance with § 109.1107(a)(3.1) (relating to system management responsibilities) of an upcoming addition of a new source or long-term change in treatment other than OCCT, unless the Department determines that the addition of the new source or long-term change in treatment is not significant and, therefore, does not warrant more frequent monitoring.

(VIII) Any water system without lead or GRR service lines in its inventory that notifies the Department under § 109.1109(a)(9)(ii) of any subsequently discovered lead or GRR service lines in its distribution system, unless the system replaces all the discovered service lines before the start of the next tap monitoring period.

(ii) A water system approved to operate after November 1, 2027, shall begin standard monitoring during the first 6-month monitoring period, beginning either January 1 or July 1, following the issuance of an operation permit or noncommunity water system approval.

(2) **[*Initial water quality parameter monitoring.* A system shall measure the applicable water quality parameters in the distribution system and at each entry point. A large water system shall conduct initial water quality parameter monitoring during each initial monitoring period specified in paragraph (1). A small or medium water system shall conduct initial water quality parameter monitoring during the first monitoring period in which the system exceeds the lead or copper action level**.

(i) The following water quality parameters shall be measured as applicable:

(A) **pH.**

(B) **Alkalinity.**

(C) **Orthophosphate, when an inhibitor containing a phosphate compound is used.**

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

(E) **Calcium.**

(F) **Conductivity.**

(G) **Water temperature.**

(ii) **A system shall collect two sets of water quality parameter distribution samples from the following number of sample sites. The sets of samples shall be collected from the same sample sites on different days and analyzed for the applicable water quality parameters.**

System size (# of people served)	*# of Sample Sites*
> 100,000	**25**
10,001 to 100,000	**10**
3,301 to 10,000	**3**
501 to 3,300	**2**
500 or fewer	**1**

(iii) **A system shall also collect two sets of water quality parameter samples at each entry point. The sets of samples shall be collected on different days and analyzed for the applicable water quality parameters] {Reserved}.**

(2.1) *Reduced monitoring.* Reduced monitoring refers to an annual or triennial tap monitoring period based on the most recent 90th percentile value for the water system. Each annual or triennial tap monitoring period includes one tap sampling period. A system conducting reduced monitoring shall collect at least one sample from the number of sites specified in the following chart unless otherwise specified in this paragraph. Reduced monitoring sites must be selected in accordance with the tap sample site selection requirements in § 109.1109(c)(1). Lead and copper sampling results collected from sites where POU devices are installed under § 109.1102(d) cannot be used to meet the criteria for reduced monitoring under this section. The Department may specify sampling locations when a system is conducting reduced monitoring and may also require an eligible system to conduct more frequent monitoring.

System size (# of people served)	*Number of sites*
>100,000	**50**
10,001 to 100,000	**30**
3,301 to 10,000	**20**
501 to 3,300	**10**
500 or fewer	**5**

(i) *Criteria for reduced monitoring.* Systems are eligible for reduced monitoring if they meet all the requirements of subparagraph (ii) or (iii) after collecting at least the minimum number of samples required for at least two consecutive tap monitoring periods. Any system that fails to meet the criteria for reduced monitoring under this section shall conduct standard lead and copper tap monitoring in accordance with paragraph (1.1).

(ii) *Annual lead and copper tap monitoring.* If the conditions in clauses (A)—(C) are met, a system may reduce the monitoring frequency to annual monitoring. Any system on an annual frequency shall sample at the standard number of sampling sites specified in paragraph (1.1) for lead and at the reduced number of sites specified in this paragraph for copper.

(A) The system does not exceed the lead action level or copper action level during each of two consecutive 6-month tap monitoring periods.

(B) For systems operating OCCT, the system maintains the range of Department designated OWQPs in accordance with the compliance requirements specified in § 109.1102(b)(2.1) during each of two consecutive 6-month monitoring periods.

(C) The system receives a written determination from the Department approving annual monitoring based on a review of monitoring, treatment, and other relevant information submitted by the system in accordance with § 109.1107.

(D) The annual monitoring period begins the calendar year following the most recent tap monitoring period.

(iii) *Triennial lead and copper tap monitoring.*

(A)A small or medium-sized water system may reduce the frequency of monitoring to triennial monitoring and sample at the reduced number of sites for lead and copper in accordance with this paragraph if the conditions in subclauses (I)—(III) are met.

(I) The system does not exceed the lead or copper action level during each of 3 consecutive years of monitoring, including monitoring conducted at both standard and annual frequencies. Standard or follow-up monitoring completed during both 6-month periods of a calendar year is considered 1 year of monitoring.

(II) Systems operating OCCT shall maintain the range of Department designated OWQPs in accordance with the compliance requirements specified in § 109.1102(b)(2.1) during each of 3 consecutive years of monitoring, including monitoring conducted at both standard and annual frequencies. Standard or follow-up monitoring completed during both 6-month periods of a calendar year is considered 1 year of monitoring.

(III) The system receives a written determination from the Department approving triennial monitoring based on the Department's review of monitoring, treatment and other relevant information submitted by the system in accordance with § 109.1107.

(B) Any water system may reduce the frequency of monitoring to triennial monitoring and sample at the reduced number of sites for lead and copper in accordance with paragraph (4) if the following conditions are met:

(I) The water system demonstrates for two consecutive tap monitoring periods that its 90th percentile lead level, calculated in accordance with § 109.1102(a.1), is less than or

equal to the lead PQL and the 90th percentile copper level, calculated in accordance with § 109.1102(a.1), is less than or equal to the copper PQL.

(II) Systems operating OCCT shall maintain the range of Department designated OWQPs in accordance with the compliance requirements specified in § 109.1102(b)(2.1) during each of the tap monitoring periods.

(III) The water system receives a written determination from the Department approving triennial monitoring based on the Department's review of monitoring, treatment, and other relevant information submitted by the system in accordance with § 109.1107.

(C) The first triennial monitoring period begins the 3-year period following the end of the 3rd consecutive year of annual monitoring. The first triennial sampling period must be no later than 3 calendar years after the last calendar year in which the system sampled.

(iv) *Tap sampling period under reduced monitoring.* A water system that meets the criteria for reduced monitoring under this paragraph shall conduct lead and copper tap sampling between June 1 and September 30 unless the Department has approved a different sampling period in accordance with clause (A) or (B). Only systems on reduced monitoring can monitor during a tap sampling period that is shorter than the tap monitoring period.

(A) For a nontransient noncommunity water system that does not operate during the months of June through September and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the Department may approve, in writing, a different period for conducting lead and copper tap sampling for systems on annual or less frequent monitoring.

(I) The period may be no longer than 4 consecutive months, within 1 calendar year, and must represent a time of normal operation when the highest levels of lead are most likely to occur.

(II) Systems that qualify for annual monitoring under this paragraph shall begin monitoring during the alternate sampling period approved by the Department in the calendar year immediately following the end of the second 6-month standard monitoring period.

(III) Systems that qualify for triennial monitoring under this paragraph shall continue to monitor during the alternate sampling period approved by the Department beginning the 3-year period following the end of the 3rd consecutive year of annual monitoring. The first triennial sampling period must be no later than 3 calendar years after the last calendar year in which the system sampled.

(B) Systems that receive Department approval for an alternate tap sampling period under this subparagraph and have been sampling in the months of June through September must complete their next tap sampling period no later than 21 months, if on annual monitoring, or no later than 45 months, if on triennial monitoring, following the end of the previous tap sampling period.

(C) A water system with a waiver granted in accordance with subsection (k), that had been collecting samples during the months of June through September and receives Department approval to alter its tap sampling monitoring period in accordance with clause (A), shall collect its next round of samples during the last year of the 9-year cycle.

(3) **[*Initial source water monitoring.* A system which exceeds either the lead or copper action level shall collect one source water sample from each entry point within 6 months after the end of the monitoring period in which the action level was exceeded. Monitoring is required only for the parameter for which the action level was exceeded]** **{Reserved}**.

(4) *Tap sampling protocol.*

(i) *Applicability.* All sites must be sampled in accordance with the sampling protocol specified in subparagraph (ii), unless it falls under one of the exceptions in clauses (A)—(C). Sites that have lead service lines must also be sampled in accordance with the instructions in subparagraph (iii) and sites without lead service lines must also be sampled in accordance with the instructions specified in subparagraph (iv). Exceptions include the following:

(A) Sites where samples cannot meet the minimum stagnation time as specified in the sample site plan under § 109.1109(c)(1)(viii).

(B) Follow-up samples collected as part of a Distribution System and Site Assessment under § 109.1102(e).

(C) Consumer-requested samples collected in accordance with § 109.1104(a)(4.1) (relating to public education and notification, supplemental monitoring and mitigation requirements).

(ii) *General tap sampling protocol for both lead and nonlead service line sites.* The following procedure applies to all lead and copper tap samples collected, with additional instructions specified in subparagraphs (iii)—(v), as applicable.

(A) A water system may allow members of the public to collect samples when the following stipulations are met:

(I) The water system shall provide written instructions for collecting samples in accordance with this paragraph.

(II) Sampling instructions provided to members of the public cannot direct the sample collector to remove or clean the aerator, or flush taps, prior to the start of the minimum 6-hour stagnation period. For the purpose of this subclause, an aerator is defined as the device embedded in the water faucet to enhance air flow with the water stream and to prevent splashing.

(III) To protect members of the public from injury due to handling nitric acid, acidification of samples may be completed up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original

container for the time specified in the approved EPA method before the sample can be analyzed.

(B) Samples collected from residential housing must be from the cold-water tap at an interior kitchen or bathroom sink. Samples collected in a nonresidential building must be from an interior cold-water tap where water is typically drawn for human consumption.

(C) Samples must be collected in 1-liter, wide-mouth sample bottles that have a mouth with an inner diameter that measures at least 40 millimeters wide.

(D) Samples must be collected after the water has stood motionless in the plumbing system and/or service line of each sampling site for at least 6 hours without flushing the tap prior to sample collection. Sites approved by the Department that cannot meet the minimum stagnation time as specified in the sample site plan under § 109.1109(c)(1)(viii) do not need to comply with this clause.

(iii) ***Sample sites with a lead service line.*** **First-liter and-fifth-liter paired samples must be collected at any site with a lead service line. In addition to the general protocol specified in subparagraph (ii), these samples shall be collected using the following methods:**

(A) Systems must collect tap water in five consecutively numbered sample bottles meeting the description specified in subparagraph (ii)(C).

(B) Systems shall fill the first bottle and then immediately fill each subsequently numbered bottle with the water running constantly during sample collection. The bottle numbered "1" is the first-liter sample and the bottle numbered "5" is the fifth-liter sample.

(iv) ***Sample sites without a lead service line.*** **For sites without lead service lines, the first-liter sample must be analyzed for lead and copper at sample sites where both contaminants are required to be monitored. At sample sites where only lead is required to be monitored, the first-liter sample may be analyzed for only lead.**

(v) ***Additional sample site requirements.*** **Systems shall sample at sites listed in the sample site plan developed under § 109.1109(c). Following completion of the first round of standard monitoring, systems shall prioritize sampling at the same sites that were sampled in the previous tap sampling period. If a site no longer qualifies under the tiering criteria or if, for reasons beyond the control of the water system, access to a site cannot be gained to collect a tap sample, the system shall collect the tap sample from another site in its plan that meets the original tiering criteria, where such a site exists. Systems shall report any change in sites from the previous tap sampling period and include an explanation of why sampling sites have changed, as required under § 109.1107(a)(2.1).**

(b) **[*Special lead and copper tap monitoring.***

(1) **After completing initial monitoring and prior to initiation of construction or modification of corrosion control treatment facilities, a system may collect special lead and copper tap samples at its option.**

(2) Special lead and copper tap monitoring shall be conducted in accordance with subsection (a), including compliance with the requirements resulting from an action level exceedance.

(3) If a medium or small water system meets the lead and copper action levels during two consecutive 6-month special monitoring periods, the system is deemed to have optimized corrosion control and may discontinue the compliance activities under § 109.1102(b)(2) and proceed directly to reduced monitoring in accordance with subsection (e).

(4) If a medium or small water system exceeds an action level during a monitoring period after discontinuing compliance activities under paragraph (3), the system shall complete the applicable compliance activities under § 109.1102(b)(2).

(5) If a system meets the lead action level during a special monitoring period, the system may discontinue public education in accordance with § 109.1104(a)(3) (relating to public education and notification)] {Reserved}.

(b.1) *WQP monitoring.* All water systems shall sample for WQPs in accordance with this subsection from taps used to provide water for human consumption and at sites selected in accordance with § 109.1109(c). All water systems with WQPs designated by the Department, all large water systems, and all small and medium water systems that exceed the lead or copper action level shall monitor WQPs in addition to lead and copper in accordance with this subsection. Any system may be required to monitor WQPs as determined by the Department, including as provided in this subsection.

(1) *Number of samples.*

(i) *Distribution system sample sites.* A water system shall collect two sets of WQP distribution samples as defined in paragraphs (2) and (3), from the minimum number of sites listed in the following chart. Each sample set shall be collected from the same sample sites on different days. Each sample set shall be evenly spaced throughout the monitoring period. Sample sites must be specified in the sample site plan in accordance with § 109.1109(c).

System size (number people served)	*Minimum number of sites for WQPs*
>100,000	25
10,001 to 100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

(A) The Department may, by written notice, require a public water supplier to conduct WQP monitoring at more than the number of sites specified in the chart in subparagraph (i).

(B) Samples must be representative of all sources and purchased interconnections used throughout the monitoring period.

(C) Systems that collect distribution samples for WQPs from additional sites based on the Distribution System and Site Assessment requirements in § 109.1102(e) shall add those sites to the minimum number of sites listed in subparagraph (i), not to exceed two times the minimum number of sites.

(ii) *Entry point samples.*

(A) Water systems without installed or reoptimized OCCT and without Department designated OWQPs shall collect at least two sample sets of applicable WQPs, at each entry point on different days, during each monitoring period specified in paragraph (2).

(B) Water systems with OCCT or reoptimized OCCT or Department designated OWQPs shall collect at least one sample set of applicable WQPs at each entry point at least once per calendar week that the entry point is in operation.

(2) *Initial WQP monitoring.* This paragraph does not apply to any water system that has Department designated WQPs for OCCT. Any system that exceeds the lead or copper action level shall continue to monitor for WQPs as specified in paragraph (3), while reoptimizing OCCT. Water systems shall collect two sample sets from each location in the distribution system at the number of sites specified in paragraph (1)(i) and at each entry point as specified in paragraph (1)(ii)(A). Initial WQP monitoring shall begin as follows:

(i) Any large water system without CCT shall monitor for WQPs during the first two consecutive 6-month tap monitoring periods, beginning no later than January 1 of the calendar year after the system either becomes a large water system, or exceeds the lead PQL. Until beginning monitoring under paragraph (3), these systems shall continue 6-month monitoring as follows:

(A) Monitor for pH and alkalinity at sites in the distribution system.

(B) Monitor for the following parameters at each entry point:

(I) pH.

(II) Alkalinity, when adjusted as part of treatment.

(III) Orthophosphate (as PO_4), when an inhibitor containing an orthophosphate compound is used.

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

(V) When taking a measurement under subclauses (II)—(IV), record the dosage rate of the applicable chemical(s) used.

(ii) Any medium water system without CCT that exceeds the lead or copper action level shall monitor for WQPs for two consecutive 6-month monitoring periods, beginning the month following the end of the tap monitoring period in which the action level exceedance occurred. These systems shall continue 6-month monitoring as listed in clauses (A) and (B) unless the

system qualifies to cease completion of the treatment steps in accordance with § 109.1102(b)(5.1) or until the system begins monitoring under paragraph (3).

(A) Monitor for pH and alkalinity at sites in the distribution system.

(B) At each entry point, monitor for the parameters listed in subparagraph (i)(B)(I)—(V).

(iii) Any small water system that exceeds the lead or copper action level shall monitor for WQPs for two consecutive 6-month monitoring periods, beginning the month following the end of the tap monitoring period in which the action level exceedance occurred. These systems shall continue 6-month monitoring as listed in clauses (A) and (B) unless the system qualifies to cease completion of the treatment steps in accordance with § 109.1102(d) or until the system begins monitoring under paragraph (3).

(A) Monitor for pH and alkalinity at sites in the distribution system.

(B) At each entry point, monitor for the parameters listed in subparagraph (i)(B)(I)—(V).

(3) *Monitoring after installation of OCCT or reoptimized OCCT.* A water system which installs or modifies OCCT in accordance with § 109.1102(b)(2.1) or (2.2) and is required to conduct follow-up monitoring for lead or copper in accordance with § 109.1102(b)(2.1)(v) or (2.2)(v) shall monitor WQPs in accordance with this paragraph.

(i) Monitor WQPs in accordance with subparagraph (ii) until the Department designates new WQP values for OCCT.

(ii) The WQPs shall be measured as follows:

(A) A sample set, which includes the following WQPs, must be taken in the distribution system at a regular frequency throughout the 6-month monitoring period to reflect seasonal variability at the minimum number of sites specified in paragraph (1)(i):

(I) pH.

(II) Alkalinity, when adjusted as part of treatment.

(III) Orthophosphate (as PO_4), when an inhibitor containing an orthophosphate compound is used.

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

(B) A sample set, which includes the following WQPs, must be measured at each entry point in accordance with paragraph (1)(ii)(B):

(I) pH.

(II) Alkalinity, when adjusted as part of treatment.

(III) Orthophosphate (as PO_4), when an inhibitor containing an orthophosphate compound is used.

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

(V) When taking a measurement under subclauses (II)—(IV) also record the dosage rate of the chemicals used.

(iii) The Department may require small water systems with CCT for which the Department has not designated OWQPs that do not exceed the lead action level or copper action level to conduct WQP monitoring as described in this subsection or the Department can develop its own WQP monitoring structure for these systems.

(4) *Monitoring after the Department designates OWQPs for OCCT.* A system shall monitor at a regular frequency throughout the monitoring period in accordance with § 109.1109(c)(2)(i) and (ii) following the Department's designation of OCCT OWQPs under § 109.1102(b)(2.1) or (2.2).

(i) Water system shall measure the applicable WQPs specified in paragraph (3)(ii) in the distribution system during each monitoring period at the number of sites specified in paragraph (1)(i) and at each entry point at least once every week.

(ii) Beginning the next 6-month monitoring period that starts on January 1 or July 1 following the Department's designation of OCCT WQPs, the results of the monitoring conducted under this paragraph will be used to determine compliance with Department designated WQPs as specified in § 109.1102(b)(2.1)(vii) or (2.2)(vii).

(5) *Reduced monitoring.* Reduced monitoring does not apply to an entry point. All water systems that maintain the range of values for WQPs reflecting OCCT designated by the Department under § 109.1102(b)(3.1)(vi) and do not exceed the lead or copper action level in either of the two consecutive 6-month monitoring periods under paragraph (4) may reduce monitoring for WQPs as follows:

(i) *Number of sites*. Collect two sample sets, as defined in paragraph (3), from each site in the distribution system at the reduced minimum number of sites specified in the following chart during each 6-month monitoring period. The samples must be collected at a regular frequency throughout the 6-month monitoring period to reflect seasonal variability.

System size (number people served)	*Minimum number of sites for WQPs*
>100,000	10
10,001-100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

Green – Verbiage where PA is more stringent than the federal rule.
Yellow – Verbiage where PA differs from the federal rule but is not more stringent.
Blue – PA's choice of verbiage wherever the federal rule included options for states to choose, but is not more stringent.

(ii) *Additional sites.* Systems that collect samples from additional sites based on the Distribution System and Site Assessment requirements in § 109.1102(e) shall continue to sample at the minimum number of sites listed in paragraph (1)(i), not to exceed two times the minimum number of sites.

(iii) *Monitoring frequency.*

(A) A water system that maintains the range of values for the WQPs reflecting OCCT designated by the Department under § 109.1102(b)(3.1)(vi) and does not exceed the lead or copper action level during 3 consecutive years of monitoring may reduce the frequency with which it collects distribution system samples for applicable WQPs specified in paragraph (3)(ii)(A) from each of the minimum number of sites listed in subparagraph (i) from every 6 months to annually. This sampling must begin during the calendar year following the end of the monitoring period in which the 3rd consecutive year of 6-month monitoring occurs.

(B) A water system may reduce the frequency with which it collects distribution system samples for applicable WQPs specified in subparagraph (i) from every 6 months to annual if it demonstrates during two consecutive monitoring periods that its tap water lead level is less than or equal to the lead PQL, that its tap water copper level is less than or equal to the copper PQL as calculated in accordance with § 109.1102(a.1), and that it also has maintained the range of values for the WQPs reflecting OCCT designated by the Department under § 109.1102(b)(3.1)(vi).

(C) The water system shall collect samples at a regular frequency throughout the reduced monitoring period to reflect seasonal variability.

(6) *WQP sample collection methods.* WQP distribution and entry point samples shall be collected in accordance with the requirements specified in § 109.304 (relating to analytical requirements). In addition, WQP samples shall adhere to the following:

(i) The sample tap shall be properly flushed prior to collecting the sample.

(ii) Temperature and pH analyses shall be conducted as soon as possible but no more than 15 minutes after collection. Temperature and pH samples collected at distribution system sites shall be analyzed in the field.

(iii) If silica analyses are required, the sample shall be collected in a plastic container.

(iv) If a water supplier collects WQP distribution samples from the same location and at the same time as coliform and disinfectant residual samples collected under Subchapter C (relating to monitoring requirements), the sampling must be performed in the following order:

(A) Collect and analyze a sample for temperature and pH.

(B) Collect and analyze a sample for disinfectant residual.

(C) Collect the coliform sample.

(D) Collect samples for the remaining WQPs.

(c) **[*Follow-up monitoring after construction or modification of corrosion control treatment facilities.* A system which completes construction or modification of corrosion control treatment facilities in accordance with § 109.1102(b)(2) shall conduct the applicable monitoring specified in this subsection. A system which exceeds the lead action level after construction or modification of corrosion control treatment facilities shall begin lead service line replacement in accordance with § 109.1107(d) (relating to system management responsibilities).**

(1) *Lead and copper tap monitoring.* A system shall monitor for lead and copper at the tap during each specified monitoring period at the number of sample sites specified in subsection (a)(1)(v).

(i) **A large water system shall monitor during each of two consecutive 6-month monitoring periods beginning no later than January 1, 1997. Following completion of this monitoring, but no later than January 31, 1998, the water supplier shall submit a request for the Department to designate optimal corrosion control treatment performance requirements for the system. Upon approval of the request, the Department will designate water quality parameter performance requirements in accordance with § 109.1102(b)(5) or source water treatment performance requirements in accordance with § 109.1102(b)(4), or both. The water supplier may request, and the Department may designate, performance requirements before the system completes the monitoring for both monitoring periods if the system has never exceeded an action level and the system demonstrates in its request that optimal corrosion control treatment has been achieved. After the Department has designated performance requirements, the system shall monitor in accordance with subsection (d)(1).**

(ii) **A small or medium water system shall monitor during each of two consecutive 6-month monitoring periods beginning no later than 60 months from the end of the monitoring period in which the action level was exceeded. The water supplier shall submit within 30 days of the end of the second monitoring period a request for the Department to designate optimal corrosion control treatment performance requirements for the system. Upon approval of the request, the Department will designate water quality parameter performance requirements in accordance with § 109.1102(b)(5) or source water treatment performance requirements in accordance with § 109.1102(b)(4). A small or medium water system that does not exceed the lead and copper action levels during each of two consecutive 6-month monitoring periods may reduce the number of sample sites and reduce the frequency of sampling to once per year in accordance with subsection (e)(1)(i). Systems not eligible for reduced monitoring under subsection (e)(1) shall monitor in accordance with subsection (d)(1).**

(2) ***Water quality parameter monitoring.* A system shall monitor for the applicable water quality parameters specified in subparagraph (iii) in the distribution system during each specified monitoring period at the number of sites specified in subsection (a)(2)(ii) and at each entry point at least once every 2 weeks.**

(i) A large water system shall measure the water quality parameters during each of the two consecutive 6-month monitoring periods in which the system conducts lead and copper tap monitoring under paragraph (1)(i).

(ii) A small or medium water system which is conducting lead and copper tap monitoring in accordance with paragraph (1)(ii) shall measure the water quality parameters during each 6-month monitoring period in which the system exceeds either the lead or copper action level. Distribution system monitoring shall be conducted once during the monitoring period and biweekly entry point monitoring shall continue as long as the system exceeds the action level.

(iii) The water quality parameters shall be measured as follows:

(A) At sites within the distribution system, two sets of samples taken on different days from the same sample sites for:

(I) pH.

(II) Alkalinity.

(III) Orthophosphate, when an inhibitor containing a phosphate compound is used.

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

(V) Calcium, when calcium carbonate stabilization is used as part of corrosion control.

(B) At each entry point, one set of samples every 2 weeks for:

(I) pH.

(II) When alkalinity is adjusted as part of corrosion control treatment, a reading of the dosage rate of the chemical used to adjust the alkalinity, and the alkalinity concentration.

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

(3) *Source water monitoring.* A system which installs source water treatment under § 109.1102(b)(4) shall monitor the source water at source water treatment entry points for the parameters for which the source water treatment was installed. The system shall monitor source water during the two consecutive 6-month monitoring periods specified in paragraph (1). Other systems which exceed either the lead or copper action level while conducting lead and copper tap monitoring in accordance with paragraph (1) shall collect one source water sample from each entry point within 6 months after the end of the monitoring period in which the action level was exceeded for the parameters exceeding the action level] {Reserved}.

(d) [*Monitoring after performance requirements are established.* A system shall conduct the applicable monitoring under this subsection beginning no later than the next 6-month monitoring period that begins on January 1 or July 1 following the Department's designation of optimal corrosion control treatment water quality parameter performance requirements under § 109.1102 (b)(5) or source water performance requirements under § 109.1102(b)(4). A system which exceeds the lead action level after construction or modification of corrosion control treatment facilities shall begin lead service line replacement in accordance with § 109.1107(d).

(1) ***Lead and copper tap monitoring.*** **A system shall monitor for lead and copper at the tap during each monitoring period at the number of sample sites specified in subsection (a)(1)(v) until the system qualifies for reduced monitoring under subsection (e)(1).**

(2) ***Water quality parameter performance monitoring.*** **A system shall measure the applicable water quality parameters specified in subsection (c)(2)(iii) in the distribution system during each monitoring period at the number of sites specified in subsection (a)(2)(ii) and at each entry point at least once every 2 weeks. The results of this monitoring will be used by the Department in determining compliance with the water quality parameter performance requirements established under § 109.1102(b)(5). A system that is not in compliance with the water quality parameter performance requirements established under § 109.1102(b)(5) shall provide public notification in accordance with § 109.1104(c)(2).**

(i) **A large water system shall conduct the monitoring during each monitoring period until the system qualifies for reduced monitoring under subsection (e)(2).**

(ii) **A small or medium water system which is conducting lead and copper tap monitoring in accordance with paragraph (1), shall measure the water quality parameters during each 6-month monitoring period in which the system exceeds either the lead or copper action level. Distribution system monitoring shall be conducted at least once during the monitoring period and biweekly entry point monitoring shall continue as long as the system exceeds the action level.**

(iii) **A system is out of compliance with the requirements of § 109.1102(b)(5) for a 6-month period if it has excursions for any Department specified water quality parameter on more than any 9 days during the 6-month monitoring period. An excursion occurs whenever the daily value for one or more of the water quality parameters is below the minimum value or outside the range of values designated by the Department. The Department has the discretion to delete results of sampling errors from this calculation. Daily values are calculated as follows:**

(A) **On days when more than one sample for the water quality parameter is collected at a sampling location, the daily value shall be the average of all results collected during the day including continuous monitoring or grab samples, or both.**

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

(C) **On days when no sample is collected for the water quality parameter at a sampling location, the daily value shall be the most recent calculated daily value for which a water quality parameter was sampled at a sample location.**

(3) ***Source water monitoring.*** **A system which is conducting lead and copper tap monitoring in accordance with paragraph (1) shall monitor for the parameters exceeding the action level at each entry point within 6 months of the end of the monitoring period in which the action level was exceeded. For systems which have installed source water treatment, the results of this monitoring will be used by the Department in determining compliance with source water treatment performance requirements established under § 109.1102(b)(4). The Department may require additional source water monitoring if the Department determines that the additional monitoring is necessary to assure compliance with the source water treatment performance requirements. A system that is not in compliance with the source water treatment**

performance requirements established under § 109.1102 (b)(4) shall provide public notification in accordance with § 109.1104(c)(2)] {Reserved}.

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

(1) *Reduced lead and copper tap monitoring.* A system conducting reduced lead and copper tap monitoring shall collect one sample from the number of sample sites listed in the following column.

System size (# of people served)	*# of Sample Sites*
> 100,000	**50**
10,001 to 100,000	**30**
3,301 to 10,000	**20**
501 to 3,300	**10**
500 or fewer	**5**

(i) *Annual lead and copper tap monitoring.*

(A) **A small or medium water system that does not exceed the lead and copper action levels during each of two consecutive 6-month monitoring periods or a system which has optimized corrosion control treatment under § 109.1102(b)(1)(ii) may reduce the number of sample sites and reduce the frequency of sampling to once per year.**

(B) **A system that has installed or modified corrosion control treatment facilities in accordance with § 109.1102(b)(2) may reduce the number of lead and copper sample sites and reduce the frequency of monitoring to once per year if the following conditions are met:**

(I) **The system does not exceed the lead and copper action levels during each of two consecutive 6-month monitoring periods.**

(II) **The system maintains the range of values for the optimal corrosion control treatment water quality parameter performance requirements specified by the Department under § 109.1102(b)(5) during each of two consecutive 6-month monitoring periods in accordance with subsection (d)(2).**

(C) **Annual monitoring shall begin during the calendar year immediately following the end of the second consecutive 6-month monitoring period.**

(ii) *Triennial lead and copper tap monitoring.*

(A) **A small or medium water system that does not exceed the lead and copper action levels during 3 consecutive years of monitoring, including initial monitoring, may reduce the frequency of monitoring for lead and copper to once every 3 years.**

(B) **A system that has installed or modified corrosion control treatment facilities in accordance with § 109.1102(b)(2) may reduce the frequency of lead and copper tap monitoring from annually to once every 3 years if the following conditions are met:**

(I) **The system does not exceed the lead and copper action levels during 3 consecutive years of 6-month or annual monitoring.**

(II) **The system maintains the range of values for the optimal corrosion control treatment water quality parameter performance requirements specified by the Department under § 109.1102(b)(5) during 3 consecutive years of monitoring.**

(C) **Triennial monitoring shall be conducted during the last year of each 3-year compliance period—for example 1998, 2001, 2004 and so forth.**

(D) **A system that demonstrates for two consecutive 6-month monitoring periods that the tap water lead level as determined under § 109.1102(a)(3) is less than or equal to 0.005 mg/L and the tap water copper level as determined under § 109.1102(a)(3) is less than 0.65 mg/L may reduce the number of samples in accordance with § 109.1103(e)(1) and reduce the frequency of sampling to once every 3 years.**

(iii) ***Sample sites and timing.*** **A system that reduces the number of sample sites and frequency of sampling shall collect samples from sample sites included in the pool of targeted sampling sites identified in subsection (g)(2). Systems sampling annually or less frequently shall conduct the lead and copper tap sampling between June 1 and September 30. The Department may approve, in writing, a different period for conducting lead and copper tap monitoring sampling for systems on annual or less frequent monitoring. The period may be no longer than 4 consecutive months and shall represent a time of normal operation when the highest levels of lead are most likely to occur.**

(2) ***Reduced water quality parameter monitoring for large water systems.*** **A large water system conducting reduced water quality parameter monitoring shall collect two sets of distribution samples from the following reduced number of sample sites. The sets of samples shall be collected from the same sample sites on different days and analyzed for the applicable water quality parameters.**

System size (# of people served)	*# of Sample Sites*
> 100,000	**10**
50,001 to 100,000	**7**

(i) ***Reduced sites.*** **A large water system that maintains the range of values for water quality parameter performance requirements reflecting optimal corrosion control treatment specified by the Department under § 109.1102(b)(5) during each of two consecutive 6-month monitoring periods conducted in accordance with subsection (d)(2) may collect distribution samples from the reduced number of sites during subsequent 6-month monitoring periods until the system qualifies for reduced frequency under subparagraph (ii). The system shall continue monitoring at each entry point as specified in subsection (d)(2).**

(ii) ***Reduced water quality parameter monitoring.***

(A) **A large water system that maintains the range of values for water quality parameter performance requirements reflecting optimal corrosion control treatment specified by the Department under § 109.1102(b)(5) during 3 consecutive years of monitoring at the reduced number of sites under subparagraph (i) may reduce the frequency with which it collects sets of water quality parameter distribution samples from every 6 months to annually. Annual monitoring begins during the next calendar year. A system conducting annual sampling shall collect these sets of samples evenly**

throughout the year to reflect seasonal variability. The system shall continue monitoring at each entry point as specified in subsection (d)(2).

(B) A large water system may reduce the frequency with which it collects tap water samples for applicable water quality parameters specified in § 109.1102(b)(5) to every 3 years if it demonstrates during two consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead of 0.005 mg/L, that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L, and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Department under § 109.1102(b)(5). Triennial monitoring shall be conducted during the last year of each 3-year compliance period—for example 1998, 2001, 2004 and so forth.

(3) ***Reduced monitoring revocation.***

(i) ***Reduced monitoring revocation for large water systems.*** **A large water system authorized to conduct reduced monitoring under this subsection that fails to meet the lead or copper action level during any 4-month monitoring period or that fails to operate within the range of performance requirements for the water quality parameters specified by the Department under § 109.1102(b)(5) on more than any 9 days in a 6-month period shall comply with the following:**

(A) **The water supplier shall resume lead and copper tap monitoring in accordance with**
subsection (d)(1).

(B) **The water supplier shall resume water quality parameter distribution sampling in accordance with the number and frequency requirements specified in subsection (d)(2).**

(I) **A large system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in paragraph (2) after it has completed two subsequent consecutive 6-month rounds of monitoring that meet the criteria of paragraph (2)(i).**

(II) **A large system may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites specified in paragraph (2) after it demonstrates through subsequent rounds of monitoring that it meets the criteria of paragraph (2)(ii).**

(C) **If either the lead or copper action level is exceeded, the water supplier shall conduct source water monitoring in accordance with subsection (d)(3). Monitoring is required only for the parameter for which the action level was exceeded. For systems on annual or less frequent monitoring, the end of the monitoring period is September 30 of the calendar year in which sampling occurs, or, if the Department has designated an alternate monitoring period, the end of the monitoring period is the last day of the 4-month period in which sampling occurs.**

(ii) ***Reduced monitoring revocation for small or medium water systems.*** **A small or medium water system authorized to conduct reduced lead and copper tap monitoring under this subsection that fails to meet the lead or copper action level during any 4-month monitoring period, or a small or medium system that has installed corrosion control treatment in compliance with § 109.1102(b)(2) and that fails to operate within the range of performance**

requirements for the water quality parameters specified by the Department under § 109.1102(b)(5) on more than any 9 days in a 6-month period, shall comply with the following:

(A) The water supplier shall conduct water quality parameter monitoring during the monitoring period in which the action level is exceeded. The start of the 6-month monitoring period for the water quality parameter monitoring required under this clause must coincide with the start of the annual or triennial tap monitoring period in which the action level was exceeded.

(I) **If the system has installed corrosion control treatment in compliance with § 109.1102(b)(2), water quality parameter monitoring shall be conducted in accordance with subsection (c)(2).**

(II) **If the system has not installed corrosion control treatment, water quality parameter monitoring shall be conducted in accordance with subsection (a)(2) and the system shall conduct corrosion control treatment activities in accordance with § 109.1102(b)(1)(i).**

(B) **The water supplier shall collect one source water sample from each entry point within 6 months of the end of the monitoring period in which the action level was exceeded. Monitoring is required only for the parameter for which the action level was exceeded. For systems on annual or less frequent monitoring, the end of the monitoring period is September 30 of the calendar year in which sampling occurs, or, if the Department has designated an alternate monitoring period, the end of the monitoring period is the last day of the 4-month period in which sampling occurs.**

(C) **If a system has installed corrosion control treatment in compliance with § 109.1102(b)(2), the water supplier shall resume lead and copper tap monitoring in accordance with subsection (d)(1)]** **{Reserved}**.

(f) *Additional monitoring by systems.* **[The results of monitoring conducted at specified sites during specified monitoring periods in addition to the minimum requirements of this section shall be considered by the system and the Department in making determinations—such as calculating the 90th percentile lead or copper action level or determining concentrations of water quality parameters— under this subchapter.]**

(1) *Additional lead and copper tap monitoring.*

(i) The results of any monitoring conducted in addition to the minimum requirements of this subsection, including customer requested samples, must be evaluated by the water system and the Department if the samples were collected within the tap sampling period and using the appropriate tap sampling protocol.

(ii) If multiple samples from the same site, taken during the same tap sampling period, meet the requirements of this subsection, only the highest value from each site can be considered when calculating the 90th percentile in accordance with § 109.1102(a.1) except for systems as defined in § 109.1109(c)(1)(vi).

(iii) Water systems sampling at one or more Tier 1 or Tier 2 sites in a tap sampling period that are unable to collect the minimum number of samples required in this subsection from

Tier 1 or 2 sites shall consider the lead and copper values from the next highest tier available in accordance with § 109.1109(c). If a water system has sufficient samples after including the samples from the next highest available tier to meet the minimum number of samples required in this subsection, the system may not consider additional samples from other available lower tiers. The 90th percentile lead and copper values must be calculated in accordance with § 109.1102(a.1)(3). Systems shall submit all additional sampling results to the Department that were not used in the 90th percentile calculation.

(2) *Additional WQP monitoring.* The results of any monitoring conducted at WQP sites in addition to the minimum requirements of subsection (b.1) must be evaluated by the water system and the Department in determining compliance with WQPs under § 109.1102(b)(2.1)(vii).

(3) *Additional samples required for distribution system and site assessment.*

(i) Follow-up lead samples collected for Distribution System and Site Assessment under § 109.1102(e)(2) will not be included in the 90th percentile calculation.

(ii) Systems that collect distribution system samples for WQPs from additional sites based on the Distribution System and Site Assessment requirements shall add those sites to the minimum number of sites listed in subsection (b.1)(1)(i) not to exceed two times the minimum number of standard sites.

(f.1) *Entry point monitoring for lead and copper.*

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

(i) A water system required to conduct lead and copper monitoring at the entry point under this subsection shall collect lead and copper entry point samples in accordance with the following requirements regarding sample location, collection methods and number of samples:

(A) Systems shall take a minimum of one sample at every entry point to the distribution system that is representative of each source after treatment.

(B) If a system draws water from more than one source and the sources are combined prior to distribution, the system shall sample at the entry point where water is representative of all sources being used during normal operating conditions.

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

(A) Collect and analyze a follow-up sample within 14 days at each entry point included in the composite.

(B) If duplicates or sufficient quantities of the original samples from each sampling point used in the composite are available, the system may use these instead of collecting and analyzing a follow-up sample.

(2) *Monitoring frequency after system exceeds tap water action level.* Any water system with a 90th percentile sample result that exceeds the lead or copper action level shall collect one sample from each entry point to the distribution system no later than 6 months after the end of the tap sampling period during which the lead or copper action level was exceeded. For tap sampling periods that are annual or less frequent, the end of the tap sampling period is September 30 of the calendar year in which the sampling occurs, or if the Department has established an alternate monitoring period, the last day of that period.

(3) *Monitoring frequency after installation of source water treatment or addition of a new source.*

(i) Any system which installs source water treatment under § 109.1102(b)(4) shall collect one sample from each entry point to the distribution system during two consecutive 6-month monitoring periods by the deadline specified in § 109.1102(b)(4)(i).

(ii) Any system which adds a new source shall collect one sample from each entry point to the distribution system every 6-months for a minimum of two consecutive periods until one of the following is met:

(A) Entry point samples demonstrate that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Department in § 109.1102(b)(4)(v).

(B) The Department determines that source water treatment is not needed.

(4) *Monitoring frequency after the Department specifies maximum permissible lead and copper concentrations at the entry point.*

(i) A system shall begin monitoring at the frequency specified in clauses (A) and (B) after the Department specifies maximum permissible lead and copper concentrations under § 109.1102(b)(4)(v).

(A) A water system using only groundwater shall collect samples once during the 3-year compliance period in effect when the Department specifies maximum permissible lead and copper concentrations at the entry point. These systems shall collect samples once during the last year of each subsequent 3-year compliance period.

(B) A water system using surface water, or a combination of surface and ground water, shall collect samples once during each calendar year. The first annual monitoring period must begin during the year in which the Department specifies maximum permissible lead and copper concentrations at the entry point.

(ii) A system is not required to continue entry point sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples during the entire entry point sampling period applicable to the system under subparagraph (i).

(5) *Reduced monitoring.*

(i) A water system may reduce the frequency for lead and copper entry point monitoring to once during each 9-year compliance cycle provided that the system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Department in § 109.1102(b)(4)(v) during at least three consecutive monitoring periods of sampling conducted under paragraph (4)(i).

(ii) Reduced monitoring samples must be collected during the last year of each 9-year compliance cycle.

(iii) A water system that uses a new source of water is not eligible for reduced monitoring for lead and/or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified by the Department under § 109.1102(b)(4)(v).

(g) **[*Sample site location plan.* The water supplier shall complete a sample site location plan which includes a materials evaluation of the distribution system, lead and copper tap sample site locations, water quality parameter sample site locations, and certification that proper sampling procedures are used. The water supplier shall complete the steps in paragraphs (1)—(3) by the applicable date for commencement of lead and copper tap monitoring under subsection (a)(1) and the step in paragraph (4) following completion of the monitoring. The water supplier shall keep the sample site location plan on record and submit the plan to the Department in accordance with § 109.1107(a)(1).**

(1) ***Materials evaluation.*** **A system shall review the following sources of information in order to identify a sufficient number of lead and copper tap sampling sites.**

(i) **Plumbing codes, permits and records in the files of the building departments of each municipality served by the system which indicate the plumbing materials that are installed within structures connected to the distribution system.**

(ii) **Inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system.**

(iii) **Existing water quality information, which includes the results of prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations.**

(2) ***Lead and copper tap sample site selection.*** **Lead and copper tap sampling sites are classified as tier 1, tier 2 or tier 3. Tier 1 sites are the highest priority sample sites.**

(i) *Site selection for community water systems.* The water supplier shall select all tier 1 sample site locations, if possible. A community water system with an insufficient number of tier 1 sampling sites shall complete its sampling pool with tier 2 sites. Tier 3 sites shall be used to complete the sampling pool if the number of tier 1 and tier 2 sites is insufficient. If the system has an insufficient number of tier 1, tier 2 and tier 3 sites, the water supplier shall sample from other representative sites throughout the distribution system in which the plumbing materials used at the site would be commonly found at other sites served by the system.

(A) Tier 1 sampling sites shall consist of single-family structures that have one or more of the following:

(I) Copper pipes with lead solder installed after 1982.

(II) Lead pipes.

(III) Lead service line.

(B) When multiple-family residences comprise at least 20% of the structures served by a water system, the system may consider a representative number of these types of structures as tier 1 sites in its sampling pool, if they meet the other criteria in clause (A).

(C) Tier 2 sampling sites shall consist of buildings, including multifamily residences, that have one or more of the following:

(I) Copper pipes with lead solder installed after 1982.

(II) Lead pipes.

(III) Lead service line.

(D) Tier 3 sampling sites shall consist of single-family structures, constructed as a single-family residence and currently used as either a residence or business, that contain copper pipes with lead solder installed before 1983.

(ii) ***Site selection for nontransient noncommunity water systems.***

(A) The water supplier shall select all tier 1 sample site locations, if possible. A nontransient noncommunity water system with an insufficient number of tier 1 sampling sites shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the system shall use representative sites throughout the distribution system in which the plumbing materials used at the site would be commonly found at other sites served by the system.

(B) Tier 1 sampling sites shall consist of buildings that have one or more of the following:

(I) Copper pipes with lead solder installed after 1982.

(II) Lead pipes.

(III) Lead service line.

(iii) ***Site selection for community and nontransient noncommunity water systems that have fewer than five taps.*** **A system that has fewer than five taps that can be used for drinking water that meet the sample site criteria specified in this paragraph shall collect at least one sample from each tap and then collect additional samples from those taps on different days during the monitoring period to meet the required number of sites.**

(iv)***Site selection for community and nontransient noncommunity facilities that operate continuously.*** **A community water system meeting the conditions in § 109.1104(a)(2)(i)(I), or a nontransient noncommunity water system, that operates continuously and that has an insufficient number of taps commonly used for drinking water to take each first-draw sample from a different tap, may apply to the Department, in writing, to substitute nonfirstdraw samples. Upon approval by the Department in writing, these systems shall collect as many first-draw samples as possible from taps that can be used for drinking water that meet the sample site criteria specified in this paragraph. The remaining samples shall be collected at the times and from the sites identified with the longest standing times.**

Nonfirst-draw samples must be 1-liter in volume and collected from an interior tap that is typically used to provide water for human consumption.

(v) ***Sample sites with lead service lines.*** **A system that has a distribution system containing lead service lines shall draw 50% of the samples it collects during each monitoring period from sites that contain lead pipes or copper pipes with lead solder, and 50% of the samples it collects during each monitoring period from sites served by a lead service line. If a water system cannot identify a sufficient number of sampling sites served by a lead service line, the system shall collect first draw samples from each site identified as being served by a lead service line.**

(vi)***Sample sites with point-of-use or point-of-entry devices.*** **Samples may not be taken from taps that have point-of-use or sites that have point-of-entry treatment devices designed to remove inorganic contaminants.**

(3) ***Water quality parameter sample site selection.***

(i) ***Water quality parameter distribution samples.*** **Water quality parameter distribution samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system and seasonal variability. Distribution sampling is not required to be conducted at sites targeted for lead and copper tap sampling under subsection (a)(1). Systems may find it convenient to conduct distribution sampling for water quality parameters at sites used for coliform sampling under § 109.303(a) (relating to sampling requirements).**

(ii) ***Water quality parameter entry point samples.*** **Samples collected at entry points shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system shall sample at an entry point during periods of normal operating conditions—that is, when water is representative of all sources being used.**

(4) ***Sample procedure certification.*** **A water supplier shall certify that sample collection methods identified in subsection (h)(1) were used to collect lead and copper tap samples. This certification shall be included in the sample site location plan. When a water supplier allows the residents to collect the samples, a copy of the material distributed to residents explaining the proper collection methods, and a list of the residents who performed sampling shall be included in the sample site location plan]** **{Reserved}**.

(h) **[*Sample collection methods.***

(1) ***Lead and copper tap samples.*** **Tap samples for lead and copper collected in accordance with this subchapter, with the exception of lead service line samples collected under § 109.1107(d)(3) and tap monitoring samples collected under § 109.1103(g)(2)(iv), shall be first-draw samples and the following sample collection methods shall be used:**

(i) **Each first-draw tap sample for lead and copper shall be 1 liter in volume and have stood motionless in the plumbing system of each sampling site for at least 6 hours.**

(ii) **First-draw samples from residential housing shall be collected from the cold water kitchen tap or bathroom sink tap. First-draw samples from a nonresidential building shall be collected at an interior tap from which water is typically drawn for drinking.**

(iii) **First-draw samples may be collected by the water supplier or the water supplier may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this paragraph.**

(iv) **If a water supplier allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.**

(v) **Acidification of first-draw samples may be done up to 14 days after the sample is collected. After acidification, the sample shall stand in the original container for the time specified according to the approved EPA method before analyzing the sample.**

(vi) **For subsequent monitoring, the water supplier shall make every reasonable effort to collect each first-draw tap sample from the same sampling site from which it collected a previous sample. If the water supplier is unable to use an original sampling site, the system may collect the tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity to the original site.**

(2) ***Water quality parameter distribution samples.*** **Water quality parameter distribution samples shall be collected using the following methods:**

(i) **Samples shall be fully flushed.**

(ii) **If a water supplier collects the water quality parameter distribution samples from the same location as coliform and disinfectant residual samples, the water quality parameter samples shall be collected in the following manner:**

(A) **Fully flush the tap and collect the coliform sample.**

(B) **Collect a sample to measure disinfectant residual.**

(C) **Collect and analyze the sample for temperature and pH.**

(D) **Collect the samples for the other water quality parameters.**

(iii) **Water quality parameter samples require two 500-ml samples to be collected. Two sample containers are required because calcium analysis shall be performed using a separate sample container in order to acidify the sample prior to measurement.**

(iv) **Temperature analyses shall be conducted in the field to insure accuracy.**

(v) **pH measurements shall be conducted in the field and made with a pH electrode and meter within 15 minutes of sample collection. The meter shall be capable of measuring to 1/10 of a unit.**

(vi) **If silica analyses are required, the sample shall be collected in a plastic container.**

(3) ***Water quality parameter entry point samples.*** **Water quality parameter entry point samples shall be collected using the methods identified in paragraph (2), except subparagraphs (ii) and (iii).**

(4) ***Source water samples.*** **Lead and copper source water samples shall be collected in accordance with the requirements regarding sample location, number of samples and collection methods specified in 40 CFR 141.88(a)(1) (relating to monitoring requirements for lead and copper in source water).**

(5) ***Lead service line samples.*** **Each lead service line sample shall be 1 liter in volume and have stood motionless in the lead service line for at least 6 hours. Lead service line samples shall be collected in one of the following ways:**

(i) **At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line.**

(ii) **Tapping directly into the lead service line.**

(iii) **If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line] {Reserved}**.

(i) *Analytical methods.* **[Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica and temperature] Analyses of lead, copper, and WQP samples must** be conducted in accordance with § 109.304 **[(relating to analytical requirements)]**. The Department will only consider lead and copper samples analyzed by a laboratory certified by the Department. Measurements for **[water quality parameters] WQPs** may be performed by a person meeting the **[operator certification requirements of § 109.1107(c)] requirements of § 109.704 (relating to operator certification)**.

(j) *Invalidation of lead or copper tap water samples.* A sample invalidated under this **[paragraph] subsection** does not count toward determining lead or copper 90th percentile levels under § 109.1102(a) or toward meeting the minimum monitoring requirements of this section. **A water system shall report the results of all samples to the Department and all supporting documentation for samples the system believes should be invalidated**. The Department's decision and rationale for invalidating a sample must be documented in writing.

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

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

(ii) The Department determines that the sample was taken from a site that did not meet the site selection criteria **[of this section] specified in § 109.1109(c)(1)**.

(iii)The sample container was damaged in transit.

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

(v) The Department determines the sample was not collected in accordance with the tap sampling protocol specified in subsection (a)(4)(ii). However, if a system allows members of the public to sample, the system cannot challenge the accuracy of the sample results based on alleged sample collection errors or request that a sample be invalidated based on improper sample collection.

(2) **[The system shall report to the Department the results of all samples, along with supporting documentation for samples the system believes should be invalidated] {Reserved}**.

(2.1) The Department will not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

(3) A system shall collect replacement samples for any samples invalidated under this subsection if, after the invalidation of one or more samples, the system has too few samples to meet the minimum monitoring requirements of this section.

(i) Replacement samples **[shall] must** be taken as soon as possible but no later than 20 days after the Department invalidates the sample or by the end of the applicable **[monitoring] tap sampling** period, whichever occurs later.

(ii) Replacement samples taken after the end of the applicable **[monitoring period shall] tap sampling period must** not be used to meet the monitoring requirements of a subsequent monitoring period.

(iii) Replacement samples **[shall] must** be taken at the same locations as the invalidated samples **[or, if that is not possible, at locations other than those already used for sampling during the monitoring period]**. **If the sample was invalidated under paragraph (1)(ii), or the system cannot gain access for sampling, then the replacement samples must be taken at locations that meet the site selection criteria. Locations already used for sampling during the monitoring period must not be reused.**

(k) *Monitoring waivers for **[small]** systems **serving 3,300 or fewer persons***. A **[small] water** system **serving 3,300 or fewer persons** that meets the criteria of this subsection may apply to the Department to reduce the frequency of monitoring for lead **[and] or** copper**, or both,** under this section to once every 9 years if it meets all of the materials criteria specified in paragraph (1) and all of the monitoring criteria specified in paragraph (2). **[A system that meets the criteria in paragraphs (1) and (2) only for lead, or only for copper, may apply to the Department for a waiver to reduce the frequency of tap water monitoring to once every 9 years for that contaminant only.] Systems meeting only the criteria for lead may apply for a lead waiver, systems meeting only the criteria for copper may apply for a copper waiver, and systems meeting the criteria for both lead and copper may apply for a full waiver.**

(1) *Materials criteria.* The system shall demonstrate that its distribution system, service lines and **[all drinking water plumbing, including plumbing conveying drinking water] premise plumbing** within all residences and buildings connected to the system, are free of lead-containing materials or copper-containing materials or both as follows:

(i) *Lead.* To qualify for a waiver of tap monitoring requirements for lead, the system shall provide certification and supporting documentation to the Department that the system is free of all lead-containing materials as follows:

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

(B) It is free of lead service lines, **GRR service lines, lead connectors,** lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless the fittings and fixtures meet the specifications of **[any] the most recent** standard established under 42 **[U.S.C.A.] U.S.C.** § 300g-6(e) (relating to **[plumbing fittings and fixtures] prohibition on use of lead pipes, solder, and flux**).

(ii) *Copper.* To qualify for a waiver of the tap water monitoring requirements for copper, the system shall provide certification and supporting documentation to the Department that the system contains no copper **[pipes] premise plumbing** or copper service lines.

(2) *Monitoring criteria for waiver issuance.* The system shall have completed at least one 6-month round of **[routine] standard** tap water monitoring for lead and copper at sites approved by the Department and from the number of sites as required under subsection **[(a)(1)(v)] (a)(1.1)**. The system shall demonstrate that the 90th percentile levels for all rounds of monitoring conducted since

the system became free of all lead-containing or copper-containing materials, as appropriate, meet the following criteria:

(i) *Lead levels.* To qualify for a waiver of the lead tap monitoring, the system shall demonstrate that the 90th percentile lead level does not exceed **[0.005 mg/L] the lead PQL**.

(ii) *Copper levels.* To qualify for a waiver of the copper tap monitoring, the system shall demonstrate that the 90th percentile copper level does not exceed **[0.65 mg/L] the copper PQL**.

(3) *Department approval of waiver application.* The Department will notify the system of its waiver determination, in writing, setting forth the basis of the decision and any condition of the waiver. **As a condition of a waiver, the Department may require the system to perform specific activities to avoid lead or copper concentrations of concern in tap water.** A system shall continue monitoring for lead and copper at the tap as required by this section until it receives written notification from the Department that the waiver has been approved.

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

(i) A system shall conduct tap water monitoring for the contaminant**(s)** waived in accordance with subsection **[(e)(1)(iii)] (a)(2.1)(i)** at the reduced number of sites identified in subsection **[(e)] (a)(2.1)** at least once every 9 years and provide the materials certification specified in paragraph (1) for the contaminant**(s)** waived along with the monitoring results. Monitoring shall be conducted during the last year of each 9-year compliance cycle **[—for example 2010, 2019, 2028 and so forth]**.

(ii) A system shall continue to monitor for any nonwaived contaminants in accordance with **[subsection (a)(1)] this section**, as appropriate.

(iii) A system with a waiver shall notify the Department, in writing, within 60 days after becoming aware that it is no longer free of lead-containing or copper-containing materials, as appropriate**[, as a result of new construction or repair]**.

(iv) A system with a waiver shall notify the Department, in writing, no later than 6 months prior to the addition of a new source or change in treatment. The Department may add or modify waiver conditions, if any modifications are deemed necessary to address source or treatment changes at the system.

(5) *Continued eligibility.* If the system continues to satisfy the requirements of paragraph (4), the waiver will be renewed automatically unless any of the conditions listed in subparagraph**s** (i)—(iii) occurs. A system whose waiver has been revoked may reapply for a waiver when it again meets the appropriate materials and monitoring criteria of paragraphs (1) and (2).

(i) A system with a lead waiver no longer satisfies the materials criteria of paragraph (1)(i) or has a 90th percentile lead level greater than **[0.005 mg/L] the lead PQL**.

(ii) A system with a copper waiver no longer satisfies the materials criteria of **[subsection (k)(1)(ii)] paragraph (1)(ii)** or has a 90th percentile copper level greater than 0.65 mg/L.

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

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

(i) If the system exceeds the lead or copper**[, or both,]** action level, the system shall implement **[corrosion control treatment]** **or reoptimize OCCT** in accordance with § 109.1102(b), and any other applicable requirements of this subchapter.

(ii) If the system **[meets both the lead and copper action levels]** **is at or below both the lead and copper action levels**, the system shall monitor for lead and copper **[at the tap]** no less frequently than once every 3 years **[in accordance with the frequency, timing and the reduced number of sample sites specified in subsection (e)]** **at the reduced number of sample sites specified in subsection (a)(2.1)**.

(7) *Preexisting waivers*. A system whose waiver was approved by the Department in writing prior to November 1, 2027, is still in effect if the system can demonstrate the following:

(i) The system is free of lead-containing and copper-containing materials in accordance with paragraph (1).

(ii) The 90th percentile lead levels and 90th percentile copper levels meet the criteria specified in paragraph (2).

(iii) The system meets the continued eligibility criteria listed in paragraph (5).

(l) *Monitoring for lead in schools and childcare facilities.*

(1) *General requirements*. This subsection applies to all community water systems that serve schools or childcare facilities, as defined in § 109.1, unless both the criteria in subparagraphs (i) and (ii) are met. The requirements of this subsection do not apply to any school or childcare facility that is regulated as a stand-alone public water system.

(i) The school or childcare facility was constructed or had full plumbing replacements on or after January 1, 2014, or the date the Department adopted standards that meet the definition of "lead free" in accordance with section 1417 of the Federal act (42 U.S.C. § 300g-6), as amended by the Reduction of Lead in Drinking Water Act (Public Law 111–380, 124 Stat. 4131), whichever is earlier.

(ii) The school or childcare facilities are not served by a lead, GRR or an unknown service line.

(2) *List of schools and childcare facilities.*

(i) By November 1, 2027, each community water system shall compile a list of all schools and childcare facilities served by the system that meet the criteria in paragraph (1).

(A) The water system shall make a good faith effort to develop the list, which may include reviewing customer records and requesting lists of schools and childcare facilities from the appropriate licensing agency.

(B) At least once every 5 years the water system shall submit a revised list to the Department or confirm that there have been no changes to the list.

(3) *Public education to schools and childcare facilities.*

(i) Each community water system must contact all schools and childcare facilities identified by the system in paragraph (2)(i) to provide the following:

(A) Information about health risks from lead in drinking water at least once every calendar year beginning November 1, 2027. This language must be consistent with the requirements of 40 CFR 141.85 (relating to public education and supplemental monitoring and mitigation requirements), which is incorporated by reference in § 109.1104(a).

(B) Prior to December 31, 2032, notification that the elementary schools and childcare facilities are eligible for lead sampling by the water system in accordance with the frequency requirements in paragraph (4). The notification must include:

(I) A proposed schedule for sampling at the facility.

(II) Information about sampling for lead in schools and childcare facilities in accordance with the most recent EPA guidance.

(C) Prior to December 31, 2032, notification that the secondary schools may request lead sampling by the water system. The notification must be on at least an annual basis and include:

(I) Information on how to request lead sampling at the facility.

(II) Information about sampling for lead in schools and childcare facilities in accordance with the most recent EPA guidance.

(ii) Between January 1, 2033, and December 31, 2033, a community water system shall notify all schools and childcare facilities identified in paragraph (2)(i) that they may request lead sampling by the water system. The notification must be in accordance with subparagraph (i)(C)(I) and (II).

(iii) Thirty days prior to any sampling event, community water system shall provide schools and childcare facilities with instructions to identify outlets for lead sampling and prepare for a sampling event.

(iv) If an elementary school or childcare facility is nonresponsive or otherwise declines to participate in the monitoring or education requirements of this section, the community water system must include documentation in accordance with § 109.1107(a)(5.1). For the purposes of this subsection, a school or childcare facility is nonresponsive after the community water system makes at least two separate outreach attempts to contact the facility to schedule sampling and does not receive any response on either attempt.

(4) *Frequency of sampling at schools and childcare facilities.*

(i) Samples must be collected from at least 20% of elementary schools served by the system and 20% of childcare facilities served by the system per calendar year, or according to an alternate schedule approved by the Department, until all schools and childcare facilities identified under paragraph (2)(i) have been sampled or have declined to participate or are nonresponsive. A community water system may count a refusal or nonresponse from an elementary school or childcare facility, according to paragraph (3)(iv), as part of the minimum 20% sampled per year.

(ii) All elementary schools and childcare facilities must be sampled at least once, have declined sampling or have been determined to be nonresponsive in accordance with paragraph (3)(iv) by December 31, 2032.

(iii) Between January 1, 2033, and December 31, 2033, community water systems shall sample at the request of an elementary school or childcare facility in accordance with this paragraph except as follows:

(A) A water system is not required to sample more than 20% of the elementary schools and childcare facilities identified in paragraph (2)(i) in any given year.

(B) A water system is not required to sample an individual elementary school or childcare facility more than once in any 5-year period.

(iv) When a community water system includes an elementary school or childcare facility for the first time in an update to the list of schools and childcare facilities reported to the Department, the community water system shall:

(A) Conduct public education at those elementary schools and childcare facilities as described in paragraph (3)(i) at least once prior to conducting sampling in accordance with paragraph (4).

(B) Consider an elementary school or childcare facility nonresponsive after the community water system makes at least two separate outreach attempts to contact the facility to schedule sampling and does not receive any response on either attempt.

(v) A community water system shall sample at the request of a secondary school in accordance with paragraph (5). A community water system is not required to sample more than 20% of the secondary schools identified under paragraph (2)(i) in any given year. A community water system is not required to sample an individual secondary school more than once in the 5-year period.

(5) *Lead sampling in schools and childcare facilities.*

(i) Community water systems shall collect five samples per school and two samples per childcare facility at outlets typically used for human consumption. The outlets cannot have POU devices except as provided in clauses (C)—(E). Samples must be collected as follows:

(A) School samples must be collected at the following locations:

(I) Two drinking water fountains.

(II) One kitchen faucet used for food preparation or drinking.

(III) One classroom faucet or other outlet used for human consumption.

(IV) One nurse's office faucet.

(B) Childcare facility samples must be collected at the following locations:

(I) One drinking water fountain.

(II) One at a kitchen faucet used for food preparation or drinking, or a classroom faucet, or other outlet used for human consumption.

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

(D) Outlets used for sampling must not be equipped with a POU device, unless the facility has POU devices installed on all outlets typically used for human consumption.

(E) If any facility does not contain the type of outlet listed in clauses (A)—(D), the samples must be collected from other outlets typically used for human consumption as identified by the facility to meet the required number of samples notated in this subparagraph.

(F) Samples must be collected in accordance with the following requirements:

(I) The sample must be collected from a cold-water tap.

(II) Each sample must be a first-liter sample.

(III) The sample must be 250 mL in volume.

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

(V) Samples must be analyzed following analytical methods specified in subsection (i).

(ii) The community water system, school, or childcare facility staff, or other appropriately trained individuals shall collect samples in accordance with this paragraph.

(6) *Notification of results.*

(i) A community water system must provide analytical results, along with information about lead in drinking water remediation options consistent with current EPA guidance, to the school or childcare facility as soon as practicable but no later than 30 days after receipt of the results.

(ii) A community water system must provide the analytical results as soon as practicable but no later than 30 days after receipt of the results to:

(A) Local and State health departments.

(B) The Department.

(7) *Alternative school and childcare lead sampling waiver*. If schools and childcare facilities served by a community water system are sampled for lead in drinking water under a State or local law or program, the Department may exempt the water system from the sampling requirements at those facilities by issuing a written waiver.

(i) The community water system may be exempt from the sampling requirements if one of the following criteria are met:

(A) If the sampling is in accordance with paragraphs (4) and (5).

(B) If the sampling is in accordance with paragraphs (4) and (5) with the exceptions of sample size and stagnation time in paragraph (5)(i)(F)(III) and (IV) and is conducted in addition to any of the following lead in drinking water remediation steps.

(I) Disconnect affected fixtures.

(II) Replace affected fixtures with certified lead-free fixtures.

(III) Install and maintain POU devices certified by an ANSI accredited certifier to reduce lead levels.

(C) If the sampling is conducted in schools and childcare facilities served by the community water system less frequently than once every 5 years and that sampling is conducted in addition to any of the remediation steps in clause (B).

(D) If the school or childcare facility maintains POU devices as defined in 40 CFR 141.2 (relating to definitions), which is incorporated by reference, on all outlets used to provide water for human consumption.

(E) If the sampling is conducted under a grant awarded under section 1464(d) of the Federal act (42 U.S.C. § 300j–24), consistent with the requirements of the grant, and at least the minimum number of samples required in paragraph (4) are collected.

(ii) The waiver duration cannot exceed the sampling period of the qualifying State or local law or program. The waiver will automatically expire after a 12-month period during which sampling is not conducted at the required number of schools or childcare facilities.

(iii) The Department will only issue a waiver to the subset of schools or childcare facilities listed in paragraph (2)(i) that are sampled under an alternative program as defined in this paragraph.

(iv) The Department may issue a waiver for community water systems that conducted sampling for lead at schools and childcare facilities between January 1, 2021, and November 1, 2027. The waiver would exempt the water system from completing the sampling requirements in paragraph (4) as long as the sampling under the alternative program met the criteria in paragraph (6)(i).

§ 109.1104. Public education and notification**, supplemental monitoring and mitigation requirements**.

(a) ***[Public]*** ***Lead public*** *education program.* **[The water supplier for a]** **Any water** system that exceeds the lead action level based on tap monitoring conducted under § 109.1103 (relating to monitoring requirements) shall implement a public education program in accordance with this section. The public education program must remain in effect until the system qualifies for discontinuation under paragraph (3).

(1) *Content.* The water supplier shall include mandatory language established by the EPA under 40 CFR 141.85 (relating to public education and supplemental monitoring **and mitigation** requirements), which is incorporated by reference, in all **[of the printed and broadcast]** **the written** materials distributed through the lead public education program. Additional information presented

by a system must be consistent with the information specified in this **[section and be in plain English that can be understood by laypersons]** **subsection and be in plain language that can be understood by the general public**. If appropriate or as designated by the Department, public education materials must be bilingual or multilingual**, in accordance with subparagraph (ii)**. Systems may delete information pertaining to lead service lines, upon approval by the Department, if no lead service lines exist in the system's service area. **The Department may require the system to obtain approval of the content of written public education materials prior to delivery.**

(i) *Content of written materials.* Community water suppliers and nontransient noncommunity water suppliers shall include the mandatory language and other content requirements established under 40 CFR 141.85(a)(1) **[and (2)]**, which is incorporated by reference.

(ii) *Information for non-English-speaking populations.* **[For each non-English-speaking group that exceeds 10% of the residents for systems serving at least 1,000 people or 100 residents for systems serving less than 1,000 people, and speak the same language other than English, the written materials must contain information in the appropriate languages regarding the importance of the materials or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the materials or to request assistance in the appropriate language.]** **Public education written materials required by this section must comply with the following multilingual requirements:**

(A) Contain information in Spanish regarding the importance of the notice.

(B) Contain information regarding the importance of the notice in the appropriate language(s) if either of the following criteria are met:

(I) A system serving at least 1,000 people has a non-English-speaking group other than Spanish that exceeds 10% of the population served.

(II) A system serving less than 1,000 people has a non-English-speaking group other than Spanish of 100 or more residents.

(C) Instead of providing information in Spanish and other language(s) as specified in clauses (A) and (B), the written materials may contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance.

(iii) *Submission of written materials.* **[Water systems shall submit copies of all written public education materials to the Department prior to delivery.]**

(A) Water systems shall submit copies of all written public education materials to the Department prior to delivery.

(B) Within 10 days following the end of each period in which the system is required to perform public education, the water system shall submit written documentation to the Department demonstrating that the system has complied with the public education program requirements of this section. The documentation must contain a list of newspapers, radio and television stations, facilities and organizations to which the system has delivered public education materials during the most recent period.

(C) A system that previously has submitted the information specified in clause (B) does not need to resubmit it as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.

(2) *Delivery.*

(i) *Community water system requirements.* Within 60 days after the end of the **[monitoring] tap sampling** period in which the lead action level was exceeded, **[unless it is already repeating public education tasks under this subsection, the water supplier for]** a community water system shall deliver the public education materials to its customers in accordance with clauses (A)—(G). **[The water supplier shall repeat the tasks contained in clauses (A)—(D) and (H) every 12 months, and in clause (G) every 6 months for as long as the system exceeds the lead action level.] For systems that are on standard monitoring, the end of the tap sampling period is June 30 or December 31.** For systems that are required to conduct monitoring annually or less frequently, the end of the **[monitoring] tap sampling** period is September 30 of the calendar year in which sampling occurs, or**[,]** if the Department has designated an alternate **[monitoring period, the end of the monitoring period is the last day of the 4-month period in which sampling occurs] 4-month tap sampling period, the last day of that period**.

(A) The water **[supplier shall deliver printed] system shall deliver written** materials meeting the content requirements of paragraph (1) to **[all bill paying customers] each customer receiving a bill and to other service connections to which water is delivered by the system**. **For multifamily dwellings, the water system shall deliver the written materials to each unit or post the information at a conspicuous location.**

(B) The water **[supplier] system** shall deliver education materials meeting the content requirements of paragraph (1) to the local **[board or department of public health that has jurisdiction over] public health agencies, even if they are not located within** the water system's service area, along with an informational notice that encourages distribution to all the potentially affected consumers. The water **[supplier] system** shall contact the local **[board or department of]** public health **agencies** directly by phone**, email** or in person. The local **[board or department of]** public health **agencies** may provide a specific list of additional community-based organizations serving **[target]** populations **at greatest risk from lead exposure** which may include organizations outside the service area of the water system. If a list is provided, the water supplier shall deliver education materials that meet the content requirements of paragraph (1) to all the organizations on the list.

(C) The water **[supplier] system** shall deliver education materials meeting the content requirements of paragraph (1) to **[the] consumers and** organizations **most at risk, as** listed in subclauses (I)—**[(VI)] (VII)** that are located within the water system's service area, along with an informational notice that encourages distribution to all **[the organization's potentially affected customers or water system's users] potentially affected consumers**:

(I) **[Public and private schools or local school boards, or both] Schools, childcare facilities and school boards**.

(II) Women, Infants**[,]** and Children **[or] (WIC) and** Head Start Programs **[whenever available]**.

Green – Verbiage where PA is more stringent than the federal rule.
Yellow – Verbiage where PA differs from the federal rule but is not more stringent.
Blue – PA's choice of verbiage wherever the federal rule included options for states to choose, but is not more stringent.

(III) Public and private hospitals and medical clinics.

(IV) Pediatricians.

(V) Family planning clinics.

(VI) Local welfare agencies.

(VII) Obstetricians-gynecologists and midwives.

(D) **[The water supplier shall make a good faith effort to locate the following organizations within the water system's service area and deliver education materials meeting the content requirements of paragraph (1) to them along with an informational notice that encourages distribution to all the organization's potentially affected customers or users. The good faith effort to contact at-risk customers must include requesting a specific contact list of the organizations in subclauses (I)—(III) from the local board or department of public health that has jurisdiction over the water system's service area:**

(I) **Licensed childcare centers.**

(II) **Public and private preschools.**

(III) **Obstetricians-gynecologists and midwives] {Reserved}**.

(E) The water supplier shall provide information **[on or in] with** each water bill at least quarterly **for as long as the water system exceeds the lead action level**. The message on the water bill must include the following statement exactly as written except for the text in brackets for which the water system must include system-specific information:

> "[INSERT WATER SYSTEM NAME] found **[high] elevated** levels of lead in drinking water in some homes**/buildings**. Lead can cause serious health problems. For more information please **[call] contact** [INSERT WATER SYSTEM NAME] (or visit [INSERT **WATER SYSTEM** WEBSITE **[ADDRESS]**])."

(F) The water supplier shall post **and retain** education materials meeting the content requirements of paragraph (1) on the water system's website if the system serves a population greater than **[100,000] 50,000** for as long as the system exceeds the lead action level.

(G) The water supplier shall submit a press release to newspaper, radio and television stations. **The submitted press release must state the water system found elevated levels of lead in drinking water in some homes/buildings and meet the content requirements of paragraph (1).**

(H) In addition to the requirements of clauses (A)—**[(F)] (G)**, community water **[suppliers] systems** shall implement at least three activities from the categories listed in subclauses (I)—(IX). The educational content and selection of these activities **[shall] must** be determined in consultation with the Department.

(I) Public service announcements.

(II) Paid advertisements.

(III) Public area information displays.

(IV) E**[-]**mails to customers.

(V) Public meetings.

(VI) Household deliveries.

(VII) Targeted individual customer contact.

(VIII) Direct distribution of education materials to all multi-family homes and institutions.

(VIII.1) Contact organizations representing plumbers and contractors to provide information about lead in drinking water, sources of lead, and the importance of using lead free plumbing materials.

(IX) Other methods approved by the Department.

(H.1) The water system shall repeat the tasks in clauses (A)—(H) until the system is at or below the lead action level based on samples collected in accordance with § 109.1103. These repeated activities must be completed within 60 days of the end of each tap sampling period. A calculated 90th percentile concentration at or below the lead action level based on fewer than the minimum number of required samples under § 109.1103 cannot be used to meet the requirements of this subparagraph.

(I) A community water system may apply to the Department, in writing, **[to omit the text required in 40 CFR 141.85(a)(2) and]** to perform the tasks listed under subparagraph (ii) in lieu of the tasks under clauses (A)—(H) if the following apply:

(I) The system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to the plumbing or installing **[point-of-use]** **POU** treatment devices.

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

(J) A community water system serving 3,300 or fewer persons may modify its public education program as follows:

(I) The system may limit distribution of public education materials required under clauses (B) and (C) to facilities and organizations served by the system that are most likely to be visited by pregnant **[women]** **people** and children.

(II) The system may omit the task in clause (G) if notices meeting the content requirements of paragraph (1) are distributed to every household served by the system.

(III) The system shall implement at least one of the tasks specified in clause (H).

(ii) *Nontransient noncommunity water system requirements.* Within 60 days after the end of the **[monitoring]** **tap sampling** period in which the lead action level was exceeded, **[the water supplier for]** a nontransient noncommunity water system shall deliver the public education materials contained in paragraph (1) to its consumers**[, unless it is already repeating public education tasks under this subsection]**. **For systems that are on standard monitoring, the end of the tap sampling period is June 30 or December 31.** For systems that are required to conduct monitoring annually or less frequently, the end of the **[monitoring]** **tap sampling** period is September 30 of the calendar year in which sampling occurs, or**[,]** if the Department has designated an alternate **[monitoring period, the end of the monitoring period is the last day of the 4-month period in which sampling occurs]** **4-month tap sampling period, the last day of that period**.

(A) The water **[supplier]** **system** shall post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system until **[and distribute informational pamphlets or brochures, or both, on lead in drinking water to each person routinely served by the nontransient noncommunity water system]** **the system is at or below the lead action level based on tap samples collected in accordance with § 109.1103. [Systems may use electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.]**

(A.1) The water system shall distribute informational pamphlets or brochures, or both, on lead in drinking water to each person served by the nontransient noncommunity water system. Systems may use electronic transmission instead of or combined with printed materials as long as it achieves at least the same coverage.

(B) The water supplier shall repeat the tasks contained in **[clause (a) at least once during each calendar year in which the system exceeds the lead action level]** **clauses (A) and (A.1) until the system is at or below the lead action level based on tap samples collected in accordance with § 109.1103. These repeated activities must be completed within 60 days of the end of each tap sampling period. A calculated 90th percentile concentration at or below the lead action level based on fewer than the minimum number of required samples under § 109.1103 cannot be used to meet the requirements of this subparagraph.**

(iii) *Extension of the 60-day delivery deadline.* Water systems may request **in writing** an extension of the 60-day delivery deadline**[, but the water system must receive written approval from the Department prior to the 60-day deadline]** **to complete the tasks specified in subparagraph (i)(B)—(H) for community water systems or subparagraph (ii)(A) and (A.1) for nontransient noncommunity water systems. The water system shall receive written approval from the Department prior to the 60-day deadline for the extension to take effect.**

(A) The Department may only grant the extension on a case-by-case basis if the system has demonstrated that it is not feasible to complete the tasks specified in subparagraph (i)(B)–(H) or subparagraph (ii)(A) and (A.1) within 60 days.

(B) The tasks specified in subparagraphs (i) and (ii) must be completed no later than 6 months after the end of the tap sampling period in which the exceedance occurred.

(3) *Discontinuation of* ***lead*** *public education program.* A water supplier may discontinue delivery of public education materials if the system does not exceed the lead action level during the most recent 6-month monitoring period conducted under § 109.1103. The system shall resume public education in accordance with this section if it exceeds the lead action level at any time during a future **[monitoring]** **tap sampling** period.

(4) **[*Notification of customer monitoring.* A water supplier that fails to meet the lead action level on the basis of tap monitoring conducted in accordance with § 109.1103 shall provide information regarding laboratories certified by the Department for lead and copper testing to any customer who requests it]** **{Reserved}**.

(4.1) *Customer requested sampling and notification of results.* A water system shall collect customer requested samples and provide notification as follows:

(i) If the lead action level is exceeded, based on tap samples collected in accordance with § 109.1103, collect first-liter and fifth-liter samples for lead in the tap water of any person served by the water system who requests it. At sites served by a lead, GRR or lead status unknown service line, the samples must capture both water in contact with premise plumbing and water in contact with the service line.

(ii) Regardless of whether the water system exceeds the lead action level, offer to collect first-liter and fifth-liter samples lead in the tap water of any person served by a lead, GRR or lead status unknown service line who requests it. The samples must capture both water in contact with premise plumbing and water in contact with the service line.

(iii) Provide a consumer notice of the individual tap results from customer requested sampling to the persons served by the water system at the specific sampling site from which the sample was taken. Water systems shall provide the consumer notice in accordance with the requirements of subsection (b).

(b) *Notification of results.* Water systems shall deliver a consumer tap notice of lead **and copper** tap water monitoring results to persons served by the water at sites that are sampled under § 109.1103.

(1) *Content.* The consumer notice must include the following:

(i) The **tap water monitoring** results of lead **[tap water monitoring] or copper, or both,** for the tap that was **[sampled] tested**.

(ii) An explanation of the health effects of lead **or copper, or both, that meets the requirements of 40 CFR 141.85(a)(1) and 40 CFR Part 141, Subpart Q, Appendix B (relating to standard health effects language for public notification)**.

(iii)A list of steps consumers can take to reduce exposure to lead **or copper, or both** in drinking water **that meets the requirements of 40 CFR 141.85(a)(1)**.

(iv)Contact information for the water system.

(v) The maximum contaminant level goal and the action level for lead **or copper, or both** and the definitions for these two terms specified by the EPA in 40 CFR 141.153(c) (relating to content of the reports).

(vi) Information on possible sources of lead in drinking water that meets the requirements of 40 CFR 141.85(a)(1).

(2) *Timing.* Water systems shall provide the consumer notice **[within 30 days] as soon as practicable but not later than 3 business days** after the system learns of the tap monitoring results. **Notification by mail must be postmarked within 3 business days of the system learning of the tap monitoring results.**

(3) *Delivery.* The consumer notice shall be delivered to persons served at the tap that was sampled **[either by mail or by another method approved by the Department] through one of the methods identified in subparagraphs (i)—(v). [The system shall provide notice to all persons**

served by the tap that was sampled, including consumers who do not receive water bills.] The notices of lead and copper tap sampling results may be combined in one notice. For a nontransient noncommunity water system in which persons 17 years of age or under are cared for or educated, such as a school or childcare facility, the water supplier shall also provide a consumer tap notice directly to the parent or guardian of each of those persons.

(i) Electronically.

(ii) By mail.

(iii) By phone call or voice message. If the water system utilizes this delivery method, the system shall follow up with a written notice to consumers hand delivered or postmarked within 30 days of the system learning of the tap monitoring results.

(iv) Hand delivery.

(v) Another method approved by the Department.

(4) *Reporting to the Department.*

(i) Within 3 months following the end of the monitoring period in which lead tap monitoring was conducted, the water system shall submit to the Department a sample copy of the consumer notice along with a certification that the notices were distributed in accordance with this subsection.

(ii) Annually by January 30, for tap samples from the previous program year that are not included in subparagraph (i), the water system shall submit to the Department a sample copy of the consumer notice along with a certification that the notices were distributed in accordance with this subsection.

(c) *Public notification requirements.* A water **[supplier] system** shall give public notification in accordance with Subchapter D (relating to public notification) when one of the following occurs:

(1) The water supplier fails to perform monitoring and analyses as required by **[§ 109.1103] this subchapter**.

(2) The water supplier is not in compliance with a treatment technique established under **[§ 109.1102(b) (relating to action levels and treatment technique requirements)] this subchapter**.

(3) The water system exceeds the action level for lead.

(4) The water system fails to comply with the reporting requirements of § 109.1107 (relating to system management responsibilities).

(d) *Notification of known or potential service line containing lead.* Water systems shall provide written notice to all persons served by a lead, GRR or lead status unknown service line in accordance with this subsection.

(1) *Timing of notification.* A water system shall provide the initial notification within 30 days of completion of the service line and connector inventory required under § 109.1109(a) (relating to service line and connector inventory, service line replacement plan and sample site plan) and repeat the notification no later than 30 days after the deadline for each annual update to the service line and connector inventory until the entire service connection is no longer a lead,

GRR or lead status unknown service line. For new customers, water systems shall provide the notice at the time of service initiation.

(2) *Content.* The notice must include an explanation of the health effects of lead that meets the requirements of 40 CFR 141.85(a)(1)(ii), which is incorporated by reference under subsection (a), as well as steps persons at the service connection can take to reduce exposure to lead in drinking water. The notice must also include information specific to each type of service line in accordance with subparagraphs (i) and (ii).

(i) For persons served by a confirmed lead or GRR service line the notice must also include the following:

(A) A statement that the person's service line is lead or GRR.

(B) A statement that the consumer can request to have their tap water sampled in accordance with § 109.1103.

(C) Information on how to obtain a copy of the service line replacement plan or view the plan on the internet if the system is required to make the service line replacement plan available online.

(D) Information about opportunities to replace lead or GRR service lines as well as programs that provide financing solutions to assist property owners with replacement of their portion of the lead or GRR service line.

(E) A statement that the water system is required to replace its portion of a lead or GRR service line when the property owner notifies the water system that the property owner is replacing their portion of the lead or GRR service line.

(F) A statement that provides instructions for the customer to notify the water system if they disagree with the service line material categorization in the inventory.

(ii) For persons served by a lead status unknown service line the notice must include the following:

(A) A statement that the person's service line material is unknown but may be lead.

(B) A statement that the consumer can request to have their tap water sampled in accordance with § 109.1103.

(C) Information on how to obtain a copy of the service line replacement plan or view the plan on the internet if the system is required to make the service line replacement plan available online.

(D) Information about opportunities to verify the material of the service line.

(3) *Delivery*. The notice must be provided to customers and consumers at the service connection with a lead, GRR or lead status unknown service line, by one of the following methods:

(i) Electronically.

(ii) By mail.

(iii) By phone call or voice message. If the water system utilizes this delivery method, the system shall follow up with a written notice to consumers hand delivered or postmarked within 30 days of the system learning of the tap monitoring results.

(iv) Hand delivery.

(v) Another method approved by the Department.

(4*) Reporting to the Department.* Annually by January 30, the water system shall demonstrate to the Department that it delivered annual consumer notification and service line information materials to customers and all persons served by the water system at the service connection with a lead, GRR or lead status unknown in accordance with this subsection for the previous calendar year. The water system shall also provide a copy of the notification and information materials to the Department.

(e) *Notification due to a disturbance to a known or potential service line containing lead.* Water systems that cause any disturbance to a lead, GRR or lead status unknown service line shall provide notification to customers and the persons served by that service line with information about the potential for elevated lead levels in drinking water as a result of the disturbance in accordance with this subsection.

(1) For actions taken by a water system that cause a disturbance that results in a shut off or bypass of water, or other actions that cause a disturbance such as physical action or vibration to an individual service line or group of service lines, the water system shall provide notification in accordance with this paragraph. These actions include operating a valve on a service line or meter setter, reconnecting a service line to the main, or undergoing physical action or vibration, which could result in pipe scale dislodging and associated release of particulate lead. When these actions occur, the water system shall provide the following:

(i) Public education materials that meet the content requirements in 40 CFR 141.85(a)(1)(ii)—(iv) and (vi).

(ii) Contact information for the water system.

(iii) Instructions for a flushing procedure to remove particulate lead.

(2) For a disturbance that results from the replacement of an inline water meter, a water meter setter, connector or from the replacement of a water main whereby the service line pipe is physically cut, the water system shall provide the following:

(i) Public education materials that meet the content requirements in 40 CFR 141.85(a)(1)(ii)—(iv) and (vi).

(ii) Contact information for the water system.

(iii) Instructions for a flushing procedure to remove particulate lead.

(iv) A pitcher filter or POU device certified by an ANSI accredited certifier to reduce lead, instructions to use the filter and 6 months of filter replacement cartridges.

(3) Where there was a disturbance and service was shut off or bypassed, the water system shall comply with the requirements of paragraphs (1) and (2) for consumers (persons served by the water system at the service connection) before the affected service line is returned to service.

Where there was a disturbance, but service was not shut off or bypassed, the water system shall comply with the requirements in this subsection as soon as possible, but not to exceed 24 hours following the disturbance.

(4) The water system shall comply with the requirements of paragraph (1) for customers associated with the service connection who are not persons served by the water system at the service connection no later than 30 days following the disturbance.

(5) A water system that conducts a partial or full replacement of a lead or GRR service line shall follow procedures in accordance with the requirements in § 109.1110(e) (relating to service line and lead connector replacement requirements). Partial or full replacement of a lead or GRR service line is not considered a "disturbance" for purposes of this subsection.

(6) Annually by January 30, the water system shall certify to the Department that it delivered notification to affected customers and consumers after any lead service line disturbance in accordance with this subsection for the previous calendar year, or that the water system has not caused any disturbance of a service line known to contain or potentially contain lead, during the preceding year. The water system shall provide the certification and a copy of the notification to the Department. When the water system is required to provide filters in accordance with this subsection, the system shall report the number of sites with disturbances that required filters and the number of filters provided.

(f) ***Outreach activities to encourage participation in full service line replacement.***

(1) Community water systems that do not meet the cumulative average replacement rate as required under § 109.1110(a)(9) shall conduct at least one outreach activity in accordance with paragraph (3) to discuss their mandatory service line replacement program, opportunities for replacement, and to distribute public education materials that meet the content requirements in 40 CFR 141.85(a), except 40 CFR 141.85(a)(1)(i) and (v).

(2) Water systems shall conduct the outreach activity in the first year after the system did not meet their cumulative average replacement rate and continue annually until the water system meets the cumulative average replacement rate or until there are no lead, GRR or lead status unknown service lines remaining in the inventory, whichever occurs first.

(3) For community water systems serving more than 3,300 persons, the outreach activity must be one of the activities identified in subparagraphs (i)—(iv) or the water systems shall conduct two activities identified in subparagraphs (v)—(viii). For community water systems serving 3,300 persons or fewer, the outreach activity must be one of the activities identified in subparagraphs (i)—(viii).

(i) Conduct a public meeting.

(ii) Participate in a community event to provide information about its service line replacement program.

(iii) Contact customers by phone call or voice message, text message, email or door hanger.

(iv) Use another method approved by the Department to discuss the service line replacement program and opportunities for replacement.

(v) Send certified mail to customers and all persons served by the water system at the service connection with a lead or GRR service line to inform them about the water system's service line replacement program and opportunities for replacement.

(vi) Conduct a social media campaign.

(vii) Conduct outreach via the media including newspaper, television or radio.

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

(4) Annually by January 30, the water system shall demonstrate to the Department that it conducted outreach activities in accordance with this subsection when failing to meet the cumulative average replacement rate for the previous calendar year. The water system shall submit to the Department a copy of the information provided during outreach activities.

(g) *Notification to local and State health agencies.* All community water systems shall provide the information specified in paragraphs (1) and (2) to local and State health agencies. This information shall be provided by mail, email or another method approved by the Department, no later than July 1 of the following year.

(1) The following information regarding the distribution system and site assessment activities conducted in accordance with § 109.1102(e) (relating to lead and copper action levels, 90th percentile calculation and treatment technique requirements) for the previous calendar year:

(i) Location of the tap sample site that exceeded 0.010 mg/L.

(ii) The result of the initial tap sample.

(iii) The result of the follow-up tap sample.

(iv) The result(s) of WQP monitoring.

(v) Any distribution system management actions or CCT adjustments made.

(2) Copies of the public education materials provided under subsections (a) and (e) for actions conducted in the previous calendar year.

(3) Annually by January 30, the water system shall certify to the Department that it delivered the distribution system and site assessment information required under paragraph (1) to local and State health agencies for the previous calendar year.

(h) *Additional requirements for water systems with multiple lead action level exceedances.* A water system that exceeds the lead action level more than once in a rolling 5-year period, based on tap water samples collected in accordance with § 109.1103, shall comply with the requirements of this subsection. The first rolling 5-year period begins on November 1, 2027.

(1) No later than 60 days after a water system exceeds the lead action level for the second time in a rolling 5-year period, the water system shall submit a filter plan to the Department for review and approval. The water system is not required to resubmit the filter plan after additional exceedances, unless the system has made updates to the plan or otherwise requested by the Department. The filter plan must include:

(i) A description of which methods the system will use to make filters and replacement cartridges available in accordance with paragraph (3).

(ii) A description of how the system will address any barriers to consumers obtaining filters.

(2) A water system that exceeds the lead action level at least three times in a rolling 5-year period shall conduct the activities in paragraphs (3)—(5). If a water system exceeds the lead action level at least three times within a 5-year period, the system shall conduct these actions upon the third action level exceedance even if the rolling 5-year period has not elapsed.

(3) No later than 60 days after the tap sampling period in which a water system meets the criteria of paragraph (2), a water system shall provide to all consumers pitcher filters or POU devices certified by an ANSI accredited certifier to reduce lead, 6 months of replacement cartridges and instructions for use. A water system shall continue to make replacement cartridges available until the system can discontinue actions in accordance with paragraph (6).

(4) A water system that meets the criteria of paragraph (2) shall conduct a community outreach activity to discuss the multiple lead action level exceedances, steps the system is taking to reduce lead in drinking water, measures consumers can take to reduce their risk consistent with the content requirements of 40 CFR 141.85(a)(1)(iv) and how to obtain a filter certified to reduce lead as required in paragraph (3). This activity is in addition to the public education activities required under subsection (a)(2)(i) for community water systems, and subsection (a)(2)(ii) for nontransient noncommunity water systems. The water system shall conduct at least one of the following activities within 6 months of the end of the tap sampling period in which the most recent lead action level exceedance occurred and every 6 months thereafter until the system no longer meets the criteria of paragraph (2).

(i) Conduct a public meeting.

(ii) Participate in a community event where the system can make information about ongoing lead exceedances available to the public.

(iii) Contact customers by phone call or voice message, text message, email or door hanger.

(iv) Conduct a social media campaign.

(v) Use another method approved by the Department.

(5) A water system that is already conducting an outreach activity listed in paragraph (4) to meet the requirements of subsection (e) may conduct one activity that meets the requirements of paragraph (4) and subsection (e), unless otherwise directed by the Department.

(6) A water system may discontinue the requirements of this paragraph when the system no longer has at least three lead action level exceedances in a rolling 5-year period. A 90th percentile level at or below the lead action level, based on fewer than the minimum number of required samples under § 109.1103, cannot be used to meet the requirements of this paragraph. The Department has the discretion to allow a water system to discontinue the requirements of this paragraph earlier if the system has taken actions to reduce lead levels, such as reoptimizing OCCT or completing the service line replacement program, and the system is at or below the lead action level for two consecutive tap monitoring periods.

(7) By January 30 and July 30, the water system shall:

(i) Certify compliance with the filter requirements specified in paragraph (3) for the previous 6 months and report the number of filters provided.

(ii) Certify completion of a public outreach activity specified in paragraph (4) for the previous 6 months and submit a copy of the public education material provided to consumers.

§ 109.1105. Permit requirements.

(a) *General permit requirements.* A person may not construct, substantially modify or operate **[corrosion control treatment]** **CCT** facilities to comply with this subchapter without having obtained the appropriate permit approvals under Subchapter E (relating to permit requirements) and this section.

(b) *Construction permits and permit amendments.* The water supplier shall submit an application for a public water system construction permit for a newly created system or an amended construction permit for a currently-permitted system for **[corrosion control treatment]** **CCT** facilities by the applicable deadline established in § **[109.1102(b)(2) (relating to action levels and treatment technique requirements), unless the system complies with paragraph (1) or (2) or otherwise]** **109.1102(b) (relating to lead and copper action levels, 90th percentile calculation and treatment technique requirements), unless the system qualifies** for a minor permit amendment under § 109.503(b) (relating to public water system construction permits). The permit application must comply with § 109.503 and contain the applicable information specified therein. **[The application must include recommended water quality parameter performance requirements for optimal corrosion control treatment as specified in § 109.1102(b)(5) and other data, information or documentation necessary to enable the Department to consider the application for a permit for construction of the facilities.]** **In addition, the application must include the following:**

(1) ***[Community water system minor permit amendments.*** **Until August 18, 2018, a community water supplier may submit a written request for an amended construction permit to the Department if the system satisfies the conditions under subparagraphs (i)—(iv). A request for an amended construction permit under this paragraph must describe the proposed change in sufficient detail to allow the Department to adequately evaluate the proposal**.

(i) **The system is a small water system.**

(ii) **The sources of supply for the system are not surface water sources.**

(iii) **Except for corrosion control treatment, the sources require treatment no greater than disinfection to provide water of a quality that meets the MCLs and treatment technique requirements established under Subchapter B (relating to MCLs, MRDLs or treatment technique requirements).**

(iv) **The proposed corrosion control treatment is limited to alkalinity or pH adjustment, or both]** **{Reserved}**.

(1.1) A CCT feasibility study.

(1.2) A recommendation for WQPs for OCCT.

(1.3) Other data, information, or documentation necessary to enable the Department to consider the application for a permit for construction of the facilities.

(2) ***[Nontransient noncommunity water system permits.*** **Until August 18, 2018, a nontransient noncommunity water supplier is not required to obtain a construction permit or permit amendment under subsection (b) if the system satisfies the following specifications and conditions:**

(i) **The system is a small water system.**

(ii) **The sources of supply for the system are not surface water sources.**

(iii) **Except for corrosion control treatment, the sources require treatment no greater than disinfection to provide water of a quality that meets the MCLs and treatment technique requirements established under Subchapter B.**

(iv) **The proposed corrosion control treatment is limited to alkalinity or pH adjustment, or both.**

(v) **The water supplier files a brief description of the proposed treatment, including recommended water quality parameter performance requirements for optimal corrosion control treatment as specified in § 109.1102(b)(5), on forms acceptable to the Department. Descriptions of modifications shall be submitted and approved by the Department prior to construction]** **{Reserved}**.

(3) **[Beginning August 19, 2018, community water systems and nontransient noncommunity water systems required to install optimal corrosion control treatment in accordance with § 109.1102(b) shall obtain a construction and operation permit]** **{Reserved}**.

(c) *Operation permits.* **[Except for nontransient noncommunity water systems complying with subsection (b)(2), the]** **The** water supplier shall obtain an operation permit or amended operation permit following completion of construction and prior to initiation of operation of **[corrosion control treatment]** **CCT** facilities. The permit will be issued in accordance with § 109.504 (relating to public water system operation permits). The Department will not issue an operation permit under this subchapter unless the water system complies with the operation and maintenance plan requirements under § 109.1107(b) (relating to system management responsibilities) and the operator certification requirements under § 109.1107(c). The water supplier for a community water system or nontransient noncommunity water system shall submit a request for Department designation of **[optimal corrosion control treatment performance requirements in accordance with § 109.1102(b)(2)]** **WQPs in accordance with § 109.1102(b)** and the Department will issue an amended operation permit designating the **[performance requirements as specified in § 109.1102(b)(5)]** **WQPs as specified in § 109.1102(b)(3.1)(vi)**.

§ 109.1106. Design standards.

[Corrosion control treatment] **CCT** facilities shall be designed to satisfy the following standards unless the Department determines that the requirement is not technologically feasible or is not necessary to optimize corrosion control:

(1) A minimum pH measured in distribution samples of at least 7.0.

(2) **[For systems that are exempt under § 109.1105(b)(1) or (2) (relating to permit requirements) from submitting a construction permit application, a]** **A** minimum alkalinity measured in all distribution samples of 20 **[mg/l]** **mg/L**.

(3) When orthophosphate is used, an orthophosphate concentration shall be equal to or greater than 0.5 mg/L (as PO_4) for water systems installing OCCT and 1.0 mg/L (as PO_4) for water systems reoptimizing OCCT.

§ 109.1107. System management responsibilities.

(a) ***[Reporting] General reporting*** *and recordkeeping* ***requirements***. Systems shall comply with the **[following] reporting and recordkeeping** requirements **of this subchapter** and otherwise comply with § 109.701 (relating to reporting and recordkeeping)**[:].**

(1) **[*Sample site location plan.* The system shall prepare a sample site location plan in accordance with § 109.1103(g) (relating to monitoring requirements), maintain the plan on record and submit the plan to the Department prior to conducting initial lead and copper tap monitoring or upon request. The water supplier shall update the following information in the plan within the first 10 days following the end of each applicable monitoring period:**

(i) **Selection of different lead and copper tap sample sites from sites sampled during previous monitoring periods.**

(ii) **Changes in water quality parameter distribution or entry point site selection or source water entry point site selection from sites sampled during previous monitoring periods.**

(iii)**An update of the sample procedure certification required under § 109.1103(g)(4)]** **{Reserved}**.

(1.1) ***Sample site plan.*** **The system shall prepare a sample site plan and submit the plan to the Department in accordance with § 109.1109(c) (relating to service line and connector inventory, service line replacement plan and sample site plan).**

(2) **[*Reporting of monitoring results.* The water supplier shall assure that the results of analyses conducted in accordance with § 109.1103 are reported to the Department within the first 10 days following the end of each applicable monitoring period as stipulated by § 109.1103. Additional monitoring results beyond that required under § 109.1103 shall be kept on record by the water supplier and presented or submitted to the Department upon request.]** ***Reporting requirements for monitoring.*** **The water system shall assure that the information specified in this subsection is reported to the Department within the first 10 days following the end of each applicable monitoring period under § 109.1103 (relating to monitoring requirements) for any monitoring conducted in accordance with § 109.1103(a), (b.1) and (f.1). For tap sampling periods with a duration of less than 6 months, the results should be reported within the first 10 days following the end of the tap sampling period specified in § 109.1103.**

(i) **[*Lead and copper tap monitoring]*** ***Monitoring*** *results.* The following minimum information is required when reporting **all** lead and copper **[tap monitoring] and WQP** results to the Department.

(A) The name, address and public water system identification number (PWSID) of the public water system from which the samples are taken.

(B) The **drinking water** contaminant ID.

(C) **[The parameter name] The sample collection date**.

(D) The sample **[period] collection time**.

(E) The sample type.

(F) The analytical methods used.

(F.1) The analysis date.

(G) The **analytical** results **[of analyses conducted in accordance with this subchapter for lead and copper tap monitoring]**.

(H) The sample location.

(I) The name, address and identification number of the **[certified]** laboratory performing the analysis.

(ii) **[*Water quality parameter monitoring results.* The following minimum information is required when reporting water quality parameter results to the Department:**

(A) **The name, address and PWSID of the public water system from which the samples are taken.**

(B) **The contaminant ID.**

(C) **The parameter name.**

(D) **The sample period.**

(E) **The sample type.**

(F) **The number of samples required and the number of samples taken.**

(G) **The analytical methods used.**

(H) **The results of analyses conducted in accordance with § 109.1103 for water quality parameters.**

(I) **The sample location.**

(J) **Whether an excursion has occurred on more than any 9 days during a 6-month monitoring period for any Department specified water quality parameter] {Reserved}**.

(iii) **[*Source water monitoring results.* The following minimum information is required when reporting source water monitoring results to the Department:**

(A) **[The name, address and PWSID of the public water system from which the samples are taken.**

(B) **The contaminant ID.**

(C) **The parameter name.**

(D) **The sample period.**

(E) **The sample type.**

(F) **The number of samples required and the number of samples taken.**

(G) **The analytical methods used.**

(H) **The results of analyses conducted in accordance with this subchapter for source water monitoring.**

(I) **The sample location.**

(J) **The name, address and identification number of the certified laboratory performing the analysis] {Reserved}**.

(iv) *Changes to monitoring sites.* A water system shall identify any lead and copper tap or entry point site which was not sampled during previous tap sampling periods and include an explanation of why monitoring sites have changed.

(v) *Sample procedure certification.* A water system shall certify that sample collection methods identified in § 109.1103(a)(4) and provided as part of § 109.1109(c) were used to collect lead and copper tap and entry point samples. Certification must also include a list of the sample location identification numbers where residents collected the samples.

(2.1) *Invalidation of results.* A water system shall provide documentation for each lead and copper tap sample for which they request invalidation in accordance with § 109.1103(j).

(2.2) *90th percentile lead and copper concentrations.*

(i) The Department will calculate the 90th percentile for water systems in accordance with § 109.1102(a.1) (relating to lead and copper action levels, 90th percentile calculation and treatment technique requirements).

(ii) If a water system does not submit lead and copper tap samples in accordance with paragraph (2), the water system is responsible for making all of the compliance tap water monitoring data and 90th percentile calculation results publicly available within 60 days following the end of the applicable tap sampling period. Large systems shall make these results available in a digital format. Small and medium systems shall make these results available in either a print or digital format. Water systems shall certify in writing to the Department compliance with the requirements of this subparagraph, and shall retain monitoring data in accordance with paragraph (7).

(2.3) *Additional monitoring results.* Any water system which collects more samples than the minimum required shall report the results to the Department in accordance with the requirements specified in paragraph (2)(i).

(2.4) *Distribution system and site assessment results.*

(i) Follow-up and WQP samples collected for distribution system and site assessment under § 109.1102(e) must be reported to the Department in accordance with paragraph (2)(i). If the analysis results from this monitoring are not received within 10 days following the end of the monitoring period in which the initial individual lead sample exceeded the action level, then these results must be reported within 10 days following the month in which the analysis results were received.

(ii) The water system shall certify to the Department the number of customer refusals and nonresponses it received for follow-up sampling required under § 109.1102(e) and information pertaining to the accuracy of the refusals and non-responses, within the first 10 days following the end of the applicable tap sampling period in which an individual sample exceeded the action level.

(3) ***[Corrosion control treatment reporting requirements.***

(i) **A water supplier demonstrating optimal corrosion control treatment under § 109.1102(b)(1)(ii) (relating to action levels and treatment technique requirements) shall submit information in writing sufficient for the Department to evaluate and determine whether optimal treatment has been achieved.**

(ii) **The water supplier for a large water system shall complete a corrosion control treatment feasibility study in accordance with § 109.1102(b)(3) and submit the study to the Department by June 30, 1994.**

(iii)**The water supplier for a small or medium water system required to complete a corrosion control treatment feasibility study in accordance with § 109.1102(b)(3) shall submit the study to the Department within 18 months of exceeding an action level.**

(iv)**Upon completion of construction or modification of corrosion control treatment the water supplier shall submit to the Department a certification of construction as required under § 109.504(a) (relating to public water system operation permits).**

(v) **Upon completion of required monitoring under § 109.1103(c) following construction or modification of corrosion control treatment, the water supplier shall submit to the Department a request for designation of optimal corrosion control treatment performance requirements in accordance with § 109.1102(b)(5). The request shall include as a minimum a summary of analyses conducted under § 109.1103(c) and recommended performance requirements if different from those recommended by the water supplier as part of the construction permit application process]** **{Reserved}**.

(3.1) ***Requirements for new sources or change in treatment.*** **Prior to the addition of a new source or change in treatment, water systems are required to obtain a permit or approval under Subchapter E (relating to permit requirements).**

(4) ***[Public education reporting requirements.*** **A water supplier required to implement a public education program in accordance with § 109.1104(a) (relating to public education and notification) shall submit a letter to the Department demonstrating that the system has complied with the public education program requirements of this subchapter within 10 days after the end of each period in which the system is required to perform public education tasks. The letter shall contain a list of newspapers, radio and television stations, facilities and organizations to which the system has delivered public education materials during the most recent period for which the system was required to perform public education tasks]** **{Reserved}**.

(4.1) ***Reporting requirements for monitoring waivers for systems serving 3,300 or fewer persons.*** **A water system serving 3,300 or fewer persons applying for a monitoring waiver under § 109.1103(k) or subject to a waiver under § 109.1103(k)(3) shall provide the following to the Department in writing by the specified deadline.**

(i) By the start of the system's first applicable tap monitoring period in § 109.1103, any water system applying for a monitoring waiver must provide the documentation required to demonstrate that it meets the waiver criteria of § 109.1103(k)(1) and (2) to the Department.

(ii) Prior to the beginning of each tap monitoring period in which the system desires to maintain its monitoring waiver under § 109.1103(k)(2) or (4), the system must provide the information required under § 109.1103(k)(5) to the Department.

(iii) No later than 60 days after the water system becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each system with a monitoring waiver must provide written notification to the Department setting forth the

circumstances resulting in the lead-containing and/or copper-containing materials being discovered in the system and what corrective action, if any, the system plans to take to remove these materials.

(5) ***[Consumer notice of lead tap monitoring results reporting requirements.*** **The water supplier shall submit to the Department within 3 months of the end of the monitoring period in which lead tap monitoring was conducted a sample copy of the consumer notice of lead tap monitoring results along with a certification that the notices were distributed in accordance with § 109.1104(b)]** **{Reserved}**.

(5.1) ***Reporting requirements for sampling in schools and childcare facilities.***

(i) By November 1, 2027, a community water system shall provide to the Department a list of the schools and childcare facilities it serves or certification that no schools or childcare facilities are served by the water system in accordance with § 109.1103(l)(2)(i).

(A) A water system that certifies that no schools or childcare facilities are served by the water system is not required to report the information in subparagraph (ii).

(B) Beginning November 1, 2028, the water system shall certify to the Department by January 30 of each year for the previous calendar year, that the system does not serve schools or childcare facilities. When the system becomes aware it serves one or more schools or childcare facilities, the system shall provide a list to the Department and begin to report the information in subparagraph (ii).

(ii) Beginning November 1, 2028, a community water system shall send a report to the Department by January 30 of each year for the previous calendar year's activity. The report must include the following:

(A) Certification that the water system made a good faith effort to identify schools and childcare facilities in accordance with § 109.1103(l)(2)(i).

(I) If there are changes to the number of schools or childcare facilities that a water system serves, an updated list must be submitted at least once every 5 years in accordance with § 109.1103(l)(2)(i)(B).

(II) If there are no changes to the number of schools or childcare facilities that a water system serves, the water system shall certify there are no changes to the list.

(B) Certification that the water system has delivered information about health risks from lead in drinking water to the schools and childcare facilities they serve in accordance with § 109.1103(l)(2)(ii)(A).

(C) For the first 5 years following November 1, 2027, certification that the water system has completed the following requirements for schools and childcare facilities:

(I) Notification and sampling requirements specified in § 109.1103(l)(1)—(5).

(II) The number and names of schools and childcare facilities served by the water system.

(III) The number and names of schools and childcare facilities sampled in the previous year.

(IV) The number and names of elementary schools and childcare facilities that declined sampling.

(V) The number and names of elementary schools and childcare facilities that did not respond to outreach attempts for sampling.

(VI) Information pertaining to outreach attempts for sampling that were declined or not responded to by the elementary school or childcare facility.

(D) For the first 5 years following November 1, 2027, certification that the water system has completed notification and sampling requirements specified in § 109.1103(l)(1)—(5) for any secondary schools and the information in clauses (C)(II) and (III).

(E) Starting November 1, 2033, the water system shall certify the following requirements annually:

(I) Completion of the notification and sampling requirements specified in § 109.1103(f)(1)—(5) for elementary schools, secondary schools, and childcare facilities.

(II) Completion of the information in clauses (C)(II) and (III).

(F) Certification that sampling results were provided to schools, childcare facilities, and local and State health departments in accordance with § 109.1103(l)(5).

(6) ***[Lead service line replacement reporting.***

(i) **A water system that is required to initiate lead service line replacement in accordance with subsection (d) shall, within the first 3 months of the first year of lead service line replacement, submit to the Department the following:**

(A) **Evidence that a materials evaluation of the system has been conducted in accordance with § 109.1103(g)(1).**

(B) **A schedule for replacing at least 7% of the lead service lines identified in the materials evaluation.**

(C) **The initial number of lead service lines in its distribution system and the portions owned by the system based on a materials evaluation, including the evaluation required under § 109.1103(g) and relevant legal authorities regarding the portion owned by the system.**

(ii) **For a system which is conducting lead service line replacement, the water supplier shall notify the Department in writing that the system has replaced at least 7% of the lead service lines identified in the materials evaluation, or that the results of lead sampling from**

individual lines scheduled for replacement do not exceed 0.015 mg/L. The notification shall be given by the end of each year of lead service line replacement and contain the following information:

(A) **The name, address and public water system identification number of the public water system.**

(B) **The number of lead service lines scheduled for replacement during the previous year.**

(C) **The number and location of lead service lines actually replaced during the year.**

(D) **The date, location, the results of this sampling and method of sampling used, if lead service line sampling is completed in individual lead service lines]** **{Reserved}**.

(6.1) ***Small water system compliance flexibility reporting requirements.***

(i) Small water systems serving 3,300 or fewer and nontransient noncommunity water systems implementing the POU device option under § 109.1102(d)(4) shall:

(A) Report the results from the tap sampling required under § 109.1102(d)(4)(v) no later than 10 days after the end of the tap sampling period.

(B) If corrective action is not completed within 30 days of a POU sample exceeding the lead action level, the system must provide documentation to the Department within 30 days explaining why it was unable to correct the issue.

(C) Provide documentation by January 30 of each year for the previous calendar year to certify maintenance of the POU devices in accordance with § 109.1102(d)(4)(iv).

(ii) Small water systems serving 3,300 or fewer and nontransient noncommunity water systems implementing the small system compliance flexibility option to replace all lead-bearing plumbing under § 109.1102(d)(5) shall provide certification to the Department that all lead-bearing material has been replaced on the schedule established by the Department, within 1 year of obtaining Department approval.

(6.2) ***Service line inventory and replacements reporting requirements*****. Water systems shall meet the reporting requirements specified in § 109.1109 and § 109.1110 (relating to service line and lead connector replacement requirements).**

(7) *Record maintenance.* The water supplier shall retain on the premises of the system or at a convenient location near the premises the following:

(i) Records of all monitoring results **as specified in § 109.701(d)(1)**, which shall be kept for at least 12 years.

(ii) **[A copy of a current sample site location]** **Current sample site** plan, which shall be kept for the life of the facility. **Previous versions of the sample site plan shall be kept for at least 12 years from the date each version was last updated.**

(iii) **[Copies of written]** **Written** correspondence with the Department relating to lead service line replacement, which shall be kept for at least 12 years after the completion of the replacement of applicable lead service lines.

(iv) **[Copies of written]** **Written** correspondence with the Department relating to the implementation of a public education program, which shall be kept for at least 12 years after the completion of the public education program.

(v) **[Copies of written]** **Written** correspondence with the Department relating to permitting, construction and operation of **[corrosion control treatment]** **CCT**, including source water treatment, if applicable, which shall be kept for at least 12 years.

(vi) **[Plans]** **Design plans**, specifications and permits for water system facilities, which shall be kept for the life of the facility.

(vii) **Current service line inventory, which shall be kept for the life of the facility. Previous versions of the service line inventory shall be kept for at least 12 years from the date each version was last updated.**

(viii) **Current lead service line replacement plan, which shall be kept for at least 12 years from the date the water system determines all lead service lines have been replaced. Previous versions of the service line replacement plan shall be kept for at least 12 years from the date each version was last updated.**

(ix) **Any additional reports, surveys, letters, evaluations, schedules and Department determinations from this subchapter that are not specifically identified in this paragraph shall be kept for at least 12 years.**

(b) *Operation and maintenance plan.*

(1) A community water system which completes construction or modification of **[corrosion control treatment]** **CCT** facilities in accordance with this subchapter shall include in its operation and maintenance plan required under § 109.702 (relating to operation and maintenance plan) information concerning the new or modified **[corrosion control treatment]** **CCT**.

(2) A nontransient noncommunity water system which completes construction or modification of **[corrosion control treatment]** **CCT** facilities in accordance with this subchapter shall develop an operation and maintenance plan for the facilities.

(3) The operation and maintenance plan for **[corrosion control treatment]** **CCT** facilities shall conform to the requirements of § 109.702(b) and (c) and shall also contain at least the following information:

(i) A description of the facilities.

(ii) An explanation of startup and normal operation procedures.

(iii) A routine maintenance program.

(iv) A records and reporting system.

(v) Sampling and analysis program.

(vi) Staffing and training.

(vii) A safety program.

(viii) An emergency plan and operating procedures.

(ix) Manufacturers' manuals.

(c) *Operator certification.* Community water systems and nontransient noncommunity water systems which are required to construct or modify **[corrosion control treatment]** **CCT** facilities in compliance

with this subchapter shall comply with the requirements under § 109.704 (relating to operator certification).

(d) **[*Lead service line replacement.***

(1) ***Initiation of lead service line replacement.*** **A system that exceeds the lead action level when conducting lead and copper tap monitoring in accordance with § 109.1103(c)(1) or (d)(1) after construction or modification of corrosion control treatment facilities shall initiate lead service line replacement. The first year of lead service line replacement begins on the first day following the end of the monitoring period in which the action level was exceeded. If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which sampling occurred. If the Department has designated an alternate monitoring period in writing, the end of the monitoring period is the last day of the designated alternate monitoring period.**

(2) ***Replacement schedule.*** **The water supplier shall replace annually at least 7% of the initial number of lead service lines in place at the beginning of the first year of replacement. The number of lead service lines shall be based on the materials evaluation conducted in accordance with § 109.1103(g)(1). The Department may require a system to replace lead service lines on a shorter schedule where, because of the number of lead service lines in the system, a shorter replacement schedule is feasible. The Department will notify the water supplier in writing within 6 months of the initiation of lead service line replacement of its decision to require a shorter replacement schedule.**

(3) ***Lead service line sampling.*** **The water supplier may sample an individual lead service line to determine whether the line is contributing sufficient lead to warrant its replacement. Lead service lines shall be sampled in accordance with § 109.1103(h)(5). The water supplier is not required to replace a lead service line if none of the lead concentrations in any service line samples from that line exceeds 0.015 mg/L.**

(4) ***Conditions of replacement.*** **The water supplier shall replace the portion of the lead service line that it owns. In cases where the system does not own the entire lead service line, the system shall notify the owner of the line, or the owner's authorized agent, that the system will replace the portion of the service line that the system owns and shall offer to replace the owner's portion of the line. A system is not required to bear the cost of replacing the privately-owned portion of the line or to replace the privately-owned portion of the if the owner refuses to pay for the cost of replacement of the privately-owned portion of the line, or if any laws prohibit this replacement. A system that does not replace the entire length of service line shall complete the following tasks:**

(i) **The system shall provide notice to residents of all buildings served by the line at least 45 days prior to commencing partial line replacement. The Department may allow a shorter time period for notification in the case of emergency repairs. The notice must explain that residents may experience a temporary increase of lead levels in their drinking water, along with information on measures consumers can take to minimize their exposure to lead. Residents shall be informed that the system will, at the system's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content in accordance with § 109.1103(h)(5) within 72 hours after the completion of the partial replacement of the service line.**

(ii) **The system shall collect the partial lead service line replacement sample and report the results of the analysis to the owner and the residents served by the line within 3 business days of receiving the results.**

(iii) **Information required under subparagraphs (i) and (ii) shall be provided by mail to the residents of individual dwellings. Systems have the option to post this information in a conspicuous location in those instances where multifamily dwellings are served by the line.**

(5) ***Discontinuation of lead service line replacement.*** **A water supplier may cease replacing lead service lines if the system meets the lead action level during two consecutive 6-month monitoring periods when conducting lead and copper tap monitoring. Thereafter, if the system exceeds the lead action level, the water supplier shall recommence replacing lead service lines in accordance with paragraph (6).**

(6) ***Resumption of lead service line replacement.*** **Water systems that resume a lead service line replacement program shall update their lead service line inventory to include those sites that were previously excluded under paragraph (3). Systems shall divide the updated number of remaining lead service lines by the number of remaining years in the replacement program to determine the number that must be replaced each year. If the system has completed a 15-year lead service line replacement program, the Department will determine a schedule for replacing or retesting lead service lines that were previously tested out under the replacement program (when the system reexceeds the lead action level)] {Reserved}**.

§ 109.1108. Fees.

An application for the review of a **[corrosion control treatment]** **CCT** feasibility study under § **[109.1102(b)(3) (relating to action levels and treatment technique requirements)]** **109.1102(b) (relating to lead and copper action levels, 90th percentile calculation and treatment technique requirements)**, a permit from the Department under this subchapter or a Department designation of **[optimal corrosion control treatment]** **OCCT** performance requirements in accordance with § **[109.1102(b)(2)(ii)]** **109.1102(b)** must be accompanied by a fee in the amount specified in Subchapter N (relating to drinking water fees).

§ 109.1109. Service line and connector inventory, service line replacement plan and sample site plan.

(a) *Service line and connector inventory.* All water systems shall develop an inventory that identifies the materials and location of each service line and connector attached to the public water distribution system and submit the inventory to the Department by November 1, 2027. Water systems approved to operate after May 1, 2027, shall submit the inventory to the Department within 6 months of the issuance of the operation permit or noncommunity water system approval. The inventory must meet the following requirements:

(1) The inventory must be submitted in a format acceptable to the Department.

(2) The inventory must include all service lines and identified connectors that are attached to the public water distribution system regardless of ownership status. Where service line ownership is shared, the inventory includes both the portion of the service line owned by the water system and the portion of the service line owned by the customer but would only be counted as one service line within the inventory.

(3) When conducting the inventory of service lines and connectors in its distribution system, a water system shall use any information that was previously identified during distribution system evaluations and maintenance which describes service line and connector materials and locations. The water system shall also review the following sources of information to identify service line and connector materials for the inventory:

(i) All construction and plumbing codes, permits, and existing records or other documentation which indicates the service line and connector materials.

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

(iii) All records of inspections in the distribution system that indicate the material composition of service lines and connectors.

(iv) Existing water quality information, which includes the results of prior analyses indicating locations that may be particularly susceptible to high lead or copper concentrations. Historical results below lead and copper action levels are not necessarily indicative of nonlead service lines.

(v) The water system may use other sources of information not listed in subparagraphs (i)—(iv) if approved or required by the Department.

(4) Water systems shall include each connector identified under paragraphs (2) and (3) in the inventory. Connector materials must be categorized in accordance with subparagraphs (i)—(iv):

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

(ii) "Non-Lead" where the connector is determined through an evidence-based record, method or technique not to be made of lead. Water systems are not required to identify the specific material of a nonlead connector; however, they may use the material type as an alternative to categorizing it as a "Non-Lead" connector. Water systems may identify the material as nonlead for all connectors installed after either of the dates identified in clause (A) or (B):

(A) January 6, 1991, the effective date of the Plumbing System Lead Ban and Notification Act (35 P.S. §§ 723.1—723.17).

(B) The compliance date of a local law prohibiting the use of service line materials that do not meet the 1986 definition of "lead free" in accordance with section 1417 of the Federal act (42 U.S.C. § 300g-6), as amended in 1986 (Public Law 99-339, 100 Stat. 651).

(iii) "Unknown" where the material of the connector is not known and it was installed prior to either of the dates identified in subparagraph (ii).

(iv) "No connector present" where there is no connector at any point along the service line.

(v) The total number of connectors categorized as "Lead" and the total number of connectors categorized as "Unknown" must be included in the inventory submitted to the Department in accordance with this subsection.

(5) Water systems shall include any information on service line materials identified under paragraphs (2) and (3) in the inventory. Each service line, or portion of the service line where the line is split by a curb stop, meter box or other physical interruption, must be categorized in accordance with subparagraphs (i)—(v).

(i) "Lead" where the service line is a lead service line as defined in § 109.1 (relating to definitions).

(ii) "Galvanized Requiring Replacement" where the service line is a GRR service line as defined in § 109.1. If the water system is unable to demonstrate that a galvanized service line was never downstream of a lead service line or lead connector, it shall be categorized as "Galvanized Requiring Replacement."

(iii) "Non-Lead" where the service line is determined through an evidence-based record, method or technique not to be lead or GRR. Water systems are not required to identify the specific material of a nonlead service line; however, they may use the material type as an alternative to categorizing it as a "Non-Lead." Water systems may identify the material as nonlead for all service lines installed after either of the dates identified in subparagraph (4)(ii)(A) or (B).

(iv) "Lead Status Unknown" where the service line is not known to be lead, GRR, or a nonlead service line, such as where there is no documented evidence or other information reliably supporting identification of the service line material.

(v) When a service line is split by a curb stop, meter box or other physical interruption, it must be categorized in accordance with the following table:

Segment 1 Material Type		*Segment 2 Material Type*		*Service Line Category*
Lead or lead-lined		Any material or unknown material		Lead
Any material or unknown material		Lead or lead-lined		Lead
Unknown material		Any material but lead, lead-lined or galvanized		Lead Status Unknown
Any material but lead, lead-lined or galvanized		Unknown material		Lead Status Unknown
Any material but lead, lead-lined, galvanized, or unknown		Any material but lead, lead-lined, galvanized, or unknown		Non-Lead
Segment 1		Segment 2		
Lead connector upstream or line ever previously lead?	Material Type	Lead Connector Upstream?	Material Type	

Segment 1 Material Type		***Segment 2 Material Type***		***Service Line Category***
No	**Any material but lead, lead-lined or unknown**	**No**	**Any material but lead, lead-lined or unknown**	**Non-Lead**
Yes or Not sure	**Galvanized**	**Any response**	**Unknown material or any material but lead or lead-lined**	**Galvanized Requiring Replacement**
Yes or Not sure	**Unknown material or any material but lead or lead-lined**	**Any response**	**Galvanized**	**Galvanized Requiring Replacement**
No	**Unknown material or any material but lead or lead-lined**	**Yes or Not sure**	**Galvanized**	**Galvanized Requiring Replacement**

(vi) The total number of each category of service line must be included in the inventory submitted to the Department in accordance with this subsection.

(6) The inventory must include a street address for each service line and associated connector(s). Where a street address is not available, a unique locational identifier, such as block, Global Positioning System (GPS), intersection or landmark may be used.

(7) Water systems shall identify and track service line materials, connector materials and addresses in the inventory as they are encountered during normal operations, such as reading water meters or performing maintenance activities.

(8) The inventory must be publicly accessible.

(i) The publicly accessible inventory must include the information described in paragraphs (2)—(6) and be updated in accordance with paragraph (9).

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

(iii) When a water system only has nonlead service lines and connectors in its inventory, it may use a written statement for its publicly accessible information instead of the inventory, declaring that the distribution system has nonlead service lines and connectors only. The statement must include a general description of all applicable sources described in paragraph (3) used to make this determination.

(iv) Instructions to access the publicly accessible inventory, including inventories consisting only of a statement in accordance with subparagraph (iii), must be included in the Consumer Confidence Report in accordance with § 109.416(3) (relating to CCR requirements).

(9) Water systems shall update the inventory annually with any new information acquired from all applicable sources described in paragraphs (2) and (6) and any lead or GRR service line replacements, service line material inspections or lead connector replacements that may have been conducted.

(i) A water system that updates its inventory shall comply with the following requirements:

(A) Submit any updated versions of the inventory to the Department by January 30, 2029, and annually by January 30 thereafter.

(B) Inventory updates must be reflected in the publicly accessible inventory no later than the deadline to submit the updated inventory to the Department in clause (A).

(C) Water systems shall identify the material of all lead status unknown service lines by the applicable mandatory service line replacement deadline of December 31, 2037, in accordance with § 109.1110(a)(6) (relating to service line and lead connector replacement requirements).

(D) Water systems with inventories that contain only nonlead service lines and nonlead connectors, or no connectors present, are not required to provide inventory updates to the Department or the public, except as required in subparagraph(ii).

(ii) In the case that a water system meeting the requirements of subparagraph (i)(D), subsequently discovers any lead or GRR service line, or lead connector within its system, the water system shall:

(A) Notify the Department in writing within 60 days of identifying the lead or GRR service line(s) or lead connector(s).

(B) Provide consumer notification in accordance with § 109.1104(d)(2) (relating to public education and notification, supplemental monitoring and mitigation requirements) within 30 days of identifying the lead or GRR service line(s) or lead connector(s).

(C) Submit an updated inventory in accordance with the schedule established by the Department.

(D) Replace the lead or GRR service line(s) or lead connector(s) in accordance with § 109.1110.

(iii) Each updated inventory and subsequent updates to the publicly accessible inventory must include the following information regarding service line material identification and replacement:

(A) The total number of lead service lines in the inventory.

(B) The total number of GRR service lines in the inventory.

(C) The total number of lead status unknown service lines in the inventory.

(D) The total number of nonlead service lines in the inventory.

(E) The total number of lead connectors in the inventory.

(F) The total number of connectors of unknown material in the inventory.

(G) The total number of full lead service line replacements and full GRR service line replacements that have been conducted in each preceding program year as defined in § 109.1110(a)(1).

(H) The total number of partial lead service line replacements and partial GRR service line replacements that have been conducted in each preceding program year as defined in § 109.1110(a)(1).

(10) If a consumer or customer (if different from the person served at that service connection) notifies the water system of a suspected incorrect categorization of their service line material in the inventory, the system shall:

(i) Respond within 30 days of receiving the notification to make an offer to inspect the service line.

(ii) Certify to the Department, by January 30, 2029, and annually by January 30 thereafter, that the water system offered to inspect the service lines within 30 days of receiving the customer notification, according to subparagraph (i).

(11) All water systems shall validate the accuracy of service lines categorized as "non-lead" as follows:

(i) Identify a validation pool consisting of all service lines categorized as "non-lead," but excluding nonlead service lines identified by the following:

(A) Records showing the service line was installed after either of the following dates:

(I) January 6, 1991, the effective date of the Plumbing System Lead Ban and Notification Act.

(II) The compliance date of a local law prohibiting the use of service line materials that do not meet the 1986 definition of "lead free" in accordance with section 1417 of the Federal act, as amended in 1986 (Public Law 99-339, 100 Stat. 651).

(B) Visual inspection of the exterior of the pipe at a minimum of two points using one of the methods specified in subclauses (I)—(IV).

(I) Closed-circuit television inspection at the curb box.

(II) Visual inspection at an existing access point, such as a meter pit or service line entry to the basement.

(III) Mechanical excavation at a point greater than or equal to 18 inches from the curb stop.

(IV) Another method approved by the Department.

(C) Internal pipe closed-circuit television inspection of the full length of the service line.

(D) A combination of system reviewed records, as well as use of one of the following which confirmed each record was accurate for each portion of the service line:

(I) Statistical analysis of homogeneous areas within the distribution system through physical verification of enough lines to reach at least as many service lines as the validation pool (95% confidence level).

(II) Targeted, flushed or sequential sampling that has been approved by the Department and provides water quality information for the service line.

(III) Visual inspection at a single point. When using this method, the associated record may not be a record exclusively of the same single point along the service line.

(E) Previously replaced lead or GRR service lines.

(F) Another method or combination of methods approved by the Department.

(ii) Confirm the material of service lines of a random sample of nonlead service lines within the validation pool using the following method:

(A) Select a random sample of nonlead service lines by use of a random number generator or lottery method.

(B) Conduct a visual inspection of the pipe exterior at a minimum of two points using one of the methods specified in subparagraph (i)(B)(I)—(IV). If a water system previously conducted a visual inspection of the pipe as part of the initial categorization, they shall use different points when completing the validation. Where the service line is split, the water system shall conduct at least one visual inspection on each portion of the service line. Where the service line is split and only one portion of the service line is included in the validation pool, systems shall conduct at least one point of visual inspection on the unconfirmed portion of the service line.

(C) Validate at least as many service lines as are required in the following table:

Size of validation pool	*Number of validations required*
<1,500	20% of validation pool
1,500 to 2,000	322
2,001 to 3,000	341
3,001 to 4,000	351
4,001 to 6,000	361
6,001 to 10,000	371
10,001 to 50,000	381
>50,000	384

(iii) If physical access to private property is necessary to complete the validation and the water system is unable to gain access, the system is not required to conduct a validation at that site. The system shall document the attempt and replace the site by randomly selecting a new service line that meets the requirements of subparagraphs (i) and (ii) to conduct the validation.

(iv) Inventory validations must be completed by December 31, 2034, for water systems subject to the 10-year mandatory service line replacement deadline and for water systems who have reported only nonlead service lines in their inventory, unless a shorter deadline has been established by the Department.

(v) Water systems may make a written request for a waiver of the inventory validation requirements by submitting documentation to the Department demonstrating the system has conducted an inventory validation that meets the requirements specified in subparagraphs (i)—(iii) by November 1, 2027, and obtaining written approval of the waiver from the Department.

(vi) Systems validating service lines in accordance with this paragraph shall submit the following to the Department no later than 30 days after the deadline established under subparagraph (iv):

(A) A list of the locations of any nonlead service lines identified to be a lead or GRR service line as well as the method(s) used to recategorize the service lines.

(B) The specific version and date of the inventory used to determine the number of nonlead service lines included in the validation pool.

(C) The system may not use an inventory older than the date identified in clause (B) to establish its validation pool.

(vii) Water systems that conduct inventory validation shall meet all requirements of this paragraph and comply with any additional actions required by the Department to address inventory inaccuracies.

(b) *Service line replacement plan.* All water systems with one or more lead, GRR or lead status unknown service lines in their distribution system shall, by November 1, 2027, submit a service line replacement plan to the Department. Water systems approved to operate after May 1, 2027, shall submit the service line replacement plan to the Department within 6 months of submitting the inventory in accordance with subsection (a). The service line replacement plan must meet the requirements of this subsection and must be sufficiently detailed to ensure a system is able to comply with the service line inventory requirements in subsection (a) and the service line replacement requirements in accordance with § 109.1110.

(1) The service line replacement plan must include a description of the following:

(i) A strategy for determining the material composition of lead status unknown service lines in the service line inventory.

(ii) A standard operating procedure for conducting full service line replacement.

(iii) A strategy for informing consumers and customers before a full or partial lead or GRR service line replacement, consistent with the notification and mitigation protocol requirements specified in § 109.1110(e).

(iv) A procedure for consumers and customers to flush service lines and premise plumbing of particulate lead following disturbance of a lead, GRR or lead status unknown service line in accordance with § 109.1104(e) and following full or partial replacement of a lead or GRR service line, consistent with the notification and mitigation protocol requirements specified in § 109.1110(e).

(v) A service line replacement prioritization strategy based on factors including, but not limited to, the targeting of known lead and GRR service lines and community-specific factors, such as populations disproportionately impacted by lead and populations most sensitive to the effects of lead.

(vi) A funding strategy for conducting service line replacements. Where the water system intends to charge customers for the cost to replace all or a portion of the service line because it is authorized or required to do so under State or local law or water tariff agreement, the funding strategy must include a description of whether and how the water system intends to assist customers who are unable to pay to replace the portion of the service line they own.

(vii) A communication strategy to inform residential and nonresidential customers and consumers served by the water system about the service line replacement plan and program.

(viii) Identification of any laws, regulations and/or water tariff agreements that affect the water system's ability to gain access to conduct full lead and GRR service line replacement, including the citation to the specific laws, regulations or water tariff agreement provisions. This includes identification of any laws, regulations, and/or water tariff agreements that require customer consent and/or require or authorize customer cost-sharing.

(ix) For any water system that identifies any lead-lined galvanized service lines in the service line inventory as described in subsection (a), a strategy to determine the extent of the use of lead-lined galvanized service lines in the distribution system and categorize any lead-lined galvanized service lines as lead in accordance with the table under subsection (a)(5)(v).

(x) For any water system that is eligible for and plans to use a deferred deadline for service line replacement in accordance with § 109.1110(a)(10)(iii):

(A) Documentation to support the system's determination that it is eligible for a deferred deadline in accordance with § 109.1110(a)(10)(iii)(A).

(B) Identification of the deferred deadline and the associated cumulative average replacement rate that the system considers to be the fastest feasible, but no slower than the deadline calculated under § 109.1110(a)(10)(iii)(A), as well as the annual number of replacements required, the length of time in years and months and the date of completion for this deadline and rate.

(C) Information supporting the system's determination that replacing lead and GRR service lines by an earlier date and faster rate than provided under the deferred deadline provision in § 109.1110(a)(10)(iii) is not feasible.

(2) The service line replacement plan must be made accessible to the public. Water systems serving greater than 50,000 persons shall make the plan available to the public online.

(3) Water systems shall annually update the service line replacement plan to include any new or updated information and submit the updates to the Department by January 30, 2029, and annually by January 30 thereafter. The water system shall make the updated plan publicly accessible no later than the deadline to submit the updated plan to the Department.

(i) If there is no new or updated information to include in the service line replacement plan, the water system may certify to the Department that the plan has no updates instead of resubmitting the plan, unless the system is replacing service lines in accordance with a deferred deadline and subparagraph (ii) applies. The certification must be received by January 30, 2029, and annually by January 30 thereafter.

(ii) If there is no new or updated information to include in the service line replacement plan and the water system is replacing service lines in accordance with a deferred deadline in

accordance with § 109.1110(a)(10)(iii), every 3 years after the initial submission of the plan, the system shall update the information specified in subsection (b)(1)(x) to support why the system continues to need the deferred deadline and resubmit the plan to the Department.

(iii) Water systems may provide instructions on how to access the updated plan online instead of providing the entire updated plan to the Department.

(iv) A water system that submits an updated inventory with only nonlead service lines is no longer required to resubmit the service line replacement plan or certify to the Department that the plan has no updates.

(c) *Sample site plan.* Each water system shall develop a sample site plan which includes lead and copper tap sample site locations, WQP sample site locations at the entry point and in the distribution system, and a copy of the tap sampling protocol that is provided to individuals who are collecting samples. The water system shall complete the steps in paragraphs (1)—(3) and submit the sample site plan to the Department no later than the applicable date to begin lead and copper tap monitoring under § 109.1103 (relating to monitoring requirements) and upon request. The Department may require modifications to submitted sample site plans.

(1) *Identification of tap sampling sites*. Each water system shall identify a pool of tap sampling sites that will allow the water system to collect the minimum number of lead and copper tap samples required in § 109.1103.

(i) Each water system shall use information collected as part of the service line inventory under subsection (a) regarding the material of service lines and connectors to identify sampling tiers according to subparagraph (ii).

(ii) Sampling tiers for lead and copper tap sampling must be assigned in accordance with clauses (A)—(E), with Tier 1 being the highest tier and Tier 5 being the lowest tier.

(A) Tier 1 sampling sites are single family structures with premise plumbing made of lead and/or served by a lead service line. A single family structure is a building constructed as a single family residence that is currently used as either a residence or a place of business.

(B) Tier 2 sampling sites are buildings, including multiple-family residences, with premise plumbing made of lead and/or served by a lead service line.

(C) Tier 3 sampling sites are served by a lead connector, a GRR service line or contain galvanized premise plumbing identified as ever having been downstream of a lead service line. Tier 3 for community water systems only includes single family structures.

(D) Tier 4 sampling sites contain copper premise plumbing with lead solder installed before January 6, 1991, the effective date of the Plumbing System Lead Ban and Notification Act. Tier 4 for community water systems only includes single-family structures.

(E) Tier 5 sampling sites are representative of sites throughout the distribution system. A representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

(iii) Water systems shall identify locations in the sample site plan by selecting from sites in the highest tier as defined in subparagraph (ii), unless the site has been found to be unavailable as specified in subparagraph (iv). A system without a large enough number of sites from a higher tier to meet the number of sites required in § 109.1103 may identify sites

from the next highest tier. For community water systems where Tier 2 sites comprise at least 20% of the residential structures served by the water system, Tier 2 sites may be sampled even when Tier 1 sites are available.

(iv) Sites are considered unavailable if a customer refuses to participate in sampling or a system has made at least two outreach attempts at a site and has not received a response. The number of unavailable sites from which the system requested customer participation for sampling during the tap sampling period must be submitted to the Department in accordance with paragraph (4)(ii). Systems may continue conducting outreach at sites considered unavailable and may subsequently add these sites to the sample site plan for any reason, such as receiving a service initiation request from a new property owner or occupant, or receiving a new consumer request for sampling.

(v) A water system that has Tier 1 and/or Tier 2 sites shall collect all samples for monitoring under § 109.1103 from those sites. A water system that cannot identify enough Tier 1 and/or Tier 2 sites to meet the minimum number of sites required in § 109.1103, shall collect samples from every available Tier 1 and/or Tier 2 site, unless a site is unavailable as specified in subparagraph (iv), and collect the remaining samples from the next highest identified Tier sites available, as determined in accordance with the tiering requirements under subparagraph (ii).

(vi) A water system that has fewer than five sites with taps that can be used for human consumption meeting the sample site criteria of this paragraph shall collect at least one sample from each tap and then collect additional samples from those taps on different days during the tap sampling period to meet the required number of sites listed in § 109.1103.

(vii) Sample sites cannot include sites with installed POE devices or taps with POU devices designed to remove inorganic contaminants, except at water systems using permitted POE devices to meet other primary and secondary drinking water standards at all service connections.

(viii) This subparagraph applies to any nontransient noncommunity water system, or community water system that meets the criteria of § 109.1104(a)(2)(i)(I), that has an insufficient number of drinking water taps that meet the 6-hour minimum stagnation time for first-liter or first-liter and fifth-liter paired samples. All samples collected under this subparagraph must meet the tap sampling protocol requirements in § 109.1103(a)(4), except for the minimum stagnation period identified in § 109.1103(a)(4)(ii)(D).

(A) The system may apply to the Department, in writing, to request substitution of first-liter or first-liter and fifth-liter paired samples with samples that do not meet the 6-hour minimum stagnation time. The written request must include documentation identifying the stagnation times and locations for enough samples to meet the required number of sites listed in § 109.1103.

(B) Upon written approval by the Department, the system shall collect as many first-liter or first-liter and fifth-liter paired samples as possible from interior taps used for consumption. The remaining tap samples needed to meet the required number of sites listed in § 109.1103 must be collected from the sites with the longest stagnation times and at the times specified in the written request.

(2) *WQP sample sites.*

(i) *WQP distribution system samples.* Sites must be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system and seasonal variability. Sites may be, but are not required to be, at locations targeted for lead and copper tap sampling identified under subsection (c)(1). Sites used for total coliform sampling under § 109.701(a)(5) (relating to reporting and recordkeeping) may be selected by the system.

(ii) *WQP entry point samples.* Samples collected at the entry point(s) must be representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system shall sample at the entry point during periods of normal operating conditions and when water is representative of all sources being used as specified in the comprehensive monitoring plan required under § 109.718 (relating to comprehensive monitoring plan).

(3) *Tap sampling protocol.* The water system shall include in its sample site plan a copy of the tap sampling protocol, which meets the requirements of § 109.1103(a)(4), and that is provided to individuals who are collecting samples. If the water system seeks to modify its sample collection instructions, it must submit the updated version of the tap sampling protocol to the Department for review prior to the next tap sampling period.

(4) *Sample site plan updates.* A water system that seeks to update the tap sampling protocol, tap sampling locations or WQP sample locations shall update the sample site plan and submit a copy of the updated plan to the Department.

(i) Water systems with lead, GRR or lead status unknown service lines in the service line inventory developed under subsection (a) shall reevaluate the tap sampling locations used in its sampling pool prior to each round of tap sampling conducted by the system, or annually, whichever is more frequent. If updates to the sample site plan are necessary following a reevaluation of tap sample locations, the plan must be updated and submitted to the Department prior to the start of the next tap sampling period.

(ii) Water systems that cannot identify enough Tier 1 or 2 sampling sites from the current service line inventory to meet the minimum number of sample sites specified in § 109.1103, as required under subsection (c)(1)(v), shall submit documentation in support of the conclusion that there are an insufficient number of available Tier 1 and/or Tier 2 sites, including documentation of applicable customer refusals for sampling, prior to the next tap sampling period.

(iii) Water systems with OCCT that make changes to WQP sample locations shall update the sample site plan and submit it to the Department prior to conducting sampling in accordance with the updated plan.

§ 109.1110. Service line and lead connector replacement requirements.

(a) *Mandatory full service line replacement.* All water systems shall replace all lead and GRR service lines under the control of the water system unless the replacement would leave in place a partial lead or GRR service line.

(1) *Program year.* For the purposes of this subsection, a "program year" is defined as follows:

(i) The first mandatory service line replacement program year is from November 1, 2027, to December 31, 2028.

(ii) Each subsequent program year is on a calendar year basis from January 1 to December 31.

(2) *Identification of authority to access*. This section does not establish the criteria for determining whether a system has access to conduct full service line replacement. Any laws, regulations and/or water tariff agreements to gain access to conduct full service line replacement must be identified in the service line replacement plan required under § 109.1109(b) (relating to service line and connector inventory, service line replacement plan and sample site plan).

(3) *Access to conduct full service line replacement.* When a water system has access, such as legal access or physical access to conduct full service line replacement, the service line is considered to be under its control; therefore, the water system shall replace the service line according to this section.

(4) *Lack of access to conduct full service line replacement.* When a water system does not have access to conduct full service line replacement, it is not required to replace the line.

(i) The water system shall document the reasons that it does not have access and include any laws, regulations and/or water tariff agreements that affect the water system's ability to gain access to conduct full replacement of lead and GRR service lines.

(ii) The water system shall submit the documentation required under subparagraph (i) to the Department by January 30, 2029, and annually by January 30 thereafter.

(5) *Reasonable effort to obtain consent.* When a water system has legal access to conduct full service line replacement only after property owner consent is obtained, the water system shall make a reasonable effort, as defined in subparagraph (i), to obtain property owner consent. If a water system does not obtain consent after making a reasonable effort to obtain it from any property owner, then the water system is not required to replace any portion of the service line at that address unless there is a change in ownership of the property as described in subparagraph (ii).

(i) A "reasonable effort" must include at least four attempts to engage the property owner using at least two different methods of communication specified in clauses (A)—(H) before the applicable deadline of mandatory service line replacement described in paragraph (6). The Department may require systems to conduct additional attempts and may require specific outreach methods to be used. Acceptable methods of communication include the following:

(A) In-person conversation.

(B) Phone call.

(C) Text message.

(D) Email.

(E) Written letter.

(F) Postcard.

(G) Information left at the door such as a door hanger.

(H) Any other method approved by the Department.

(ii) Within 6 months of any change in ownership of the property, the water system shall offer full service line replacement to any new property owner. Systems may use new service initiation or service transfer to a new customer to identify when there is a change in ownership. Within 1 calendar year of any change in ownership of the property, the system shall make a reasonable effort, as defined in subparagraph (i), to obtain the property owner's consent. If the water system is unable to obtain consent from the current property owner after making a reasonable effort to obtain it, the water system is not required to replace the line. This subparagraph continues to apply until all lead and GRR service lines are replaced.

(iii) The system shall submit to the Department by January 30, 2029, and annually by January 30 thereafter, documentation of each reasonable effort conducted where the system was not able to obtain property owner consent, where consent is required by laws, regulations and/or water tariff agreements.

(6) *Replacement deadline.* Water systems shall begin to implement a mandatory service line replacement program no later than November 1, 2027, and shall replace all lead and GRR service lines under their control no later than December 31, 2037, unless the system is subject to a different deadline under paragraph (10).

(7) *Calculation of the replacement pool.* To calculate the initial replacement pool, systems shall add the total number of lead, GRR and lead status unknown service lines in the service line inventory submitted under § 109.1109(a).

(i) The water system shall include service lines that are not under the control of the system in the replacement pool.

(ii) Annually, at the beginning of each program year, water systems shall update the replacement pool according to the counts of specific types of recategorized service lines in the inventory as follows:

(A) Unknown service lines that are identified as nonlead service lines must be subtracted from the replacement pool. Unknown service lines that are identified as lead or GRR service lines must be recategorized appropriately in the inventory and replacement pool, but they do not change the number of service lines in the replacement pool because recategorization does not remove these service lines from the replacement pool.

(B) Nonlead service lines discovered to be lead or GRR service lines must be added to the replacement pool.

(C) Lead or GRR service lines discovered to be nonlead service lines must be subtracted from the replacement pool. However, the water system shall not subtract lead or GRR service lines from the replacement pool when they are replaced.

(D) Each entire service line must count only once for purposes of calculating the replacement pool.

(8) *Annual number of replacements required.* To calculate the number of lead and GRR service lines a system is required to replace in a given program year, the number of service lines in the replacement pool calculated at the beginning of each program year must be divided by the total number of program years remaining until the deadline to complete mandatory service line replacement, as specified under paragraph (6).

(9) *Replacement rate.* Water systems shall meet a minimum cumulative average annual replacement rate for completing mandatory service line replacement in accordance with this paragraph.

(i) *Annual replacement rate.* A water system shall replace lead and GRR service lines at an average annual replacement rate of at least 10%, unless the system is subject to a different replacement deadline under paragraph (10).

(A) A system that has a shortened replacement deadline, as determined under paragraph (10)(i) or (ii), shall replace lead and GRR service lines at an average annual replacement rate calculated by dividing 100 by the number of years needed to meet the shortened deadline determined by the Department, expressed as a percentage.

(B) A system that has a deferred deadline, as determined under paragraph (10)(iii), shall calculate the minimum cumulative average replacement rate by dividing 100 by the number of years needed to achieve replacing 39 annual replacements per 1,000 service connections, expressed as a percentage.

(ii) *Cumulative percent of service lines replaced.* To calculate the cumulative percent of service lines replaced at the end of each mandatory service line replacement program year, water systems shall divide the total number of lead and GRR service lines replaced thus far in the program by the number of service lines within the replacement pool determined under paragraph (7), expressed as a percentage.

(A) When calculating the cumulative average annual replacement rate, water systems may only include full service line replacements of lead or GRR service lines when counting the number of service lines replaced. Wherever the system conducts a replacement of either a portion of or an entire lead or GRR service line, the replacement only counts as a full service line replacement if, after the replacement, the entire service line can be categorized as nonlead in the service line inventory.

(B) For purposes of mandatory service line replacement, systems shall count each entire service line once, including where the service line is split, with a single material categorization as determined under § 109.1109(a)(5).

(C) A full service line replacement is counted where a nonlead service line is installed for use and the lead or GRR service line is disconnected from the water main or other service line. If the lead or GRR service line is disconnected from the water main or system-owned portion of the service line but not removed, the water system shall be subject to a law, regulation, and/or water tariff agreement, or have a written policy to preclude the water system from reconnecting the lead or GRR service line to the water main or other service line.

(D) A full service line replacement may be counted where a system physically disconnects a service line that is not in use and the water system does not install a new nonlead service line because there is no service line in use (for example, at an abandoned property). If the disconnected lead or GRR service line is not removed, the water system shall be subject to a law, regulation, and/or water tariff agreement, or have a written policy that precludes the water system from reconnecting the disconnected service line and requires a new nonlead service line be installed if active use is to resume.

(E) Water systems shall not count the following as a full service line replacement:

(I) Where the service line is partially replaced as defined in § 109.1 (relating to definitions).

(II) Where a lead, GRR or unknown service line is determined to be a nonlead service line.

(III) Where only a lead connector is replaced.

(IV) Where pipe lining or coating technologies are used while the lead or GRR service line remains in use.

(V) Where a water system does not replace a lead or GRR service line because it is not under the control of the system.

(iii) *Cumulative average replacement rate.* The annual replacement rate must be assessed annually as a cumulative average. The first cumulative average replacement rate must be assessed at the end of the third program year and then annually at the end of each program year thereafter.

(A) The cumulative average replacement rate is calculated by dividing the most recent cumulative percent of service lines replaced, calculated in accordance with subparagraph (ii), by the number of completed program years.

(B) For each program year it is required to be calculated, the cumulative average replacement rate must be greater than or equal to the annual replacement rate as defined in subparagraph (i).

(C) A water system is not required to meet the cumulative average replacement rate if all of the following conditions are met:

(I) After November 1, 2027, the system has replaced all lead and GRR service lines in the replacement pool, as determined under paragraph (7), that are under the control of the system.

(II) All unknown service lines in the inventory have been identified.

(III) The system has documented and submitted to the Department the reasons the system currently does not have access to conduct full replacement of the remaining lead and GRR service lines in the replacement pool as specified in paragraph (4). When lead and GRR service lines come under the control of the system, the water system is required to replace the service lines. This subclause continues to apply until all lead and GRR service lines are replaced.

(D) For a system that has a shortened replacement deadline, as determined under paragraph (10)(i), the first cumulative average replacement rate must be assessed at the end of the program year that is at least 1 year after the shortened deadline determination. If the shortened replacement deadline is less than 3 years, the cumulative average replacement rate must be assessed on a schedule determined by the Department.

(10) *Shortened and deferred replacement deadlines.* A water system may complete mandatory service line replacement under a shortened or deferred deadline as specified in this paragraph.

(i) When the Department determines that a shortened replacement deadline is feasible for a water system based on the number of lead and GRR service lines in a system's inventory, the system shall replace service lines by the Department-determined deadline and by a faster minimum replacement rate in accordance with paragraph (9)(i)(A).

(A) The Department will make this determination in writing and notify the system of its finding.

(B) A shortened deadline will be established at any time throughout a system's replacement program if the Department determines a shorter deadline is feasible.

(ii) A water system with lead or GRR service lines that can complete full service line replacements in 5 years or less in accordance with this subparagraph, can defer installing or reoptimizing OCCT.

(A) A water system is not required to complete the steps under § 109.1102(b)(2.1) and(2.2) (relating to lead and copper action levels, 90th percentile calculation and treatment technique requirements) if the system meets all the requirements listed in subclauses (I)—(III).

(I) A water system shall meet the following applicable deadlines to complete mandatory service line replacement:

(-a-) A water system shall complete the service line replacement requirements in 5 years or less from the date of the end of the tap sampling period in which the system first exceeds the lead action level.

(-b-) A large water system without CCT shall complete the service line replacement requirements in 5 years or less from the date of the end of the tap sampling period in which the system's 90th percentile results first exceed the lead PQL.

(-c-) Any water system with less than 5 years remaining to complete mandatory service line replacements shall complete the service line replacements by December 31, 2037, unless a shortened deadline has been required under subparagraph (i).

(II) At a minimum, a water system shall replace lead and GRR service lines each year at an annual rate calculated in accordance with paragraph (9)(i)(A). For purposes of calculating the annual rate, the system shall replace all lead and GRR service lines remaining in the system's inventory at the tap sampling period end date in which the system first exceeds the lead action level or in which the system first exceeds the lead PQL.

(III) By the end of the 5-year-or-less period in subclause (I), the system shall have replaced all lead and GRR service lines in their replacement pool calculated in

accordance with paragraph (7), identified the material of all lead status unknown service lines, completed the inventory validation requirements in accordance with § 109.1109(a)(11), and replaced all unknowns found to be lead or GRR service lines.

(B) A water system that does not meet the requirements specified in clause (A) shall meet the requirements under § 109.1102(b)(2.1) or (2.2), as applicable, starting immediately after the system fails to meet the annual removal requirements under clause (A)(II).

(C) Water systems with CCT shall continue to operate and maintain CCT while completing the mandatory service line replacement requirements in this subparagraph.

(D) At the end of each year of the 5-year-or-less period, the system must submit written documentation to the Department that includes the number of lead and GRR service lines removed that year, and whether the minimum annual replacement rate in clause (A)(II) was met.

(E) After completing service line replacement in accordance with the requirements of this subparagraph, if the system either exceeds the lead action level or the lead PQL limit at the end of a subsequent tap sampling period, whichever is applicable, a water system shall meet the requirements under § 109.1102(b)(2.1) or (2.2).

(iii) A water system may defer service line replacement past the mandatory deadline to replace all lead and GRR service lines under their control no later than December 31, 2037, if the system meets the following criteria:

(A) If a water system replacing 10% of the total number of known lead and GRR service lines in a system's replacement pool results in an annual number of service line replacements by the water system that exceeds 39 per 1,000 service connections, the system may complete replacement of all lead and GRR service lines by a deadline that corresponds to the system conducting 39 annual replacements per 1,000 service connections at a cumulative average replacement rate assessed in accordance with paragraph (9)(iii). This subparagraph is also applicable if a water system with service lines newly under their control, after previously not having control, is required to conduct more than 39 annual replacements per 1,000 service connections.

(I) The number of annual replacements corresponding to 39 annual replacements per 1,000 service connections can be calculated by multiplying the number of service connections in a system by 0.039.

(II) The number of years needed to complete replacement is the total number of known lead and GRR service lines in a system's replacement pool divided by the number of annual replacements calculated under subclause (I).

(B) Any water system that is eligible for and plans to use a deferred deadline shall include information in the system's initial service line replacement plan and subsequent updates to the plan in accordance with § 109.1109(b)(1)(x). The system shall identify an annual replacement rate that is no less than 39 annual replacements per 1,000 service connections.

(C) As soon as practicable, but no later than the end of the second program year and every 3 years thereafter, the Department will determine in writing whether the deferred deadline and associated cumulative average replacement rate the system documented in the service line replacement plan are the fastest feasible to conduct mandatory service line

replacement and either approve the continued use of this deferred deadline and replacement rate as the fastest feasible for the system, or set a shorter deferred deadline and identify an associated replacement rate to ensure the system is replacing service lines at the fastest feasible rate for the system. The Department will consider information that includes, but is not limited to, the system's submissions of the service line inventory and replacement plan in accordance with § 109.1109 and information collected from other water systems conducting mandatory service line replacement. The Department may require the system to provide additional information to consider in its assessment of the continued use of a deferred deadline and the fastest feasible replacement rate.

(D) In the first 2 program years, the system shall comply with the annual replacement rate identified in its initial service line replacement plan, unless the Department determines a faster rate is feasible sooner. In subsequent program years, the system shall comply with the applicable deferred deadline and associated replacement rate identified in the Department's written determination of the deadline and replacement rate in clause (C).

(11) If a lead or GRR service line is discovered when the system's inventory is comprised of only nonlead service lines, the system shall complete the following requirements:

(i) Update the replacement pool calculated under paragraph (7).

(ii) Conduct a full service line replacement of the affected service line as soon as practicable, but no later than 180 days after the date the service line is discovered.

(A) Where a system determines that it is not practicable to conduct full service line replacement within 180 days after the date of discovery, such as due to freezing ground conditions, the system may request Department approval for an extension of no later than 1 year after the date the service line was discovered to replace the affected service line.

(B) The request for an extension must be made no later than 90 days after the date of discovery of the affected service line.

(b) ***Replacement of lead connectors when encountered by a water system.***

(1) The water system shall replace any lead connector when encountered during planned or unplanned water system infrastructure work, unless the connector is not under the control of the system, such as when the system does not have and cannot obtain access to conduct the connector replacement.

(i) Upon replacement of any connector that is attached to a lead or GRR service line, the water system shall follow risk mitigation measures for disturbances as specified in § 109.1104(e)(2) (relating to public education and notification, supplemental monitoring and mitigation requirements).

(ii) Following replacement of a lead connector, the water system shall update the information on the connector material and location in its inventory in accordance with § 109.1109(a)(4).

(2) The water system shall comply with any laws, regulations and/or water tariff agreements that require additional connectors to be replaced.

(c) *Customer-initiated service line replacement.* If any laws, regulations and/or water tariff agreements do not prevent customers from conducting partial lead or GRR service line replacements, the water system shall meet the following requirements:

(1) If the water system is notified by the customer that the customer intends to conduct a partial lead or GRR service line replacement, the water system shall:

(i) Replace the remaining portion of the lead or GRR service line at the same time as, or as soon as practicable after the customer-initiated replacement, but no later than 45 days from the date the customer conducted the partial replacement.

(ii) Provide notification and risk mitigation measures in accordance with subsection (e), as applicable, before the affected service line is returned to service.

(iii) Notify the Department within 30 days if it cannot meet the deadline in subparagraph (i) and complete the replacement no later than 180 days from the date the customer conducted the partial replacement.

(2) If the water system is notified or otherwise learns that a customer-initiated replacement occurred within the previous 6 months and left in place the system-owned portion of a lead or GRR service line, the water system shall:

(i) Replace any remaining portion of the affected service line within 45 days from the day of becoming aware of the customer-initiated replacement.

(ii) Provide notification and risk mitigation measures in accordance with subsection (e) within 24 hours of becoming aware of the customer replacement.

(iii) Notify the Department within 30 days if it cannot meet the deadline in subparagraph (i) and complete the replacement no later than 180 days from the date the system learns of the customer-initiated replacement.

(3) When a water system is notified or otherwise learns of a customer-initiated replacement of a lead or GRR service line that occurred more than 6 months in the past, the water system is not required to complete the lead or GRR service line replacement of the system owned portion according to this subsection. However, the remaining portion of the lead or GRR service line must be identified in the inventory in accordance with § 109.1109(a) and replaced in accordance with subsection (a).

(d) *Requirements for conducting partial service line replacements.* Water systems are prohibited from conducting a partial lead or GRR service line replacement, as defined under § 109.1, unless it is conducted as part of an emergency repair or in coordination with planned infrastructure work that impacts service lines, excluding planned infrastructure work solely for the purposes of lead or GRR service line replacement. When a water system has access to conduct full service line replacement as specified in subsection (a), the water system shall fully replace the service line. When a water system meets the criteria of this subparagraph and conducts a partial service line replacement, the following requirements must be met:

(1) The system shall comply with the notification and mitigation requirements specified in subsection (e).

(2) The system shall include a dielectric coupling separating the remaining service line and the newly installed service line to prevent galvanic corrosion unless the replaced service line is made of plastic.

(e) *Protocols for notification and mitigation for full and partial service line replacements.* Water systems shall comply with the requirements identified in paragraphs (1)—(4) for full and partial lead or GRR service line replacement in accordance with the time frames in paragraph (5).

(1) Provide written notification that meets the following requirements:

(i) Explain that consumers may experience a temporary increase of lead levels in their drinking water due to the replacement.

(ii) Meet the content requirements of 40 CFR 141.85(a)(1)(ii)—(iv) (relating to public education and supplemental monitoring and mitigation requirements).

(iii) Include contact information for the water system.

(iv) In instances where multifamily dwellings or multiple nonresidential occupants are served by the affected service line, the water system may elect to post the information at a conspicuous location instead of providing individual written notification to all persons served in residential and non-residential units.

(2) Provide a written procedure for consumers to flush service lines and premise plumbing of particulate lead following the replacement of a lead or GRR service line.

(3) Provide the consumer with a pitcher filter or POU device that is ANSI certified to reduce lead, 6 months of replacement cartridges and instructions for use. If the affected service line serves more than one residential or nonresidential unit, such as a multiunit building, the water system shall provide a pitcher filter or POU device, 6 months of replacement cartridges and use instructions to every residential and nonresidential unit in the building.

(4) Offer to the consumer to collect a follow-up tap sample for lead between 3 months and 6 months after completion of any full or partial replacement of a lead or GRR service line. Follow-up samples must be collected after at least 6 hours of stagnation, following the tap sampling protocol under § 109.1103(a)(4) (relating to monitoring requirements). The water system shall provide the results of the sample to the consumer in accordance with § 109.1104(b).

(i) Following a full replacement, the tap sample must be a first-liter sample.

(ii) Following a partial replacement, the tap sample must be a first-liter and fifth-liter paired samples.

(5) Water systems shall comply with the following time frames for providing notification and mitigation protocols for full and partial lead or GRR service line replacements.

(i) *Full service line replacement.* Any water system that conducts a full lead or GRR service line replacement shall meet notification and mitigation requirements in accordance with the following time frames:

(A) Provide written notification as specified in paragraph (1) to the persons served by the affected service line before the affected service line is returned to service and to the owner

or the owner's authorized agent, no later than 30 days following completion of the replacement.

(B) Meet the notification and mitigation requirements specified in paragraphs (2) and (3) before the affected service line is returned to service.

(C) Meet the follow up tap sampling requirements in accordance with the time frames specified in paragraph (4).

(ii) *Planned partial service line replacement.* Whenever a water system plans to partially replace a lead or GRR service line in coordination with planned infrastructure work that impacts service lines, the water system shall meet notification and mitigation requirements in accordance with the time frames specified in clauses (A)—(C). When a water system only has access to conduct full service line replacement if property owner consent is obtained, the water system shall make a reasonable effort to obtain property owner consent to replace the remaining portion of the service line in accordance with subsection (a)(5). The reasonable effort must be completed before the partial service line replacement.

(A) Provide written notification as specified in paragraph (1) to the property owner, or the owner's authorized agent, as well as consumer(s) served by the affected service line at least 45 days prior to the replacement.

(B) Meet the notification and mitigation requirements specified in paragraphs (2) and (3) before the affected service line is returned to service.

(C) Meet the follow up tap sampling requirements in accordance with the time frames specified in paragraph (4).

(iii) *Emergency partial service line replacement.* Any water system that creates a partial replacement of a lead or GRR service line due to an emergency repair shall comply with the following requirements.

(A) Provide notification and mitigation measures as specified in paragraphs (1)—(3) to the persons served by the affected service line before it is returned to service.

(B) Meet the follow up tap sampling requirements in accordance with the time frames specified in paragraph (4).

(C) Offer to the property owner, or the owner's authorized agent, to replace the partial service line created by the emergency repair within 45 days.

(f) *Reporting to demonstrate compliance to the Department.* To demonstrate compliance with subsections (a)—(e), a water system shall report to the Department the information identified in this subsection. This information must be provided in writing by January 30, 2029, and annually by January 30 thereafter, unless an alternate time frame is specified.

(1) Water systems conducting mandatory service line replacement in accordance with subsection (a) shall submit the following information to the Department:

(i) Information from the most recent updated inventory submitted under § 109.1109(a), in accordance with the table provided under § 109.1109(a)(5)(v):

(A) The total number of lead service lines in the inventory.

(B) The total number of GRR service lines in the inventory.

(C) The total number of lead status unknown service lines in the inventory.

(D) The total number of nonlead service lines in the inventory.

(E) The total number of lead connectors in the inventory.

(F) The total number of connectors of unknown material in the inventory.

(G) Where ownership of the service line is shared, the system shall report the information in clauses (A)—(F) counting each full service line only once.

(ii) The total number of full lead service line replacements and full GRR service line replacements that have been conducted in the preceding program year and the address associated with each replaced service line.

(iii) The total number of partial lead service line replacements and partial GRR service line replacements that have been conducted in the preceding program year and the address associated with each partially replaced service line.

(iv) The total number of lead connectors that have been replaced or removed in the preceding program year and the address associated with each replaced or removed lead connector.

(v) The number of service lines in the replacement pool updated at the beginning of the preceding program year in accordance with subsection (a)(7).

(vi) The total number of lead status unknown service lines determined to be nonlead in the preceding program year.

(vii) The address of each nonlead service line discovered in the preceding program year to be a lead or GRR service line and the method(s) originally used to categorize the material of the service line.

(viii) The applicable deadline for completion of service line replacement and the expected date of completion of service line replacement.

(ix) The total number of lead and GRR service lines not replaced because the system does not have access to conduct full service line replacement.

(2) The water system shall certify to the Department that it replaced any encountered lead connectors in accordance with subsection (b) or that it encountered no lead connectors during the program year.

(3) The water system shall certify that it completed all customer-initiated lead and GRR service line replacements in accordance with subsection (c).

(4) The water system shall certify to the Department that it conducted the notification and mitigation requirements for any partial and full service line replacements in accordance with subsection (e) or that it conducted no replacements of lead or GRR service lines during the program year.

(5) Any system that collects samples following a partial or full lead or GRR service line replacement required under subsection (e)(4) shall report the results to the Department within the first 10 days following the month in which the system receives the results, or as specified by

the Department. Systems shall also report any additional information as specified by the Department, and in a time and manner prescribed by the Department, to verify that all partial lead and GRR service line replacement activities have taken place. Follow-up lead samples collected due to monitoring after service line replacement in accordance with this section will not be included in the 90th percentile calculation.