

CHAPTER 109. SAFE DRINKING WATER

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Authority

The provisions of this Chapter 109 issued under the act of April 22, 1905 (P. L. 260, No. 182) (35 P. S. §§ 711—716); and sections 1918-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-18 and 510-20); and amended under the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.17); and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20), unless otherwise noted.

Source

The provisions of this Chapter 109 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804, unless otherwise noted.

Cross References

This chapter cited in 6 Pa. Code § 11.59 (relating to running water); 7 Pa. Code § 49.41 (relating to water supply); 7 Pa. Code § 82.7 (relating to water supply); 25 Pa. Code § 250.303 (relating to aquifer determination; current use and currently planned use of aquifer groundwater); 25 Pa. Code § 252.708 (relating to reporting and notification requirements); 25 Pa. Code § 269a.21 (relating to water supply); 25 Pa. Code § 965.1 (relating to definitions); and 28 Pa. Code § 17.122 (relating to minimum program activities).

Subchapter A. GENERAL PROVISIONS

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§ 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.

BAT—Best Available Technology—The best technology, treatment techniques or other means which the Administrator finds are available for achieving compliance with maximum contaminant levels. This chapter incorporates by reference the BAT specified in 40 CFR Parts 141 and 142 (relating to National primary drinking water regulations; and National primary drinking water regulations implementation).

Bag filter—A pressure-driven separation device that removes particulate matter larger than 1 micrometer using an engineered porous filtration media. It is typically constructed of a nonrigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to outside.

Bank filtration—A water treatment process that uses a well to recover surface water that has naturally infiltrated into groundwater through a riverbed or bank. Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well.

Bin—A category based on the level of *Cryptosporidium* present in source water. Four potential bins exist, 1—4. The higher the bin, the higher the concentration of source water *Cryptosporidium*.

Bottled water system—A public water system which provides water for bottling in sealed bottles or other sealed containers. The term includes, but is not limited to, the sources of water and treatment, storage, bottling, manufacturing and distribution facilities. The term does not include a public water system which provides only a source of water supply for a bottled water system and excludes an entity providing only transportation, distribution or sale of bottled water in sealed bottles or other sealed containers.

Bulk water hauling system—A public water system which provides water piped into a carrier vehicle and withdrawn by a similar means into the user's storage facility or vessel. The term includes, but is not limited to, the sources

of water, treatment, storage or distribution facilities. The term does not include a public water system which provides only a source of water supply for a bulk water hauling system.

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).

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

(i) The CPE is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements.

(ii) The CPE shall consist of at least the following components:

(A) Assessment of plant performance.

(B) Evaluation of major unit processes.

(C) Identification and prioritization of performance limiting factors.

(D) Assessment of the applicability of comprehensive technical assistance.

(E) Preparation of a CPE report.

CT—The product of residual disinfectant concentration (C) measured in mg/L in a representative sample of water prior to the first customer, and disinfectant contact time (T); that is, "C" × "T." If disinfectants are applied at more than one point prior to the first customer, the CT is determined for each disinfectant sequence prior to the first customer to determine the total percent inactivation achieved by disinfection prior to the first customer. In determining the total percent inactivation, the residual disinfectant concentration of each disinfection sequence and corresponding contact time before subsequent disinfection application points shall be determined.

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.

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.

Collection—The parts of a public water system occurring prior to treatment, including source, transmission facilities and pretreatment storage facilities.

Combined distribution system—The interconnected distribution system consisting of the distribution systems of wholesale systems and of the public water systems that obtain finished water from another public water system.

Community water system—A public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Compliance cycle—A 9-year calendar year cycle during which public water suppliers shall monitor for contaminants. The first compliance cycle begins January 1, 1993, and ends December 31, 2001.

Compliance period—A 3-year calendar year period within a compliance cycle. Each compliance cycle is made up of three 3-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993, through December 31, 1995.

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

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.

Contaminant—A physical, chemical, biological or radiological substance or matter in water.

Conventional filtration—The series of processes for the purpose of substantial particulate removal consisting of coagulation, flocculation, clarification, and granular media filtration. The clarification step must be a solid/liquid separation process where accumulated solids are removed during this separate component of the treatment system.

Corrosion inhibitor—A substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

Cross-connection—An arrangement allowing either a direct or indirect connection through which backflow, including backsiphonage, can occur between the drinking water in a public water system and a system containing a source or potential source of contamination, or allowing treated water to be removed from any public water system, used for any purpose or routed through any device or pipes outside the public water system, and returned to the public water system. The term does not include connections to devices totally within the control of one or more public water systems and connections between water mains.

DBP—Disinfection byproduct.

Diatomaceous earth filtration—A process for the purpose of substantial particulate removal in which a precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum), and while the water is filtered by

passing through the cake on the septum, additional filter media, known as body feed, is continuously added to the feed water, to maintain the permeability of the filter cake.

Direct filtration—A series of processes for the purpose of substantial particulate removal consisting of coagulation and filtration. The term normally includes flocculation after coagulation, but does not include sedimentation.

Disinfectant contact time—The time in minutes that it takes for water to move from the point of disinfectant application to the point where residual disinfectant concentration is measured. Contact time in pipelines is calculated based on plug flow by dividing the internal volume of the pipeline by the flow rate through that pipeline. Contact time within mixing basins and storage reservoirs is determined by tracer studies or an equivalent demonstration. Guidance for making these determinations appears in the “Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources” (U. S. EPA, Office of Drinking Water, Criteria and Standards Division).

Disinfection—A process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents, such as ultraviolet light.

Disinfection profile—The summary of daily *Giardia lamblia* inactivation through the treatment plant as determined through procedures and measurement methods established by this chapter.

Dual sample set—A set of two samples collected at the same time and same location, with one sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purposes of conducting an IDSE and determining compliance with the TTHM and HAA5 MCLs under Subchapter G (relating to system management responsibilities).

Enhanced coagulation—The addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

Enhanced softening—The improved removal of disinfection byproduct precursors by precipitative softening.

Entry point—A point acceptable to the Department at which finished water representative of each source enters the distribution system.

Environmental acts—The Clean Streams Law (35 P. S. §§ 691.1—691.1001), the Air Pollution Control Act (35 P. S. §§ 4001—4015), the Radiation Protection Act (35 P. S. §§ 7110.101—7110.703), the Surface Mining Conservation and Reclamation Act (52 P. S. §§ 1396.1—1396.31), the Noncoal Surface Mining Conservation and Reclamation Act (52 P. S. §§ 3301—3326), section 1917-A of The Administrative Code of 1929 (71 P. S. § 510-17), the Dam Safety and Encroachment Act (32 P. S. §§ 693.1—693.27), the Solid Waste Management Act (35 P. S. §§ 6018.101—6018.1003), the Plumbing System Lead Ban and Notification Act (35 P. S. §§ 723.1—723.17) and any

other State or Federal statutes relating to environmental protection or to the protection of the public health, safety and welfare.

Facility—A part of a public water system used for collection, treatment, storage or distribution of drinking water.

Federal act—The Safe Drinking Water Act (42 U.S.C.A. §§ 300f—300j-10).

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

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 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.

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.

Flowing stream—A course of running water flowing in a definite channel.

GAC10—A granular activated carbon filter bed with an empty bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 used as a BAT shall be 120 days.

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.

GUDI—Groundwater under the direct influence of surface water—

(i) Any water beneath the surface of the ground with the presence of insects or other macroorganisms, algae, organic debris or large diameter pathogens such as *Giardia lamblia* and *Cryptosporidium*, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity or pH which closely correlate to climatological or surface water conditions.

(ii) The term does not include finished water.

Groundwater—Water that is located within the saturated zone below the water table and is available to supply wells and springs.

HAA5—Haloacetic acids (five)—The sum of the concentrations in milligrams per liter of the haloacetic compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid and dibromoacetic acid), rounded to two significant figures after addition.

IBWA—The International Bottled Water Association, Alexandria, Virginia 22314.

IDSE—Initial Distribution System Evaluation.

IOC—Inorganic chemical.

Initial compliance period—The first full 3-year compliance period during which a public water supply is required to monitor for a contaminant.

Innovative technology—A method, process or equipment for the treatment of drinking water which is not designated as BAT under EPA regulations and the effectiveness of which has not been commercially demonstrated in the water supply industry.

LRAA—Locational running annual average—The average, computed quarterly, of quarterly arithmetic averages of all analytical results for samples taken at a particular monitoring location during the most recent 4 calendar quarters.

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.

Level 2 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. This assessment provides a more detailed examination of the system, including the system's monitoring and operational practices, than does a Level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices.

Liquid from dewatering processes—A stream containing liquids generated from a unit used to concentrate solids for disposal.

Log inactivation—A measure of the amount of viable microorganisms that are rendered nonviable during disinfection processes and is defined as:

$$\text{Log inactivation} = \log \left(\frac{N_o}{N_D} \right)$$

Where,

N_o = Initial concentration of viable microorganisms

N_D = Concentration of viable microorganisms after disinfection

Log = Logarithm to base 10

Log inactivation is related to percent inactivation, defined as:

$$\text{Percent inactivation} = \left(1 - \frac{N_D}{N_o} \right) * 100$$

Common log-inactivation values and corresponding percent inactivation values include:

<i>Log Inactivation</i>	<i>Percent Inactivation</i>
0.5-log	68.4%
1.0-log	90.0%
1.5-log	96.8%
2.0-log	99.0%
2.5-log	99.7%
3.0-log	99.9%
4.0-log	99.99%

Log removal—A measure of the physical removal of a targeted contaminant or disease-causing microorganism (or its surrogate) during water treatment processes and is defined as:

$$\text{Log removal} = \log \left(\frac{N_o}{N_R} \right)$$

Where,

N_o = Initial concentration of targeted contaminant or disease-causing microorganism (or its surrogate)

N_R = Concentration of targeted contaminant or disease-causing microorganism (or its surrogate) after removal

Log = Logarithm to base 10

Log removal is related to percent removal, defined as:

$$\text{Percent removal} = \left(1 - \frac{N_R}{N_o}\right) * 100$$

Common log removal values and corresponding percent removal values include:

<i>Log Removal</i>	<i>Percent Removal</i>
0.5-log	68.4%
1.0-log	90.0%
1.5-log	96.8%
2.0-log	99.0%
2.5-log	99.7%
3.0-log	99.9%
4.0-log	99.99%

Log treatment—A measure of the removal or inactivation, or Department-approved combination of removal and inactivation, of a targeted contaminant or disease-causing microorganism (or its surrogate) during water treatment processes and is defined as:

$$\text{Log treatment} = \text{Log removal} + \text{Log inactivation}$$

Or,

$$\text{Log treatment} = \log \left(\frac{N_o}{N_T} \right)$$

Where,

N_o = Initial concentration of a targeted contaminant or disease-causing microorganism (or its surrogate)

N_T = Concentration of a targeted contaminant or disease-causing microorganism (or its surrogate) after treatment

Log = Logarithm to base 10

Log treatment is related to percent treatment, defined as:

$$\text{Percent treatment} = \left(1 - \frac{N_T}{N_o}\right) * 100$$

Common log treatment values and corresponding percent treatment values include:

<i>Log Treatment</i>	<i>Percent Treatment</i>
0.5-log	68.4%
1.0-log	90.0%
1.5-log	96.8%
2.0-log	99.0%
2.5-log	99.7%
3.0-log	99.9%
4.0-log	99.99%

MCL—Maximum Contaminant Level—The maximum permissible level of a contaminant in water which is delivered to a user of a public water system, and includes the primary and secondary MCLs established under the Federal act, and MCLs adopted under the act.

MRDL—Maximum Residual Disinfectant Level—The maximum permissible level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. The consumer's tap means the entry point for bottled water and vended water systems, retail water facilities and bulk water hauling systems.

Membrane filtration—

(i) A pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test.

(ii) The term includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration and reverse osmosis.

Method detection limit—The amount of a substance which the EPA has determined to be the minimum concentration which can be measured and be reported with 99% confidence that the true value is greater than zero.

Microorganism—Any of a number of unicellular, multicellular or colonial bacteria, fungi, protozoa, archaea or viruses whose individuals are too small to be seen by the human eye without magnification.

NAMA—The National Automatic Merchandising Association of Chicago, Illinois.

NSF—NSF International, Ann Arbor, Michigan 48105.

NTU—Nephelometric Turbidity Unit.

National Primary Drinking Water Regulations—Primary drinking water regulations and implementation regulations promulgated by the Administrator under the Federal act at 40 CFR Parts 141 and 142 (relating to national primary drinking water regulations; and national primary drinking water regulations implementation). The term includes interim, revised and final regulations.

National Secondary Drinking Water Regulations—Secondary drinking water regulations promulgated by the Administrator under the Federal act in 40 CFR 143.1—143.4.

New source—A source of water supply that is not covered by a valid permit issued under the act of April 22, 1905 (P. L. 260, No. 182) (35 P. S. §§ 711—716) (Repealed) or under this chapter as a regular source of supply for the public water system.

Noncommunity water system—A public water system which is not a community water system.

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

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.

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.

Public water supplier—A person who owns or operates a public water system.

Public water system—A system which provides water to the public for human consumption which has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. The term includes collection, treatment, storage and distribution facilities under control of the operator of the system and used in connection with the system. The term includes collection or pretreatment storage facilities not under control of the operator which are used in connection with the system. The term also includes a system which provides water for bottling or bulk hauling for human consumption. Water for human consumption includes water that is used for drinking, bathing and showering, cooking, dishwashing or maintaining oral hygiene.

RAA—Running annual average—The average, computed quarterly, of quarterly arithmetic averages of all analytical results for samples taken during the most recent 4 calendar quarters.

Recycle—The act of returning recycle streams to a conventional or direct filtration plant's treatment process.

Recycle flows—Any water, solid or semi-solid generated by a conventional or direct filtration plant's treatment process and residual treatment processes that is returned to the plant's treatment process.

Reliably and consistently below the MCL—

(i) For VOCs, SOCs and IOCs (with the exception of nitrate and nitrite), this means that each sample result is less than 80% of the MCL.

(ii) For nitrate and nitrite, this means that each sample result is less than 50% of the MCL.

Repeat compliance period—A subsequent compliance period after the initial compliance period.

Retail water facility—A public water system which provides water for bottling without the use of a water vending machine by dispensing unit servings of water in containers whether or not the containers are provided by the customers.

SOC—Synthetic Organic Chemical.

SUVA—*Specific ultraviolet absorption at 254 nanometers (nm)*—An indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV_{254}) (in m^{-1}) by its concentration of dissolved organic carbon (DOC) (in mg/L).

Sanitary defect—A defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place.

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.

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.

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.

Slow sand filtration—A process for the purpose of substantial particulate removal by physical and biological mechanisms during the passage of raw water through a bed of sand at low velocity—generally less than .4 meters per hour.

Source—The place from which water for a public water system originates or is derived, including, but not limited to, a well, spring, stream, reservoir, pond, lake or interconnection.

Spent filter backwash water—A stream containing particles dislodged from filter media when the filter is backwashed to clean the filter.

Substantial modification—A change in a public water system that may affect the quantity or quality of water served to the public or which may be prejudicial to the public health or safety and includes the addition of new sources; the expansion of existing facilities; changes in treatment processes; addition, removal, renovation or substitution of equipment or facilities; and interconnections.

Surface water—Water open to the atmosphere or subject to surface runoff. The term does not include finished water.

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 non-residential 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.

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.

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.

Too numerous to count—Two hundred or more total bacterial colonies on a 47-mm diameter membrane filter.

Transient noncommunity water system—A public water system which is not a community, nontransient noncommunity, bottled or vended water system, nor a retail water facility or a bulk water hauling system.

Transmission—The movement of water from the source to a point of storage, treatment or distribution or from the point of treatment to the distribution system.

Treatment technique—A requirement which specifies a specific treatment method known to cause a reduction in the level of a contaminant which cannot practically be regulated by establishing an MCL. The term includes treatment technique requirements established under the Federal act, and treatment technique requirements adopted under the act.

2-stage lime softening—A process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

Type of product—A particular kind of water for bottling characterized by its source or treatment process. Examples of the water include distilled water, mineral water, spring water and well water.

VOC—Volatile synthetic organic chemical.

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

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.

Water for bottling—Artificial or natural mineral, spring or other water for bottling as drinking water.

Water vending machine—A self-contained, self-service device which, upon insertion of a coin, paper currency, token, card, key or other similar means or through manual operation, dispenses unit servings of water, either in bulk or in packages, without the necessity of replenishing the device between each vending operation.

Wellhead protection area—The surface and subsurface area surrounding a water well, well field, spring or infiltration gallery supplying a public water system, through which contaminants are reasonably likely to move toward and reach the water source. A wellhead protection area shall consist of the following zones:

- (i) *Zone I*. The protective zone immediately surrounding a well, spring or infiltration gallery which shall be a 100-to-400-foot radius depending on site-specific source and aquifer characteristics.
- (ii) *Zone II*. The zone encompassing the portion of the aquifer through which water is diverted to a well or flows to a spring or infiltration gallery. Zone II shall be a 1/2 mile radius around the source unless a more detailed delineation is approved.
- (iii) *Zone III*. The zone beyond Zone II that contributes surface water and groundwater to Zones I and II.

Wellhead protection program—A comprehensive program designed to protect a well, spring or infiltration gallery used by a public water system from contamination.

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.

Authority

The provisions of this § 109.1 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

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Notes of Decisions

A proposed municipal reservoir is a new water source even though the water will come from the same watershed and same body of water as the present water supply. *Millheim Borough v. Commonwealth*, 74 Pa. D. & C.2d 137 (1975).

Cross References

This section cited in 25 Pa. Code § 78a.1 (relating to definitions); 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice); 25 Pa. Code § 273.115 (relating to geology and groundwater description); 25 Pa. Code § 277.115 (relating to geology and groundwater description); 25 Pa. Code § 288.122 (relating to geology and groundwater description); 25 Pa. Code § 289.122 (relating to geology and groundwater description); and 25 Pa. Code § 302.101 (relating to definitions).

§ 109.2. Purpose.

The purpose of this chapter is to protect the public health and safety by assuring that public water systems provide a safe and adequate supply of water for human consumption by establishing drinking water quality standards, permit requirements, design and construction standards, system management responsibilities and requirements for public notification.

Source

The provisions of this § 109.2 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; amended December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa. B. 2621. Immediately preceding text appears at serial page (139067).

§ 109.3. Scope.

This chapter applies to each public water system, unless the public water system meets all of the following conditions:

- (1) Consists only of distribution and storage facilities, and does not have collection and treatment facilities.
- (2) Obtains all of its water from, but is not owned or operated by, a public water system to which this chapter applies.
- (3) Does not sell water to any person.
- (4) Does not provide water for potable purposes to carriers which convey passengers in interstate commerce.

Source

The provisions of this § 109.3 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; amended December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial page (48003).

§ 109.4. General requirements.

Public water suppliers shall:

- (1) Protect the water sources under the supplier's control.
- (2) Provide treatment adequate to assure that the public health is protected.
- (3) Provide and effectively operate and maintain public water system facilities.
- (4) Take whatever investigative or corrective action is necessary to assure that safe and potable water is continuously supplied to the users.

Source

The provisions of this § 109.4 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial pages (139067) to (139068).

Cross References

This section cited in 25 Pa. Code § 109.705 (relating to system evaluations and assessments).

§ 109.5. Organization of chapter.

- (a) This subchapter and Subchapter H (relating to laboratory certification) apply to all public water systems.
- (b) Subchapters B—G and I apply to public water systems, except bottled water and vended water systems, retail water facilities and bulk water hauling systems, unless provisions in those Subchapters are specifically referenced in Subchapter J (relating to bottled water and vended water systems, retail water facilities and bulk water hauling systems).
- (c) Subchapter J applies exclusively to bottled water and vended water systems, retail water facilities and bulk water hauling systems.
- (d) Subchapter K (relating to lead and copper) applies to community and nontransient noncommunity water systems.
- (e) Subchapter L (relating to the long-term 2 enhanced surface water treatment rule) applies to all public water systems using surface water or GUDI sources.
- (f) Subchapter M (relating to additional requirements for groundwater sources) applies to all public water systems that use groundwater, excluding those systems that combine all of their groundwater with surface water or with ground-

water under the direct influence of surface water prior to treatment under § 109.202(c)(1) (relating to State MCLs, MRDLs and treatment technique requirements).

Source

The provisions of this § 109.5 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (290473) to (290474).

§ 109.6. Inspection authorization.

(a) At any reasonable time, the Department and its agents and employes will:

(1) Have access to and require the production of any feature of a public water system, monitoring system and books, papers, records and data pertinent to any matter under investigation or required to be kept under the act or this chapter.

(2) Enter and examine a property, facility, operation or activity under the control of a public water system and conduct tests and sampling, including the examination and copying of books, papers, records and data, for the purpose of making an investigation or inspection as may be necessary to ascertain the compliance or noncompliance by a person with the environmental acts, the act or this chapter.

(b) The Department and its agents and employes may conduct inspections of public water systems at least once prior to construction or modification, at least once during construction or modification, at least once prior to operation and at least once per year thereafter.

(c) The Department and its agents and employes may conduct additional inspections, including follow-up inspections, of public water systems and activities related to public health, safety, welfare or the environment, to determine compliance with the act, the environmental acts, this title, the terms or conditions of a permit or the requirements of an order.

(d) The Department and its agents and employes may also conduct inspections of public water systems and related activities whenever a person presents information to the Department which gives the Department reason to believe that a condition exists which may threaten the public health, safety or welfare or the environment, or a person:

(1) Is in violation of a requirement of the act, this chapter, an order or a permit issued thereunder.

(2) May have violated an environmental act, or a condition of a permit issued under a regulation promulgated under an environmental act.

(e) This section is subject to the availability of personnel and financial resources. This section does not create a duty by the Department to conduct, or a right in a person to expect, a minimum number of inspections per year, inspections for a particular reason or during a certain period or set a maximum number of inspections.

Source

The provisions of this § 109.6 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621.

§§ 109.11—109.16. [Reserved].**Source**

The provisions of these §§ 109.11—109.16 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial pages (48004) and (49601).

§ 109.21. [Reserved].**Source**

The provisions of this § 109.21 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial page (49601).

§ 109.22. [Reserved].**Source**

The provisions of this § 109.22 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial page (49601).

§§ 109.31—109.36. [Reserved].**Source**

The provisions of these §§ 109.31—109.36 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial pages (49602) and (28007).

§§ 109.41—109.44. [Reserved].**Source**

The provisions of these §§ 109.41—109.44 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial pages (48007) to (48008).

§ 109.51. [Reserved].**Source**

The provisions of this § 109.51 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; corrected May 17, 1974, effective September 3, 1971, 4 Pa.B. 977; corrected July 6, 1979, effective November 2, 1974, 9 Pa.B. 2250; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial pages (48008) to (48009).

§§ 109.52—109.56. [Reserved].**Source**

The provisions of these §§ 109.52—109.56 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial pages (48009), (42497) and (4609).

§ 109.61. [Reserved].**Source**

The provisions of this § 109.61 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial page (4609).

§ 109.62. [Reserved].**Source**

The provisions of this § 109.62 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial page (4609).

§§ 109.71—109.76. [Reserved].**Source**

The provisions of these §§ 109.71—109.76 adopted September 2, 1971, effective September 3, 1971, 1 Pa.B. 1804; reserved December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479. Immediately preceding text appears at serial pages (4610) and (84495).

**Subchapter B. MCLs, MRDLs OR TREATMENT
TECHNIQUE REQUIREMENTS**

Sec.

- 109.201. Authority.
 109.202. State MCLs, MRDLs and treatment technique requirements.
 109.203. Unregulated contaminants.
 109.204. Disinfection profiling and benchmarking.

Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.505 (relating to requirements for noncommunity water systems); 25 Pa. Code § 109.507 (relating to permits for innovative technology); 25 Pa. Code § 109.602 (relating to acceptable design); 25 Pa. Code § 109.612 (relating to POE devices); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); and 25 Pa. Code § 109.1005 (relating to permit requirements).

§ 109.201. Authority.

Under the act, the EQB will adopt MCLs and treatment technique requirements no less stringent than those promulgated under the Federal act for contaminants regulated under the Federal regulations. The Board may adopt MCLs and treatment technique requirements more stringent than those promulgated under the Federal act, and may adopt MCLs or treatment technique requirements for contaminants for which no MCL or treatment technique requirement has been promulgated under the Federal act.

Source

The provisions of this § 109.201 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

§ 109.202. State MCLs, MRDLs and treatment technique requirements.**(a) Primary MCLs, MRDLs and treatment technique requirements.**

(1) A public water system shall supply drinking water that complies with the primary MCLs, MRDLs and treatment technique requirements adopted by the EQB under the act.

(2) This subchapter incorporates by reference the primary MCLs, MRDLs and treatment technique requirements in the National Primary Drinking Water Regulations 40 CFR Part 141 (relating to National Primary Drinking Water

Regulations) as State MCLs, MRDLs and treatment technique requirements under authority of section 4 of the act (35 P.S. § 721.4), unless other MCLs, MRDLs and treatment technique requirements are established by regulations of the Department. The primary MCLs, MRDLs and treatment technique requirements which are incorporated by reference are effective on the date established by the Federal regulations.

(3) A public water system that is installing granular activated carbon or membrane technology to comply with the MCL for TTHMs, HAA5, chlorite (where applicable) or bromate (where applicable) may apply to the Department for an extension of up to 24 months past the applicable compliance date specified in the Federal regulations, but not beyond December 31, 2003. In granting the extension, the Department will set a schedule for compliance and may specify any interim measures that the Department deems necessary. Failure to meet the schedule or interim treatment requirements constitutes a violation of National Primary Drinking Water Regulations.

(b) *Secondary MCLs.*

(1) A public water system shall supply drinking water that complies with the secondary MCLs adopted by the EQB under the act, except for the MCL for pH which represents a reasonable goal for drinking water quality.

(2) This subchapter incorporates by reference the secondary MCLs established by the EPA in the National Secondary Drinking Water Regulations, 40 CFR 143.3 (relating to secondary maximum contaminant levels), as of January 30, 1991, as State MCLs, under the authority of section 4 of the act, unless other MCLs are established by regulations of the Department. The secondary MCL for copper is not incorporated by reference.

(3) A secondary MCL for aluminum of 0.2 mg/L is adopted as a State MCL.

(c) *Treatment technique requirements for pathogenic bacteria, viruses and protozoan cysts.* A public water system shall provide adequate treatment to reliably protect users from the adverse health effects of microbiological contaminants, including pathogenic bacteria, viruses and protozoan cysts. The number and type of treatment barriers and the efficacy of treatment provided shall be commensurate with the type, degree and likelihood of contamination in the source water.

(1) A public water supplier shall provide, as a minimum, continuous filtration and disinfection for surface water and GUDI sources. The treatment technique must provide at least 99.9% removal and inactivation of *Giardia lamblia* cysts, and at least 99.99% removal and inactivation of enteric viruses. Beginning January 1, 2002, public water suppliers serving 10,000 or more people shall provide at least 99% removal of *Cryptosporidium* oocysts. Beginning January 1, 2005, public water suppliers serving fewer than 10,000 people shall provide at least 99% removal of *Cryptosporidium* oocysts. The Department, depending on source water quality conditions, may require additional treatment as necessary to meet the requirements of this chapter and to protect the public health.

(i) The filtration process shall meet the following performance requirements:

(A) *Conventional or direct filtration.*

(I) The filtered water turbidity shall be less than or equal to .5 NTU in 95% of the measurements taken each month under § 109.301(1) (relating to general monitoring requirements).

(II) The filtered water turbidity shall be less than or equal to 2.0 NTU at all times, measured under § 109.301(1).

(III) Beginning January 1, 2002, for public water systems serving 10,000 or more persons, the filtered water turbidity shall meet the following criteria:

(-a-) Be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month under § 109.301(1).

(-b-) Be less than or equal to 1 NTU at all times, measured under § 109.301(1).

(IV) Beginning January 1, 2005, for public water systems serving fewer than 10,000 persons, the filtered water turbidity shall meet the following criteria:

(-a-) Be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month under § 109.301(1).

(-b-) Be less than or equal to 1 NTU at all times, measured under § 109.301(1).

(B) *Slow sand or diatomaceous earth filtration.*

(I) The filtered water turbidity shall be less than or equal to 1.0 NTU in 95% of the measurements taken each month under § 109.301(1).

(II) The filtered water turbidity shall be less than or equal to 2.0 NTU at all times, measured under § 109.301(1).

(C) *Other filtration technologies.* The same performance criteria as those given for conventional filtration and direct filtration in clause (A) shall be achieved unless the Department specifies more stringent performance criteria based upon onsite studies, including pilot plant studies, where appropriate.

(ii) The combined total effect of disinfection processes utilized in a filtration plant shall:

(A) Achieve at least 1.0-log inactivation of *Giardia* cysts and 3.0-log inactivation of viruses as demonstrated by measurements taken under § 109.301(1). Failure to maintain the minimum log inactivation for more than 4 hours of operation constitutes a breakdown in treatment.

(B) Provide a minimum residual disinfectant concentration of 0.20 mg/L at the entry point as demonstrated by measurements taken under § 109.301(1). Failure to maintain the minimum entry point residual disinfectant concentration for more than 4 hours of operation is a treatment technique violation.

(iii) For an unfiltered surface water source permitted for use prior to March 25, 1989, the public water supplier shall:

(A) Maintain a minimum residual disinfectant concentration in the water delivered to the distribution system prior to the first customer of 2.5 mg/L expressed as free chlorine or its equivalent as approved by the Department. The residual disinfectant concentration shall be demonstrated by measurements taken under § 109.301(2).

(I) For a system using disinfectants other than free chlorine, the water supplier shall maintain:

(-a-) A minimum concentration that provides, in terms of CTs achieved, a level of protection equivalent to that provided by 2.5 mg/L free chlorine, as determined by the available contact time between the point of application and the first customer, under peak flow conditions.

(-b-) At least .2 mg/L of disinfectant in the water delivered to the distribution system prior to the first customer.

(II) For a system with extended contact times, generally 60 minutes or more, between the point of application and the first customer, the Department may allow the water supplier to maintain a disinfectant residual concentration less than 2.5 mg/L free chlorine or its equivalent if the CTs established by the EPA are achieved.

(B) Provide continuous filtration and disinfection in accordance with this paragraph according to the following schedule:

(I) By December 31, 1991, for a public water system that, prior to March 25, 1989, had a waterborne disease outbreak or Giardia contamination in its surface water source.

(II) Within 48 months after the discovery of one of the following conditions, or by December 31, 1995, whichever is earlier, for a public water system that experiences the condition after March 25, 1989:

(-a-) A waterborne disease outbreak.

(-b-) Giardia contamination in its surface water source.

(-c-) A violation of the microbiological MCL, the turbidity MCL or the monitoring or reporting requirements for the microbiological MCL.

(-d-) A violation of the source microbiological or turbidity monitoring requirements under § 109.301(2)(i)(A) and (B) or the related reporting requirements.

(-e-) The source water fecal coliform concentration exceeds 20/100 ml or the total coliform concentration exceeds 100/100 ml in a source water sample collected under § 109.301(2).

(-f-) The source water turbidity level exceeds 5.0 NTU in a sample collected under § 109.301(2).

(-g-) The system fails to maintain a continuous residual disinfectant concentration as required under this subparagraph.

(III) By December 31, 1995, for other public water systems not covered by subclause (I) or (II).

(iv) For an unfiltered surface water source which is subject to subparagraph (iii)(B)(II) and (III), the public water supplier shall:

(A) Submit to the Department for approval a feasibility study which specifies the means by which the supplier shall, by the applicable deadline established in subparagraph (iii)(B), meet the requirements of this paragraph. The study shall identify the alternative which best assures the long-term viability of the public water system to meet drinking water standards. The study shall propose a schedule for completion of work, including the design, financing, construction and operation of one of the following alternatives:

- (I) Permanent filtration treatment facilities that meet the requirements of this chapter.
- (II) Abandonment of the unfiltered surface water source and one of the following:
 - (-a-) Permanent interconnection with another water supply which meets the requirements of this chapter.
 - (-b-) Permanent water treatment facilities, utilizing groundwater as the source of supply, which meet the requirements of this chapter.
 - (-c-) Provision for adequate supply from existing sources which meets the requirements of this chapter.
- (B) Submit the feasibility study according to the following schedule:
 - (I) By March 31, 1992, for a supplier which prior to August 31, 1991, experienced a triggering event as specified in subparagraph (iii)(B)(II).
 - (II) By June 30, 1992, for a supplier which after August 31, 1991, but before January 1, 1992, experienced a triggering event as specified in subparagraph (iii)(B)(II).
 - (III) By August 31, 1992, for other suppliers.
- (C) Submit a full and complete permit application for the means identified in the approved feasibility study by which the supplier shall meet the requirements of this paragraph, according to the following schedule:
 - (I) By the date set in the approved feasibility study for a supplier which, prior to January 1, 1992, experienced a triggering event as specified in subparagraph (iii)(B)(II).
 - (II) By June 30, 1993, for a supplier subject to the requirements of subparagraph (iii)(B)(III), except that a public water supplier serving fewer than 3,300 people may submit its permit application by December 31, 1993.
- (D) Initiate construction of the means identified in the approved feasibility study by which the supplier shall meet the requirements of this paragraph, according to the following schedule:
 - (I) By the date set in the approved feasibility study for a supplier which, prior to January 1, 1992, experienced a triggering event as specified in subparagraph (iii)(B)(II).
 - (II) By June 30, 1994, for a supplier subject to the requirements of subparagraph (iii)(B)(III), except that a public water supplier serving fewer than 3,300 people may initiate construction by December 31, 1994.
- (E) Complete construction and commence operation of the alternative identified in the approved feasibility study by the dates specified in subparagraph (iii)(B).
- (v) The requirements of subparagraph (iv) do not modify, repeal, suspend, supersede or otherwise change the terms of a compliance schedule or deadline, established by an existing compliance order, consent order and agreement, consent adjudication, court order or consent decree. For purposes of this paragraph, the term "existing" means a compliance order, consent order and agreement, consent adjudication, court order or consent decree which was issued or dated before December 14, 1991.

(vi) For a source including springs, infiltration galleries, cribs or wells permitted for use by the Department prior to May 16, 1992, and determined by the Department to be a GUDI source, the public water supplier shall:

(A) Maintain a minimum residual disinfectant concentration in the water delivered to the distribution system prior to the first customer in accordance with subparagraph (iii)(A).

(B) Provide continuous filtration and disinfection in accordance with this paragraph within 48 months after the Department determines the source of supply is a GUDI source.

(C) Submit to the Department for approval a feasibility study within 1 year after the Department determines the source of supply is a GUDI source. The feasibility study shall specify the means by which the supplier shall, within the deadline established in clause (B), meet the requirements of this paragraph and shall otherwise comply with subparagraph (iv)(A).

(2) In addition to meeting the requirements of paragraph (1), a public water supplier using surface water or GUDI sources shall also comply with the requirements of, and on the schedules in, Subchapter L (relating to long-term 2 enhanced surface water treatment rule).

(3) A community public water system shall provide continuous disinfection and comply with Subchapter M (relating to additional requirements for groundwater sources) for groundwater sources.

(4) Public water systems shall conduct assessments in accordance with § 109.705(b) (relating to system evaluations and assessments) after meeting any of the triggers under subparagraph (i) or (ii). Failure to conduct an assessment or complete a corrective action in accordance with § 109.705(b) is a treatment technique violation requiring 1-hour reporting in accordance with § 109.701(a)(3) (relating to reporting and recordkeeping) and public notification in accordance with § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice).

(i) A Level 1 assessment is triggered if any of the following conditions occur:

(A) For systems taking 40 samples or more per month under § 109.301(3), the system exceeds 5.0% total coliform-positive samples for the month.

(B) For systems taking fewer than 40 samples per month under § 109.301(3), the system has two or more total coliform-positive samples in the same month.

(C) The system fails to take every required check sample under § 109.301(3) after any single total coliform-positive sample.

(ii) A Level 2 assessment is triggered if any of the following conditions occur:

(A) A system fails to meet the *E. coli* MCL as specified under subsection (a)(2).

(B) A system triggers another Level 1 assessment, as defined in subparagraph (i), within a rolling 12-month period, unless the Department has determined a likely reason that the samples that caused the first Level 1 assessment were total coliform-positive and has established that the system has corrected the problem.

(5) Failure by a seasonal water system to complete the approved start-up procedure prior to serving water to the public as required under § 109.715 (relating to seasonal systems) is a treatment technique violation requiring 1-hour reporting in accordance with § 109.701(a)(3) and public notification in accordance with § 109.409.

(6) Community water systems using a chemical disinfectant or that deliver water that has been treated with a chemical disinfectant shall comply with the minimum residual disinfectant concentration specified in § 109.710 (relating to disinfectant residual in the distribution system).

(7) Nontransient noncommunity water systems that have installed chemical disinfection and transient noncommunity water systems that have installed chemical disinfection in accordance with paragraph (1) or § 109.1302(b) (relating to treatment technique requirements) shall comply with the minimum residual disinfectant concentration specified in § 109.710.

(d) *Fluoride.* A public water system shall comply with the primary MCL for fluoride of 2 mg/L, except that a noncommunity water system implementing a fluoridation program approved by the Department of Health and using fluoridation facilities approved by the Department under § 109.505 (relating to requirements for noncommunity water systems) may exceed the MCL for fluoride but may not exceed the fluoride level approved by the Department of Health. The secondary MCL for fluoride of 2 mg/L established by the EPA under 40 CFR 143.3 is not incorporated into this chapter.

(e) *Treatment technique requirements for acrylamide and epichlorohydrin.* Systems which use acrylamide or epichlorohydrin in the water treatment process shall certify in accordance with § 109.701(d)(7) that the following specified levels have not been exceeded:

(1) Acrylamide = 0.05% dosed at 1 ppm (or equivalent).

(2) Epichlorohydrin = 0.01% dosed at 20 ppm (or equivalent).

(f) *MRDLs.*

(1) A public water system shall supply drinking water that complies with the MRDLs adopted by the EQB under the act.

(2) This subchapter incorporates by reference the primary MRDLs in the National Primary Drinking Water Regulations, in 40 CFR Part 141, Subpart G (relating to National Primary Drinking Water Regulations: maximum contaminant levels and maximum residual disinfectant levels) as State MRDLs, under the authority of section 4 of the act, unless other MRDLs are established by regulations of the Department. The primary MRDLs which are incorporated by reference are effective on the date established by the Federal regulations.

(g) *Treatment technique requirements for disinfection byproduct precursors.* Community water systems and nontransient noncommunity water systems that use either surface water or GUDI sources and that use conventional filtration treatment shall provide adequate treatment to reliably control disinfection byproduct precursors in the source water. Enhanced coagulation and enhanced softening are deemed by the Department to be treatment techniques for the control of disinfection byproduct precursors in drinking water treatment and distribution systems. This subchapter incorporates by reference the treatment technique in 40 CFR 141.135 (relating to treatment technique for control of disinfection byproduct (DBP) precursors). Coagulants approved by the Department are deemed to be

acceptable for the purpose of this treatment technique. This treatment technique is effective on the date established by the Federal regulations.

(h) *Recycling of waste stream.*

(1) Except as provided in paragraph (2), a public water system that uses surface water source or GUDI and provides conventional filtration or direct filtration treatment and recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall return these recycled flows through the processes of the system's existing conventional or direct filtration system as defined in § 109.1 (relating to definitions) or at an alternate location approved by the Department by June 8, 2004.

(2) If capital improvements are required to modify the recycle location to meet the requirement of paragraph (1), the capital improvements shall be completed by June 8, 2006.

(3) Capital improvement means a nonrecurring, significant modification for nonroutine, long-term physical improvements to any part of a public water system, including, but not limited to, construction activities, renovation activities, demolition activities, source development, treatment process modifications, storage modifications, distribution system modifications, waste-processing modifications and all associated design costs.

Authority

The provisions of this § 109.202 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.202 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended March 24, 1989, effective March 25, 1989, 19 Pa.B. 1289; amended June 16, 1989, effective June 17, 1989, 19 Pa.B. 2543; amended December 13, 1991, effective December 14, 1991, 21 Pa.B. 5718; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895 and 3938; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended April 2, 2004, effective April 3, 2004, 34 Pa.B. 1758; amended June 18, 2004, effective June 19, 2004, 34 Pa.B. 3130; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383393) to (383400).

Cross References

This section cited in 25 Pa. Code § 78.62 (relating to disposal of residual waste—pits); 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.203 (relating to unregulated contaminants); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.303 (relating to sampling requirements); 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.506 (relating to emergency permits); 25 Pa. Code § 109.605 (relating to minimum treatment design standards); 25 Pa. Code § 109.611 (relating to disinfection); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.705 (relating to system evaluations and assessments); 25 Pa. Code § 109.710 (relating to disinfectant residual in the distribution system); 25 Pa. Code § 109.810 (relating to reporting and notification requirements); 25 Pa. Code § 109.901 (relating to requirements for a variance); 25 Pa. Code § 109.903 (relating to requirements for an exemption); and 25 Pa. Code § 109.1002 (relating to MCLs, MRDLs or treatment techniques); 25 Pa. Code § 109.1003 (relating to monitoring requirements); 25 Pa. Code § 109.1302 (relating to treatment technique requirements); and 25 Pa. Code § 250.304 (relating to MSCs for groundwater).

§ 109.203. Unregulated contaminants.

The Department may by order establish an MCL or treatment technique requirement on a case-by-case basis for a public water system in which an unregulated contaminant creates a health risk to the users of the public water system. An unregulated contaminant is one for which no MCL or treatment technique requirement has been established under § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements).

Source

The provisions of this § 109.203 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895. Immediately preceding text appears at serial page (207202).

Cross References

This section cited in 25 Pa. Code § 109.1002 (relating to MCLs, MRDLs or treatment techniques).

§ 109.204. Disinfection profiling and benchmarking.

(a) The disinfection profiling and benchmarking requirements, established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.172, 141.530—141.536, 141.540—141.544, 141.570(c) and (d) and 141.708—141.709 are incorporated by reference except as otherwise established by this chapter.

(b) Public water suppliers that did not conduct TTHM and HAA5 monitoring under this section because they served fewer than 10,000 persons when the monitoring was required, but serve 10,000 or more persons before January 1, 2005, shall comply with this section. These suppliers shall also establish a disinfection benchmark and consult with the Department for approval. A supplier that decides to make a significant change to its disinfection practice, as described in this section, shall consult with the Department before making such a change.

(c) The public water supplier shall conduct disinfection profiling in accordance with the procedures and methods in the most current edition of the *Disinfection Profiling and Benchmarking Guidance Manual* published by the EPA. The results of the disinfection profiling and the benchmark, including raw data and analysis, shall be retained indefinitely on the water system premises or at a convenient location near the premises. Public water suppliers serving 10,000 or more persons and required to conduct disinfection profiling shall submit the disinfection profiling data and the benchmark data to the Department by June 1, 2001, in a format acceptable to the Department. Public water suppliers serving 500 to 9,999 persons shall submit the disinfection profiling data and the benchmark to the Department by October 1, 2004. Public water suppliers serving less than 500 persons shall submit the disinfection profiling data and the benchmark to the Department by April 1, 2005, in a format acceptable to the Department.

Source

The provisions of this § 109.204 adopted July 20, 2001, effective July 21, 2001, 31 Pa.B. 3938; amended June 18, 2004, effective June 19, 2004, 34 Pa.B. 3130; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (344196) and (345283).

Cross References

This section cited in 25 Pa. Code § 109.1002 (relating to MCLs, MRDLs or treatment techniques).

Subchapter C. MONITORING REQUIREMENTS

Sec.

- 109.301. General monitoring requirements.
- 109.302. Special monitoring requirements.
- 109.303. Sampling requirements.
- 109.304. Analytical requirements.
- 109.305. Fees.

Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.801 (relating to certification requirement); 25 Pa. Code § 109.902 (relating to variance request); and 25 Pa. Code § 109.904 (relating to exemption request).

§ 109.301. General monitoring requirements.

Public water suppliers shall monitor for compliance with MCLs, MRDLs and treatment technique requirements in accordance with the requirements established by the EPA under the National Primary Drinking Water Regulations, 40 CFR Part 141 (relating to National Primary Drinking Water Regulations), except as otherwise established by this chapter unless increased monitoring is required by the Department under § 109.302 (relating to special monitoring requirements). Alternative monitoring requirements may be established by the Department and may be implemented in lieu of monitoring requirements for a particular National Primary Drinking Water Regulation if the alternative monitoring requirements are in conformance with the Federal act and regulations. The monitoring requirements shall be applied as follows:

- (1) *Performance monitoring for filtration and disinfection.* A public water supplier providing filtration and disinfection of surface water or GUDI sources shall conduct the following performance monitoring requirements, unless increased monitoring is required by the Department under § 109.302.
 - (i) Except as provided under subparagraphs (ii) and (iii) a public water supplier:
 - (A) Shall determine and record the turbidity level of representative samples of the system's filtered water as follows:
 - (I) For systems that operate continuously, at least once every 4 hours that the system is in operation, except as provided in clause (B).
 - (II) For systems that do not operate continuously, at start-up, at least once every 4 hours that the system is in operation, and also prior to shutting down the plant, except as provided in clause (B).
 - (B) May substitute continuous turbidity monitoring and recording for grab sample monitoring and manual recording if it validates the continuous measurement for accuracy on a regular basis using a procedure speci-

fied by the manufacturer. At a minimum, calibration with an EPA-approved primary standard shall be conducted at least quarterly. For systems using slow sand filtration or filtration treatment other than conventional filtration, direct filtration or diatomaceous earth filtration, the Department may reduce the sampling frequency to once per day.

(C) Shall continuously monitor and record the residual disinfectant concentration of the water being supplied to the distribution system and record both the lowest value for each day and the number of periods each day when the value is less than 0.20 mg/L for more than 4 hours. If a public water system's continuous monitoring or recording equipment fails, the public water supplier may, upon notification of the Department under § 109.701(a)(3) (relating to reporting and recordkeeping), substitute grab sampling or manual recording every 4 hours in lieu of continuous monitoring. Grab sampling or manual recording may not be substituted for continuous monitoring or recording for longer than 5 working days after the equipment fails.

(D) Until April 28, 2019, shall measure and record the residual disinfectant concentration at representative points in the distribution system no less frequently than the frequency required for total coliform sampling for compliance with the MCL for microbiological contaminants.

(E) Beginning April 29, 2019, shall measure and record the residual disinfectant concentration at representative points in the distribution system in accordance with a sample siting plan as specified in § 109.701(a)(8) and as follows:

(I) A public water supplier shall monitor the residual disinfectant concentration at the same time and from the same location that a total coliform sample is collected as specified in paragraph (3)(i) and (ii). Measurements taken under this subclause may be used to meet the requirements under subclause (II).

(II) A public water supplier shall monitor the residual disinfectant concentration at representative locations in the distribution system at least once per week.

(III) A public water supplier that does not maintain the minimum residual disinfectant concentration specified in § 109.710 (relating to disinfectant residual in the distribution system) at one or more sample sites shall include those sample sites in the monitoring conducted the following month.

(IV) Compliance with the minimum residual disinfectant concentration shall be determined in accordance with § 109.710.

(V) A public water system may substitute online residual disinfectant concentration monitoring and recording for grab sample monitoring and manual recording if it validates the online measurement for accuracy in accordance with § 109.304 (relating to analytical requirements).

(ii) For a public water supplier serving 3,300 or fewer people, the Department may reduce the residual disinfectant concentration monitoring for the water being supplied to the distribution system to a minimum of 2 hours between samples at the grab sampling frequencies prescribed as follows if the historical performance and operation of the system indicate the system can meet the residual disinfectant concentration at all times:

<i>System Size (People)</i>	<i>Samples/Day</i>
<500	1
500—1,000	2
1,001—2,500	3
2,501—3,300	4

If the Department reduces the monitoring, the supplier shall nevertheless collect and analyze another residual disinfectant measurement as soon as possible, but no longer than 4 hours from any measurement which is less than .2 mg/L.

(iii) For a public water supplier serving fewer than 500 people, the Department may reduce the filtered water turbidity monitoring to one grab sample per day, if the historical performance and operation of the system indicate effective turbidity removal is maintained under the range of conditions expected to occur in the system's source water.

(iv) A public water supplier providing conventional filtration treatment or direct filtration and serving 10,000 or more people and using surface water or GUDI sources shall, beginning January 1, 2002, conduct continuous monitoring of turbidity for each individual filter using an approved method under the EPA regulation in 40 CFR 141.74(a) (relating to analytical and monitoring requirements) and record the results at least every 15 minutes. Beginning January 1, 2005, public water suppliers providing conventional or direct filtration and serving fewer than 10,000 people and using surface water or GUDI sources shall conduct continuous monitoring of turbidity for each individual filter using an approved method under the EPA regulation in 40 CFR 141.74(a) and record the results at least every 15 minutes.

(A) The water supplier shall calibrate turbidimeters using the procedure specified by the manufacturer. At a minimum, calibration with an EPA-approved primary standard shall be conducted at least quarterly.

(B) If there is failure in the continuous turbidity monitoring or recording equipment, or both, the system shall conduct grab sampling or manual recording, or both, every 4 hours in lieu of continuous monitoring or recording.

(C) A public water supplier serving 10,000 or more persons has a maximum of 5 working days following the failure of the equipment to repair or replace the equipment before a violation is incurred.

(D) A public water supplier serving fewer than 10,000 persons has a maximum of 14 days following the failure of the equipment to repair or replace the equipment before a violation is incurred.

(v) A public water supplier shall calculate the log inactivation of Giardia, using measurement methods established by the EPA, at least once per day during expected peak hourly flow. The log inactivation for Giardia must also be calculated whenever the residual disinfectant concentration at the entry point falls below the minimum value specified in § 109.202(c) (relating to State MCLs, MRDLs and treatment technique requirements) and continue to be calculated every 4 hours until the residual disinfectant concentration at the entry point is at or above the minimum value specified in § 109.202(c). Records of log inactivation calculations must be reported to the Department in accordance with § 109.701(a)(2).

(vi) In addition to the requirements specified in subparagraph (v), a public water supplier that uses a disinfectant other than chlorine to achieve log inactivation shall calculate the log inactivation of viruses at least once per day during expected peak hourly flow. The log inactivation for viruses shall also be calculated whenever the residual disinfectant concentration at the entry point falls below the minimum value specified in § 109.202(c) and continue to be calculated every 4 hours until the residual disinfectant concentration at the entry point is at or above the minimum value specified in § 109.202(c). Records of log inactivation calculations shall be reported to the Department in accordance with § 109.701(a).

(2) *Performance monitoring for unfiltered surface water and GUDI.* A public water supplier using unfiltered surface water or GUDI sources shall conduct the following source water and performance monitoring requirements on an interim basis until filtration is provided, unless increased monitoring is required by the Department under § 109.302:

(i) Except as provided under subparagraphs (ii) and (iii), a public water supplier:

(A) Shall perform *E. coli* or total coliform density determinations on samples of the source water immediately prior to disinfection. Regardless of source water turbidity, the minimum frequency of sampling for total coliform or *E. coli* determinations may be no less than the following:

<i>System Size (People)</i>	<i>Samples/Week</i>
<500	1
500—3,299	2
3,300—10,000	3
10,001—25,000	4
25,001 or more	5

(B) Shall measure the turbidity of a representative grab sample of the source water immediately prior to disinfection as follows:

(I) For systems that operate continuously, at least once every 4 hours that the system is in operation, except as provided in clause (C).

(II) For systems that do not operate continuously, at start-up, at least once every 4 hours that the system is in operation, and also prior to shutting down the plant, except as provided in clause (C).

(C) May substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a procedure specified by the manufacturer. At a minimum, calibration with an EPA-approved primary standard shall be conducted at least quarterly.

(D) Shall continuously monitor and record the residual disinfectant concentration required under § 109.202(c)(1)(iii) of the water being supplied to the distribution system and record the lowest value for each day. If a public water system's continuous monitoring or recording equipment fails, the public water supplier may, upon notification of the Department under § 109.701(a)(3), substitute grab sampling or manual recording, or both, every 4 hours in lieu of continuous monitoring. Grab sampling or manual recording may not be substituted for continuous monitoring for longer than 5 days after the equipment fails.

(E) Until April 28, 2019, shall measure the residual disinfectant concentration at representative points in the distribution system no less frequently than the frequency required for total coliform sampling for compliance with the MCL for microbiological contaminants.

(F) Beginning April 29, 2019, shall measure and record the residual disinfectant concentration at representative points in the distribution system in accordance with a sample siting plan as specified in § 109.701(a)(8) and as follows:

(I) A public water supplier shall monitor the residual disinfectant concentration at the same time and from the same location that a total coliform sample is collected as specified in paragraph (3)(i) and (ii). Measurements taken under this subclause may be used to meet the requirements under subclause (II).

(II) A public water supplier shall monitor the residual disinfectant concentration at representative locations in the distribution system at least once per week.

(III) A public water supplier that does not maintain the minimum residual disinfectant concentration specified in § 109.710 at one or more sample sites shall include those sample sites in the monitoring conducted the following month.

(IV) Compliance with the minimum residual disinfectant concentration shall be determined in accordance with § 109.710.

(V) A public water system may substitute online residual disinfectant concentration monitoring and recording for grab sample monitoring

and manual recording if it validates the online measurement for accuracy in accordance with § 109.304.

(ii) For a public water supplier serving 3,300 or fewer people, the Department may reduce the residual disinfectant concentration monitoring for the water being supplied to the distribution system to a minimum of 2 hours between samples at the grab sampling frequencies prescribed as follows if the historical performance and operation of the system indicate the system can meet the residual disinfectant concentration at all times:

<i>System Size (People)</i>	<i>Samples/Day</i>
<500	1
500—1,000	2
1,001—2,500	3
2,501—3,300	4

If the Department reduces the monitoring, the supplier shall nevertheless collect and analyze another residual disinfectant measurement as soon as possible, but no longer than 4 hours from any measurement which is less than the residual disinfectant concentration approved under § 109.202(c)(1)(iii).

(iii) For a public water supplier serving fewer than 500 people, the Department may reduce the source water turbidity monitoring to one grab sample per day, if the historical performance and operation of the system indicate effective disinfection is maintained under the range of conditions expected to occur in the system's source water.

(3) *Monitoring requirements for coliforms.* Public water systems shall determine the presence or absence of total coliforms for each routine or check sample; and, the presence or absence of *E. coli* for a total coliform positive sample in accordance with analytical techniques approved by the Department under § 109.304 (relating to analytical requirements). A system may forego *E. coli* testing on a total coliform-positive sample if the system assumes that any total coliform-positive sample is also *E. coli*-positive. A system which chooses to forego *E. coli* testing shall, under § 109.701(a)(3), notify the Department within 1 hour after the water system learns of the violation or the situation, and shall provide public notice in accordance with § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice) if there is a violation of the *E. coli* MCL as set forth in subparagraph (iv).

(i) *Frequency.* Public water systems shall collect monthly samples at regular time intervals throughout the monitoring period as specified in the system distribution sample siting plan under § 109.303(a)(2) (relating to sampling requirements). Systems which use groundwater and serve 4,900 persons or fewer may collect all required samples on a single day if they are from different sampling sites in the distribution system.

(A) The number of monthly total coliform samples that a public water system shall take is based on the population served by the system as follows:

<i>Population Served</i>	<i>Minimum Number of Samples per Month</i>
25 to 1,000	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210

<i>Population Served</i>	<i>Minimum Number of Samples per Month</i>
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

(B) A public water system that uses either a surface water or a GUDI source and does not practice filtration in compliance with Subchapter B (relating to MCLs, MRDLs or treatment technique requirements) shall collect at least one total coliform sample at the entry point, or an equivalent location as determined by the Department, within 24 hours of each day that the turbidity level in the source water, measured as specified in paragraph (2)(i)(B), exceeds 1.0 NTU. The Department may extend this 24-hour collection limit to a maximum of 72 hours if the system adequately demonstrates a logistical problem outside the system's control in having the sample analyzed within 30 hours of collection. A logistical problem outside the system's control may include a source water turbidity result exceeding 1.0 NTU over a holiday or weekend in which the services of a Department certified laboratory are not available within the prescribed sample holding time. These sample results shall be included in determining compliance with the MCL for *E. coli* established under § 109.202(a)(2) and whether an assessment has been triggered under § 109.202(c)(4).

(C) Prior to serving water to the public each season, a seasonal system shall collect one or more total coliform samples in accordance with the Department-approved start-up procedure specified in § 109.715 (relating to seasonal systems) until coliforms are not detected in a set of samples. These samples are considered special purpose samples under subparagraph (v).

(D) A system may take more than the minimum number of required routine samples only if the samples are collected in accordance with § 109.303(a)(2) and are included in the sample siting plan in accordance

with § 109.701(a)(5). These samples shall be included in determining whether an assessment has been triggered under § 109.202(c)(4).

(E) A community water system serving 1,000 people or fewer or a noncommunity water system may be required to begin monitoring on an alternate schedule established by the Department. This determination will be made based on the results of a special monitoring evaluation performed during a sanitary survey. The system shall continue monitoring on the alternate schedule until otherwise notified by the Department.

(ii) *Repeat monitoring.* A public water system shall collect a set of check samples within 24 hours of being notified of a total coliform-positive routine sample, a total coliform-positive check sample or a total coliform-positive sample collected under subparagraph (i)(B). The Department may extend this 24-hour collection limit to a maximum of 72 hours if the system adequately demonstrates a logistical problem outside the system's control in having the check samples analyzed within 30 hours of collection. A logistical problem outside the system's control may include a coliform-positive sample result received over a holiday or weekend in which the services of a Department accredited laboratory are not available within the prescribed sample holding time.

(A) A public water system shall collect at least three check samples for each routine total coliform-positive sample found.

(B) The system shall collect at least one check sample from the sampling tap where the original total coliform-positive sample was taken. The system shall also collect at least one check sample at any tap within five service connections upstream of the original coliform-positive sample and at least one check sample at any tap within five service connections downstream of the original sampling site unless alternative locations are approved by the Department in accordance with § 109.701(a)(5). If a total coliform-positive sample occurs at the end of the distribution system or one service connection away from the end of the distribution system, the water supplier shall collect an additional check sample upstream of the original sample site in lieu of a downstream check sample.

(C) A system shall collect all check samples on the same day, except that a system with a single service connection may collect the required set of check samples all on the same day or consecutively over a 3-day period.

(D) At a minimum, the system shall collect one set of check samples for each total coliform-positive routine sample. If a check sample is total coliform-positive, the public water system shall collect an additional set of check samples from the same locations in the manner specified in this subparagraph. The system shall continue to collect additional sets of check samples from the same locations until either total coliforms are not detected in a set of check samples, or the system determines that an assessment has been triggered under § 109.202(c)(4).

(E) Results of all routine and check samples not invalidated by the Department shall be included in determining compliance with the MCL for *E. coli* as established under § 109.202(a)(2) or whether an assessment has been triggered under § 109.202(c)(4).

(F) If an upstream or downstream repeat monitoring location identified in the sample siting plan is not available in the time frame specified in this subparagraph, the public water system shall notify the Department prior to collecting the check sample that the check sample will be collected from a location within reasonable proximity to the routine monitoring location.

(iii) *Invalidation of total coliform samples.* A total coliform sample invalidated under this paragraph does not count towards meeting the minimum monitoring requirements of this section.

(A) The Department may invalidate a total coliform-positive sample if one of the following applies:

(I) The laboratory which performed the analysis establishes that improper sample analysis caused the total coliform-positive result.

(II) A domestic or other nondistribution system plumbing problem exists when a coliform contamination incident occurs that is limited to a specific service connection from which a coliform-positive sample was taken in a public water system with more than one service connection. The Department's determination to invalidate a sample will be based on a total coliform-positive check sample collected at the same tap as the original total coliform-positive sample and all total coliform-negative check samples collected within five service connections of the original total coliform positive sample. This type of sample invalidation does not apply to public water systems with only one service connection.

(III) A total coliform-positive sample result is due to a circumstance or condition which does not reflect water quality in the distribution system. The Department's decision to invalidate a sample will be based on evidence that the sample result does not reflect water quality in the distribution system. In this case, the system shall still collect all check samples required under subparagraph (ii) to determine compliance with the MCL for *E. coli* as established under § 109.202(a)(2) or whether an assessment has been triggered under § 109.202(c)(4). The decision to invalidate a total coliform-positive sample result and supporting evidence will be documented by the Department, in writing, and approved and signed by the supervisor of the Department official who recommended the decision.

(B) A laboratory shall invalidate a total coliform sample if no total coliforms are detected and one of the following occurs:

(I) The sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined.

(II) The sample exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter.

(III) The sample produces a turbid culture in the absence of an acid reaction in the Presence-Absence Coliform Test.

(C) If a laboratory invalidates a sample because of interference as specified in clause (B), the laboratory shall notify the system within 1 business day to collect another sample from the same location as the original sample within 24 hours of being notified of the interference and have it analyzed for the presence of total coliforms. The system shall resample within 24 hours of being notified of interference and continue to resample every 24 hours until it receives a valid result. The Department may extend this 24-hour limit to a maximum of 72 hours if the system adequately demonstrates a logistical problem outside the system's control in having the resamples analyzed within 30 hours. A logistical problem outside the system's control may include a notification of a laboratory sample invalidation, due to interference, which is received over a holiday or weekend in which the services of a Department accredited laboratory are not available within the prescribed sample holding time.

(iv) *Compliance determinations.*

(A) A system is in compliance with the MCL for *E. coli* as specified under § 109.202(a)(2) for samples taken under this paragraph unless any of the following conditions occur:

(I) The system has an *E. coli*-positive check sample following a total coliform-positive routine sample.

(II) The system has a total coliform-positive check sample following an *E. coli*-positive routine sample.

(III) The system fails to take all required check samples following an *E. coli*-positive routine sample.

(IV) The system fails to test for *E. coli* when any check sample tests positive for total coliform.

(B) A public water system shall determine compliance with the MCL for *E. coli* in clause (A) for each month in which it is required to monitor for total coliforms.

(v) *Special purpose samples.* Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement or repair, those taken to investigate potential problems in the distribution system or those collected as part of a seasonal system start-up procedure, may not be used to determine compliance with the MCL for *E. coli* as established under § 109.202(a)(2) or whether an assessment has been triggered under § 109.202(c)(4). Check samples taken under subparagraph (ii) are not considered special purpose samples, and shall be used to determine compliance with the monitoring, MCL and treatment tech-

nique requirements for total coliforms and *E. coli* established under § 109.202(a)(2) and (c)(4).

(4) *Exception.* For a water system which complies with the performance monitoring requirements under paragraph (2), the monitoring requirements for compliance with the turbidity MCL do not apply.

(5) *Monitoring requirements for VOCs.* Community water systems and nontransient noncommunity water systems shall monitor for compliance with the MCLs for VOCs established by the EPA under 40 CFR 141.61(a) (relating to maximum contaminant levels for organic contaminants). The monitoring shall be conducted according to the requirements established by the EPA under 40 CFR 141.24(f) (relating to organic chemicals, sampling and analytical requirements), incorporated herein by reference, except as modified by this chapter. Initial or first year monitoring mentioned in this paragraph refers to VOC monitoring conducted on or after January 1, 1993.

(i) *Vinyl chloride.* Monitoring for compliance with the MCL for vinyl chloride is required for groundwater entry points at which one or more of the following two-carbon organic compounds have been detected: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloro-ethane, cis-1,2-dichloroethylene, trans-1,2-dichloro-ethylene or 1,1-dichloroethylene and shall consist of quarterly samples. If the results of the first analysis do not detect vinyl chloride, monitoring shall be reduced to one sample during each compliance period. Surface water entry points shall monitor for vinyl chloride as specified by the Department.

(ii) *Initial monitoring.* Initial monitoring shall consist of 4 consecutive quarterly samples at each entry point in accordance with the following monitoring schedule during the compliance period beginning January 1, 1993, except for systems which are granted reduced initial monitoring in accordance with clauses (E) and (F). A system which monitors during the initial monitoring period, but begins monitoring before its scheduled initial monitoring year specified in this subparagraph, shall begin monitoring every entry point during the first calendar quarter of the year it begins monitoring, except as provided in clause (E).

(A) Systems serving more than 10,000 persons shall begin monitoring during the quarter beginning January 1, 1994.

(B) Systems serving 3,301 persons to 10,000 persons shall begin monitoring during the quarter beginning January 1, 1995.

(C) Systems serving 500 to 3,300 persons shall begin monitoring during the quarter beginning January 1, 1993.

(D) Systems serving fewer than 500 persons shall begin monitoring during the quarter beginning January 1, 1994.

(E) For systems serving 3,300 or fewer people which monitor at least one quarter prior to October 1, 1993, and do not detect VOCs at an entry point during the first quarterly sample, the required initial monitoring is

reduced to one sample at that entry point. For systems serving 500 to 3,300 people to qualify for this reduced monitoring, the initial monitoring shall have been conducted during the quarter beginning January 1, 1993.

(F) For systems serving more than 3,300 people, which were in existence prior to January 1, 1993, initial monitoring for compliance with the MCLs for VOCs established by the EPA under 40 CFR 141.61(a) is reduced to one sample for each entry point which meets the following conditions:

(I) VOC monitoring required by the Department between January 1, 1988, and December 31, 1992, has been conducted and no VOCs regulated under 40 CFR 141.61(a) were detected.

(II) The first quarter monitoring required by this paragraph has been conducted during the first quarter of the system's scheduled monitoring year under this paragraph, with no detection of a VOC.

(G) Systems with new entry points associated with new sources which are permitted under Subchapter E (relating to permit requirements) to begin operation after December 31, 1992, shall conduct initial monitoring as follows. New entry points shall be monitored quarterly, beginning the first full quarter the entry point begins serving the public.

(iii) *Repeat monitoring for entry points at which a VOC is detected.* For entry points at which a VOC is detected at a level equal to or greater than 0.0005 mg/L, then:

(A) Monitoring shall be repeated quarterly beginning the quarter following the detection for VOCs for which the EPA has established MCLs under 40 CFR 141.61(a), except for vinyl chloride as provided in subparagraph (i), until reduced monitoring is granted in accordance with this subparagraph.

(B) The Department may decrease the quarterly monitoring requirement specified in clause (A) provided it has determined that the system is reliably and consistently below the MCL. For an initial detection of a VOC, the Department will not make this determination until the water system obtains results from a minimum of four consecutive quarterly samples that are reliably and consistently below the MCL.

(C) If the Department determines that the system is reliably and consistently below the MCL, the Department may allow the system to monitor annually. Systems which monitor annually shall monitor during the quarter that previously yielded the highest analytical result, or as specified by the Department.

(iv) *Repeat monitoring for entry points at which no VOC is detected.*

(A) For entry points at which VOCs are not detected during the first year of quarterly monitoring, or annual monitoring if only one sample was

required at an entry point for first year monitoring under subparagraph (ii)(E), or (F), required monitoring is reduced to one sample per entry point per year.

(B) For groundwater or GUDI entry points where VOCs are monitored in accordance with this paragraph, but are not detected during 3 years of quarterly or annual monitoring, or both, required monitoring is reduced to one sample per entry point during each subsequent compliance period. Reduced monitoring shall be conducted at 3-year intervals from the year of required initial monitoring.

(v) *Repeat monitoring for VOCs with MCL exceedances.* For entry points at which a VOC MCL is exceeded, monitoring shall be conducted quarterly, beginning the quarter following the exceedance. Quarterly monitoring shall continue until a minimum of 4 consecutive quarterly samples shows the system is in compliance as specified in subparagraph (x) and the Department determines the system is reliably and consistently below the MCL. If the Department determines that the system is in compliance and is reliably and consistently below the MCL, the Department may allow the system to monitor in accordance with subparagraph (iii)(C).

(vi) *Confirmation samples.* A confirmation sample shall be collected and analyzed for each VOC listed under 40 CFR 141.61(a) which is detected at a level in excess of its MCL during annual or less frequent compliance monitoring. The confirmation sample shall be collected within 2 weeks of notification by the accredited laboratory performing the analysis that an MCL has been exceeded. The average of the results of the original and the confirmation sample will be used to determine compliance. Monitoring shall be completed by the deadline specified for VOC compliance monitoring.

(vii) *Reduced monitoring.* When reduced monitoring is provided under subparagraph (iii) or (iv), the system shall monitor the entry point during the calendar year quarter that previously yielded the highest analytical result, or as specified by the Department. The reduced monitoring option in subparagraph (iv)(B) does not apply to entry points at which treatment has been installed for VOC removal. Quarterly performance monitoring is required for VOCs for which treatment has been installed.

(viii) *Waivers.* Waivers under 40 CFR 141.24(f)(7) and (10) will not be available for the VOC monitoring requirements in this paragraph. Systems with groundwater or GUDI entry points which have 3 consecutive years of quarterly or annual samples with no detection of a VOC may apply to the Department for a waiver. Entry points at which treatment has been installed to remove a VOC are not eligible for a monitoring waiver.

(A) A use waiver may be granted to a public water supplier from conducting monitoring under subparagraph (iii)(C), based on documentation

provided by the public water supplier and a determination by the Department that the criteria has been met. Waivers may be granted after evaluating the following criteria:

(I) Knowledge of previous use, including transport, storage or disposal, of a substance containing VOCs within the wellhead protection area Zones I and II as defined under § 109.1 (relating to definitions).

(II) If a determination by the Department reveals no previous use, a waiver may be granted.

(B) If a use waiver is granted by the Department, required monitoring is reduced to one sample per entry point during each subsequent compliance period. Monitoring shall be conducted at 3-year intervals from the year of required initial monitoring.

(C) A use waiver is effective for one compliance period and may be renewed in each subsequent compliance period.

(D) Susceptibility waivers under 40 CFR 141.24(f)(8)(ii) will not be available for the VOC monitoring requirements in this paragraph.

(E) Waiver requests and renewals shall be submitted to the Department, on forms provided by the Department, for review and approval prior to the end of the applicable monitoring period. Until the waiver request or renewal is approved, the public water system is responsible for conducting all required monitoring.

(ix) *Invalidation of VOC samples.*

(A) The Department may invalidate results of obvious sampling errors.

(B) A VOC sample invalidated under this subparagraph does not count towards meeting the minimum monitoring requirements of this paragraph.

(x) *Compliance determinations.* Compliance with the VOC MCLs shall be determined based on the analytical results obtained at each entry point. If one entry point is in violation of an MCL, the system is in violation of the MCL.

(A) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average of all samples taken at each entry point.

(B) If monitoring is conducted annually or less frequently, the system is out of compliance if the level of a contaminant at any entry point is greater than the MCL. If a confirmation sample is collected as specified in subparagraph (vi), compliance is determined using the average of the two sample results.

(C) If any sample result will cause the running annual average to exceed the MCL at any entry point, the system is out of compliance with the MCL immediately.

(D) If a system fails to collect the required number of samples, compliance with the MCL will be based on the total number of samples collected.

(E) If a sample result is less than the detection limit, zero will be used to calculate compliance.

(6) *Monitoring requirements for SOCs (pesticides and PCBs).* Community water systems and nontransient noncommunity water systems shall monitor for compliance with the MCLs for SOCs established by the EPA under 40 CFR 141.61(c). The monitoring shall be conducted according to the requirements established by the EPA under 40 CFR 141.24(h), incorporated herein by reference except as modified by this chapter.

(i) *Initial monitoring.* Initial monitoring shall consist of 4 consecutive quarterly samples at each entry point beginning during the quarter beginning January 1, 1995, except for systems which are granted an initial monitoring waiver in accordance with subparagraph (vii). Systems which monitor during the initial monitoring period but begin monitoring before 1995 shall begin monitoring during the first calendar quarter of the year. New entry points associated with new sources which are vulnerable to SOC contamination, as determined in accordance with subparagraph (vii), and which begin operation after March 31, 1995, shall be monitored quarterly, beginning the first full quarter the entry point begins serving the public.

(ii) *Repeat monitoring for SOCs that are detected.* If an SOC is detected (as defined by the EPA under 40 CFR 141.24(h)(18) or by the Department), then:

(A) Monitoring for the detected SOC shall be conducted quarterly, beginning the quarter following the detection, until reduced monitoring is granted in accordance with this subparagraph.

(B) The Department may decrease the quarterly monitoring requirement specified in clause (A) provided it has determined that the system is reliably and consistently below the MCL. For an initial detection of a SOC, the Department will not make this determination until the water system obtains results from a minimum of four consecutive quarterly samples that are reliably and consistently below the MCL.

(C) If the Department determines that the system is reliably and consistently below the MCL, the Department may allow the system to monitor annually. Systems which monitor annually shall monitor during the quarter that previously yielded the highest analytical result, or as specified by the Department.

(D) Systems which have 3 consecutive years of quarterly or annual samples with no detection of a contaminant may apply to the Department for a waiver as specified in subparagraph (vii). A waiver is effective for one compliance period and may be renewed in each subsequent compliance period.

(E) For entry points at which either heptachlor or heptachlor epoxide is detected during the initial round of consecutive quarterly samples, or in subsequent repeat samples, the monitoring shall be continued for both

contaminants in accordance with the more frequent monitoring required of the two contaminants based on the level at which each is detected.

(iii) *Repeat monitoring for SOCs that are not detected.* For entry points at which SOCs are not detected during the first year of quarterly monitoring, the required monitoring is reduced to one sample in each 3-year compliance period for systems serving 3,300 or fewer persons and to 2 consecutive quarterly samples in each compliance period for systems serving more than 3,300 persons. Reduced monitoring shall be conducted at 3-year intervals from the year of required initial VOC monitoring, in accordance with paragraph (5)(ii).

(iv) *Repeat monitoring for SOCs with MCL exceedances.* For entry points at which an SOC MCL is exceeded, monitoring for the detected SOC shall be conducted quarterly, beginning the quarter following the exceedance. Quarterly monitoring shall continue until a minimum of 4 consecutive quarterly samples shows the system is in compliance as specified in subparagraph (ix) and the Department determines the system is reliably and consistently below the MCL. If the Department determines that the system is in compliance and is reliably and consistently below the MCL, the Department may allow the system to monitor in accordance with subparagraph (ii)(C).

(v) *Confirmation samples.* A confirmation sample shall be collected and analyzed for each SOC listed under 40 CFR 141.61(c) which is detected at a level in excess of its MCL during annual or less frequent compliance monitoring. The confirmation sample shall be collected within 2 weeks of the water supplier receiving notification from the accredited laboratory performing the analysis that an MCL has been exceeded. The average of the results of the original and the confirmation samples will be used to determine compliance. Confirmation monitoring shall be completed by the deadline specified for SOC compliance monitoring.

(vi) *Reduced monitoring.* When reduced monitoring is provided under subparagraph (ii) or (iii), the system shall monitor the entry point during the second calendar year quarter, or the second and third calendar year quarter when 2 quarterly samples are required in each compliance period, unless otherwise specified by the Department. The reduced monitoring option in subparagraph (iii) does not apply to entry points at which treatment has been installed for SOC removal. Compliance monitoring for SOCs for which treatment has been installed to comply with an MCL shall be conducted at least annually, and performance monitoring shall be conducted quarterly.

(vii) *Waivers.* A waiver will be granted to a public water supplier from conducting the initial compliance monitoring or repeat monitoring, or both, for an SOC based on documentation provided by the public water supplier and a determination by the Department that the criteria in clause (B), (C) or (D) has been met. A waiver is effective for one compliance period and may be renewed in each subsequent compliance period. If the Department has not

granted a use waiver in accordance with clause (B), the public water supplier is responsible for submitting a waiver application and renewal application to the Department for review in accordance with clause (B), (C) or (D) for specific entry points. Waiver applications will be evaluated relative to the vulnerability assessment area described in clause (A) and the criteria in clause (B), (C) or (D). Entry points at which treatment has been installed to remove an SOC are not eligible for a monitoring waiver for the SOCs for which treatment has been installed.

(A) *Vulnerability assessment area for SOCs including dioxin and PCBs.*

(I) For groundwater or GUDI entry points, the vulnerability assessment area shall consist of wellhead protection area Zones I and II.

(II) For surface water entry points, the vulnerability assessment area shall consist of the area that supplies water to the entry point and is separated from other watersheds by the highest topographic contour.

(B) *Use waivers.* A use waiver will be granted by the Department for contaminants which the Department has determined have not been used, stored, manufactured, transported or disposed of in this Commonwealth, or portions of this Commonwealth. A use waiver specific to a particular entry point requires that an SOC was not used, stored, manufactured, transported or disposed of in the vulnerability assessment area. If use waiver criteria cannot be met, a public water supplier may apply for a susceptibility waiver.

(C) *Susceptibility waivers.* A susceptibility waiver for specific contaminants may be granted based on the following criteria, and only applies to groundwater entry points:

(I) Previous analytical results.

(II) Environmental persistence and transport of the contaminant.

(III) Proximity of the drinking water source to point or nonpoint source contamination.

(IV) Elevated nitrate levels as an indicator of the potential for pesticide contamination.

(V) Extent of source water protection or approved wellhead protection program.

(D) *Waiver requests and renewals.* Waiver requests and renewals shall be submitted to the Department, on forms provided by the Department, for review and approval prior to the end of the applicable monitoring period. Until the waiver request or renewal is approved, the public water system is responsible for conducting all required monitoring.

(viii) *Invalidation of SOC samples.*

(A) The Department may invalidate results of obvious sampling errors.

(B) An SOC sample invalidated under this subparagraph does not count towards meeting the minimum monitoring requirements of this paragraph.

(ix) *Compliance determinations.* Compliance with the SOC MCLs shall be determined based on the analytical results obtained at each entry point. If one entry point is in violation of an MCL, the system is in violation of the MCL.

(A) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average of all samples taken at each entry point.

(B) If monitoring is conducted annually or less frequently, the system is out of compliance if the level of a contaminant at any entry point is greater than the MCL. If a confirmation sample is collected as specified in subparagraph (v), compliance is determined using the average of the two sample results.

(C) If any sample result will cause the running annual average to exceed the MCL at any entry point, the system is out of compliance with the MCL immediately.

(D) If a system fails to collect the required number of samples, compliance with the MCL will be based on the total number of samples collected.

(E) If a sample result is less than the detection limit, zero will be used to calculate compliance.

(7) *Monitoring requirements for IOCs.* Community water systems and non-transient noncommunity water systems shall monitor for compliance with the MCLs for IOCs established by the EPA under 40 CFR 141.62 (relating to maximum contaminant levels for inorganic contaminants). Transient noncommunity water suppliers shall monitor for compliance with the MCLs for nitrate and nitrite. The monitoring shall be conducted according to the requirements established by the EPA under 40 CFR 141.23 (relating to inorganic chemical sampling and analytical requirements). The requirements are incorporated by reference except as modified by this chapter.

(i) *Monitoring requirements for asbestos.*

(A) *Monitoring frequency.* Community water systems and nontransient noncommunity water systems not granted a waiver under clause (F) shall monitor for compliance with the MCL for asbestos by taking one sample at each vulnerable sampling point during the first 3-year compliance period of each 9-year compliance cycle, with the initial compliance monitoring beginning not later than the calendar year beginning January 1, 1995.

(B) *Sampling points.* A system shall monitor at the following locations:

(I) Each entry point to the distribution system.

(II) At least one representative location within the distribution system identified in a written sample site plan that includes a materials evaluation of the distribution system. The written sample site plan shall be maintained on record and submitted to the Department prior to conducting initial monitoring or upon request.

(C) *Monitoring of new entry points.* New entry points which begin operation after December 31, 1995, shall conduct initial monitoring during the first compliance period of the first compliance cycle after the entry point begins serving the public, if the Department determines that a waiver cannot be granted in accordance with clause (F).

(D) *Repeat monitoring for systems that exceed the asbestos MCL.* If a sample exceeds the MCL for asbestos, the monitoring at that sampling point shall be continued quarterly beginning in the quarter following the MCL exceedance. After four consecutive quarterly samples with results reliably and consistently below the MCL at that entry point, the required monitoring is reduced to one sample at that entry point during the first 3-year compliance period of each subsequent 9-year compliance cycle, if treatment has not been installed to remove asbestos from the source water. Compliance monitoring at entry points at which treatment has been installed to remove asbestos from source water shall be conducted at least annually, and performance monitoring shall be conducted quarterly.

(E) *Confirmation samples.* For asbestos sample results in excess of the MCL during annual or less frequent compliance monitoring, the water supplier shall take a confirmation sample within 2 weeks of notification by the accredited laboratory performing the analysis. The average of the results of the original and the confirmation sample will be used to determine compliance. Monitoring shall be completed by the deadline specified for asbestos compliance monitoring.

(F) *Waivers for asbestos monitoring.* A waiver will be granted to a public water supplier from conducting compliance monitoring for asbestos based on documentation provided by the public water supplier and a determination by the Department that the criteria in this clause have been met. A waiver is effective for one compliance period and may be renewed in each subsequent compliance period. Entry points at which treatment has been installed to remove asbestos are not eligible for a monitoring waiver.

(I) A waiver for entry point compliance monitoring may be granted if the sources supplying the entry point are not vulnerable to asbestos contamination.

(II) A waiver for distribution system monitoring may be granted if the distribution system does not contain asbestos cement pipe as indicated in the materials evaluation or if the water system has optimized corrosion control as specified in Subchapter K (relating to lead and copper).

(III) Waiver requests and renewals shall be submitted to the Department, on forms provided by the Department, for review and approval prior to the end of the applicable monitoring period. Until the waiver request or renewal is approved, the public water system is responsible for conducting all required monitoring.

(ii) *Monitoring requirements for nitrate and nitrite.*

(A) *Initial monitoring schedule.* A public water system shall begin monitoring for nitrate and nitrite by taking one annual sample at each groundwater or GUDI entry point to the distribution system beginning during the year beginning January 1, 1993. Community water systems and nontransient noncommunity water systems with surface water sources shall monitor quarterly at each surface water entry point for nitrate and nitrite beginning during the quarter beginning January 1, 1993. Transient noncommunity water systems shall monitor each surface water entry point by taking one annual sample beginning during the year beginning January 1, 1993.

(B) *Monitoring of new entry points.*

(I) New community and nontransient noncommunity surface water entry points associated with new sources shall be monitored quarterly, beginning the first full quarter the entry point begins serving the public. Quarterly monitoring shall continue until reduced monitoring is granted in accordance with clause (C)(II) or (D).

(II) New community and nontransient noncommunity groundwater or GUDI entry points and new transient noncommunity entry points associated with new sources shall be monitored annually, beginning within 1 year of serving the public.

(C) *Repeat monitoring for systems with nitrate or nitrite levels equal to or greater than 50% of the MCLs.*

(I) For entry points at which initial monitoring results or subsequent monitoring indicate nitrate or nitrite levels equal to or greater than 50% of the MCL, water systems shall begin quarterly monitoring the quarter following detection at that level and continue quarterly monitoring for both nitrate and nitrite, unless reduced monitoring is granted in accordance with subclause (II) or (III).

(II) For surface water entry points, after 4 consecutive quarterly samples at an entry point for a water system indicate nitrate and nitrite levels in each sample are less than 50% of the MCLs, the required compliance monitoring is reduced to 1 sample per year at the entry point. Annual monitoring shall be conducted during the quarter which previously resulted in the highest analytical result, unless the Department determines that a different monitoring quarter should be used in accordance with paragraph (10).

(III) For groundwater or GUDI entry points, after 4 consecutive quarterly samples at an entry point for a water system indicate nitrate and nitrite levels in each sample are reliably and consistently below the MCL, the required compliance monitoring is reduced to 1 sample per year at the entry point. Annual monitoring shall be conducted during the quarter which previously resulted in the highest analytical result, unless the Department determines that a different monitoring quarter should be used in accordance with paragraph (10).

(IV) For nitrate or nitrite sample results in excess of the MCLs, the water supplier shall take a confirmation sample within 24 hours of having received the original sample result. A water supplier that is unable to comply with the 24-hour sampling requirement shall immediately notify persons served by the public water system in accordance with § 109.408. Systems exercising this option shall take and analyze a confirmation sample within 2 weeks of notification of the analytical results of the first sample.

(V) Noncommunity water systems for which an alternate nitrate level has been approved by the Department in accordance with 40 CFR 141.11(d) (relating to maximum contaminant levels for inorganic chemicals) are not required to collect a confirmation sample if only the nitrate MCL is exceeded and nitrate is not in excess of the alternate nitrate level. If the alternate nitrate level is exceeded, the water supplier shall collect a confirmation sample within 24 hours after being advised by the certified laboratory performing the analysis that the compliance sample exceeded 20 mg/L for nitrate. Confirmation monitoring shall be completed by the deadline for compliance monitoring.

(VI) Quarterly performance monitoring is required for nitrate and nitrite at entry points where treatment has been installed to remove nitrate or nitrite.

(D) *Repeat monitoring for systems with nitrate and nitrite levels less than 50% of the MCLs.* For entry points at which initial monitoring results indicate nitrate and nitrite levels in each sample are less than 50% of the MCLs, nitrate and nitrite monitoring shall be repeated annually during the calendar quarter which previously resulted in the highest analytical result, unless the Department determines that a different monitoring quarter should be used in accordance with paragraph (10).

(iii) *Monitoring requirements for antimony, arsenic, barium, beryllium, cadmium, cyanide, chromium, fluoride, mercury, nickel, selenium and thallium.*

(A) *Initial monitoring schedule.* Community water systems and non-transient noncommunity water systems shall monitor each surface water entry point annually beginning during the year beginning January 1, 1993,

and shall monitor each groundwater or GUDI entry point once every 3 years beginning during the year beginning January 1, 1994.

(B) *Monitoring of new entry points.* New groundwater or GUDI entry points which begin operation after December 31, 1994, shall begin initial monitoring in accordance with the schedule in clause (A)—that is, 1997, and so forth. New surface water entry points shall begin initial annual monitoring during the first new calendar year after the entry point begins serving the public.

(C) *Repeat monitoring for entry points at which an IOC MCL is exceeded.*

(I) For entry points at which initial monitoring results or subsequent monitoring indicates an IOC level in excess of the MCL, monitoring shall be repeated quarterly beginning the quarter following detection at that level for each IOC in excess of an MCL, until reduced monitoring is granted in accordance with subclause (II).

(II) After analyses of four consecutive quarterly samples indicate that contaminant levels are reliably and consistently below the MCLs, the required monitoring at an entry point where treatment has not been installed to comply with an IOC MCL for each IOC that is reliably and consistently below the MCL is reduced to the frequencies stated in clause (A). This reduced monitoring option does not apply to entry points at which treatment has been installed for IOC removal. Compliance monitoring for IOCs for which treatment has been installed to comply with an MCL shall be conducted at least annually, and performance monitoring shall be conducted quarterly.

(III) A confirmation sample shall be collected and analyzed for each IOC listed under 40 CFR 141.62(b) which is detected at a level in excess of its MCL during annual or less frequent compliance monitoring. The confirmation sample shall be collected within 2 weeks of notification by the accredited laboratory performing the analysis that an MCL has been exceeded. The average of the results of the original and the confirmation samples will be used to determine compliance. Confirmation monitoring shall be completed by the deadline specified for IOC compliance monitoring.

(D) *Waivers for antimony, arsenic, barium, beryllium, cadmium, chromium, fluoride, mercury, nickel, selenium and thallium monitoring.* Except when treatment has been installed to remove the IOC, after 3 consecutive rounds of quarterly, annual or triennial monitoring indicate the contaminant level for an IOC is reliably and consistently below the MCL in all samples at an entry point, routine monitoring for the remainder of the compliance cycle for that IOC may be waived and the required monitoring for the IOC may be reduced to 1 sample per 9-year compliance cycle at that entry point.

- (I) Waivers may be granted based on the following criteria:
- (-a-) Previous analytical results.
 - (-b-) Other factors which may affect contaminant concentrations such as changes in groundwater pumping rates, changes in the system's configuration, changes in the system's operating procedures, changes in stream flows or characteristics, or other factors as determined by the Department on a case-by-case basis.
- (II) A decision by the Department to grant a waiver will be made in writing and will set forth the basis for the determination. The determination may be made upon an application by the public water system. The public water system shall specify the basis for its request. The Department will review and, when appropriate, revise its determination of the appropriate monitoring frequency when the system submits new monitoring data or when other data relevant to the system's appropriate monitoring frequency becomes available.
- (III) Reduced monitoring shall be conducted during the first monitoring period of the next monitoring cycle. A waiver is effective for one compliance cycle and may be renewed in each subsequent compliance cycle.
- (IV) Waiver requests and renewals shall be submitted to the Department, on forms provided by the Department, for review and approval prior to the end of the applicable monitoring period. Until the waiver request or renewal is approved, the public water system is responsible for conducting all required monitoring.
- (E) *Waivers for cyanide monitoring.* Waivers may be granted for monitoring of cyanide, provided that the system is not vulnerable due to lack of any industrial source of cyanide.
- (F) *Operational monitoring for fluoride.* Public water suppliers who fluoridate shall conduct operational monitoring for fluoride daily.
- (iv) *Invalidation of IOC samples.*
- (A) The Department may invalidate results of obvious sampling errors.
 - (B) An IOC sample invalidated under this subparagraph does not count towards meeting the minimum monitoring requirements of this section.
- (v) *Compliance determinations.* Compliance with the IOC MCLs shall be determined based on the analytical results obtained at each entry point. If one entry point is in violation of an MCL, the system is in violation of the MCL.
- (A) For systems monitoring more than once per year, compliance with the MCL for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium is determined by a running annual average of all samples taken at each entry point. If the average at any entry point is greater than the MCL, then the

system is out of compliance. If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately.

(B) For systems monitoring annually, or less frequently, the system is out of compliance with the MCL for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is collected as specified in subparagraph (ii)(C)(III), compliance is determined using the average of the two samples.

(C) Compliance with the MCLs for nitrate and nitrite is determined based on one sample if the levels of these contaminants are below the MCLs. If the levels of nitrate or nitrite exceed the MCLs in the initial sample, a confirmation sample is required in accordance with subparagraph (ii)(C)(III), and compliance shall be determined based on the average of the initial and confirmation samples.

(D) If a system fails to collect the required number of samples, compliance with the MCL will be based on the total number of samples collected.

(E) If a sample result is less than the detection limit, zero will be used to calculate compliance.

(8) *Monitoring requirements for public water systems that obtain finished water from another public water system.*

(i) Consecutive water suppliers shall monitor for compliance with the MCL for microbiological contaminants at the frequency established by the EPA and incorporated by reference into this chapter.

(ii) Community consecutive water suppliers shall monitor the distribution system for compliance with the MCL for asbestos at the frequency indicated in paragraph (7)(i), when the Department determines that the system's distribution system contains asbestos cement pipe and optimum corrosion control measures have not been implemented.

(iii) Consecutive water suppliers may be exempt from conducting monitoring for the MCLs for VOCs, SOCs and IOCs and radionuclides if the public water system from which the finished water is obtained complies with paragraphs (5)—(7) and (14) and is in compliance with the MCLs, except that asbestos monitoring is required in accordance with subparagraph (ii) .

(iv) For a public water system which is not a consecutive water system, the exemption in subparagraph (iii) applies to entry points which obtain finished water from another public water system.

(v) A public water supplier that obtains finished water from another permitted public water system using either surface water or GUDI sources shall, beginning May 16, 1992, measure the residual disinfectant concentration at representative points in the distribution system at least as frequently

as the frequency required for total coliform sampling for compliance with the MCL for microbiological contaminants.

(vi) Community water systems and nontransient noncommunity water systems that obtain finished water from another permitted public water system shall comply with the monitoring requirements for disinfection byproducts and disinfectant residuals in paragraphs (12)(i)—(v) and (13).

(vii) A community water system which is a consecutive water system shall comply with the monitoring requirements for lead and copper as specified in § 109.1101(c) (relating to lead and copper).

(viii) A public water supplier that obtains finished water from another permitted public water system using groundwater shall comply with Subchapter M (relating to additional requirements for groundwater sources).

(9) *Monitoring requirements for POE devices.* A public water supplier using a POE device shall, in addition to the monitoring requirements specified in paragraphs (1)—(8), conduct monitoring on the devices installed. As a minimum, the monitoring shall include the MCLs for which the POE device is intended to treat and monthly microbiological monitoring. The Department may allow the water supplier to reduce the frequency of microbiological monitoring based upon historical performance. Except for microbiological contaminants, monitoring shall be performed quarterly on 25% of the installed POE devices with the locations rotated so that each device is monitored at least once annually, unless increased monitoring is required by the Department under § 109.302.

(10) *Additional monitoring.* The Department may by written notice require a public water supplier to conduct monitoring for compliance with MCLs or MRDLs during a specific portion of a monitoring period, if necessary to ensure compliance with the monitoring or reporting requirements in this chapter.

(11) *Monitoring requirements for entry points that do not provide water continuously.* Entry points from which water is not provided during every quarter of the year shall monitor in accordance with paragraphs (5)—(7), except that monitoring is not required during a quarter when water is not provided to the public, unless special monitoring is required by the Department under § 109.302.

(12) *Monitoring requirements for disinfection byproducts and disinfection byproduct precursors.* Community water systems and nontransient noncommunity water systems that use a chemical disinfectant or oxidant shall monitor for disinfection byproducts and disinfection byproduct precursors in accordance with this paragraph. Community water systems and nontransient noncommunity water systems that obtain finished water from another public water system that uses a chemical disinfectant or oxidant to treat the finished water shall monitor for TTHM and HAA5 in accordance with this paragraph. Systems that use either surface water or GUDI sources and that serve at least 10,000 persons shall begin monitoring by January 1, 2002. Systems that use either surface water or GUDI sources and that serve fewer than 10,000 persons, or systems

that use groundwater sources, shall begin monitoring by January 1, 2004. Systems monitoring for disinfection byproducts and disinfection byproduct precursors shall take all samples during normal operating conditions. Systems monitoring for disinfection byproducts and disinfection byproduct precursors shall use only data collected under this chapter to qualify for reduced monitoring. Compliance with the MCLs and monitoring requirements for TTHM, HAA5, chlorite (where applicable) and bromate (where applicable) shall be determined in accordance with 40 CFR 141.132 and 141.133 (relating to monitoring requirements; and compliance requirements) which are incorporated herein by reference.

(i) *TTHM and HAA5 Stage 1 DBP Rule.*

(A) *Routine monitoring.*

(I) Systems that use either surface water or GUDI sources shall monitor as follows:

(-a-) Systems serving at least 10,000 persons shall take at least four samples per quarter per treatment plant. At least 25% of all samples collected each quarter shall be collected at locations representing maximum residence time. The remaining samples shall be taken at locations that are representative of at least average residence time and that are representative of the entire distribution system, taking into account the number of persons served, the different sources of water, and the different treatment methods.

(-b-) Systems serving from 500 to 9,999 persons shall take at least one sample per quarter per treatment plant. The sample shall be taken at a location that represents a maximum residence time.

(-c-) Systems serving fewer than 500 persons shall take at least one sample per year per treatment plant during the month of warmest water temperature. The sample shall be taken at a location that represents a maximum residence time. If the sample, or average of all samples, exceeds either a TTHM or HAA5 MCL, then the system shall take at least one sample per quarter per treatment plant beginning in the quarter immediately following the quarter in which the system exceeds either the TTHM or HAA5 MCL. The sample shall be taken at a location that represents a maximum residence time. If, after at least 1 year of monitoring, the TTHM running annual average is no greater than 0.060 mg/L and the HAA5 running annual average is no greater than 0.045 mg/L, the required monitoring is reduced back to one sample per year per treatment plant.

(-d-) If a system samples more frequently than the minimum required in items (-a)—(-c-), at least 25% of all samples collected each quarter shall be collected at locations representing maximum residence time, with the remainder of the samples representing locations of at least average residence time.

(II) Systems that use only groundwater sources not included under subclause (I) shall monitor as follows:

(-a-) Systems serving at least 10,000 persons shall take at least one sample per quarter per treatment plant. Multiple wells drawing water from a single aquifer may be considered as a single treatment plant. The sample shall be taken at a location that represents a maximum residence time.

(-b-) Systems serving fewer than 10,000 persons shall take at least one sample per year per treatment plant during the month of warmest water temperature. Multiple wells drawing water from a single aquifer may be considered as a single treatment plant. The sample shall be taken at a location that represents a maximum residence time. If the sample, or average of all samples, exceeds either a TTHM or HAA5 MCL, then the system shall take at least one sample per quarter per treatment plant beginning in the quarter immediately following the quarter in which the system exceeds either the TTHM or HAA5 MCL. The sample shall be taken at a location that represents a maximum residence time. If, after at least 1 year of monitoring, the TTHM running annual average is no greater than 0.060 mg/L and the HAA5 running annual average is no greater than 0.045 mg/L, the required monitoring is reduced back to one sample per year per treatment plant.

(-c-) If a system samples more frequently than the minimum required, at least 25% of all samples collected each quarter shall be collected at locations representing maximum residence time, with the remainder of the samples representing locations of at least average residence time.

(B) *Reduced monitoring.* Systems shall monitor for TTHM and HAA5 for at least 1 year prior to qualifying for reduced monitoring. Systems serving at least 500 persons and that use either surface water or GUDI sources shall monitor source water TOC monthly for at least 1 year prior to qualifying for reduced monitoring. The Department retains the right to require a system that meets the requirements of this clause to resume routine monitoring.

(I) For systems serving at least 500 persons that use either surface water or GUDI sources and that have a source water TOC running annual average that is no greater than 4.0 mg/L, a TTHM running annual average that is no greater than 0.040 mg/L and an HAA5 running annual average that is no greater than 0.030 mg/L, the required monitoring is reduced according to items (-a-) and (-b-). Systems serving at least 10,000 persons shall resume routine monitoring as prescribed in clause (A) if the TTHM running annual average exceeds 0.060 mg/L or the HAA5 running annual average exceeds 0.045 mg/L. Systems serving from 500 to 9,999 persons shall resume routine monitoring as prescribed

in clause (A) if the annual TTHM average exceeds 0.060 mg/L or the annual HAA5 average exceeds 0.045 mg/L. Systems serving at least 500 persons that must resume routine monitoring shall resume routine monitoring in the quarter immediately following the quarter in which the system exceeded the specified TTHM or HAA5 criteria.

(-a-) For systems serving at least 10,000 persons, the required monitoring is reduced to one sample per quarter per treatment plant. The sample shall be taken at a location that represents a maximum residence time.

(-b-) For systems serving from 500 to 9,999 persons, the required monitoring is reduced to one sample per year per treatment plant. The sample shall be taken during the month of warmest water temperature and at a location that represents a maximum residence time.

(-c-) Beginning April 1, 2008, systems not monitoring under the provisions of subparagraph (v) shall take monthly TOC samples every 30 days at a location prior to any treatment, to qualify for reduced monitoring for TTHM and HAA5 under this subparagraph. In addition to meeting other criteria for reduced monitoring in this section, the source water TOC running annual average must be less than or equal to 4.0 mg/L (based on the most recent 4 quarters of monitoring) on a continuing basis at each treatment plant to reduce or remain on reduced monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5 under this section, a system may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location prior to any treatment.

(II) For systems that use only groundwater sources not included under subclause (I), the required monitoring is reduced according to the following:

(-a-) For systems serving at least 10,000 persons that have a TTHM running annual average that is no greater than 0.040 mg/L and an HAA5 running annual average that is no greater than 0.030 mg/L, the required monitoring is reduced to one sample per year per treatment plant. The sample shall be taken during the month of warmest water temperature and at a location that represents a maximum residence time. If the annual TTHM average exceeds 0.060 mg/L or the annual HAA5 average exceeds 0.045 mg/L, the system shall resume routine monitoring as prescribed in clause (A) in the quarter immediately following the quarter in which the system exceeds 0.060 mg/L for TTHMs or 0.045 mg/L for HAA5.

(-b-) For systems serving fewer than 10,000 persons that have an annual TTHM average that is no greater than 0.040 mg/L and an annual HAA5 average that is no greater than 0.030 mg/L for 2 consecutive years or an annual TTHM average that is no greater than

0.020 mg/L and an annual HAA5 average that is no greater than 0.015 mg/L for 1 year, the required monitoring is reduced to one sample per 3-year cycle per treatment plant. The sample shall be taken at a location that represents a maximum residence time during the month of warmest water temperature. The 3-year period shall begin on January 1 following the quarter in which the system qualifies for reduced monitoring. If the TTHM annual average exceeds 0.060 mg/L, or the HAA5 annual average exceeds 0.045 mg/L the system shall resume routine monitoring as prescribed in clause (A), except that systems that exceed either a TTHM or HAA5 MCL shall increase monitoring to at least one sample per quarter per treatment plant beginning in the quarter immediately following the quarter in which the system exceeds the TTHM or HAA5 MCL.

(ii) *TTHM and HAA5 Stage 2 DBP Rule.*

(A) *Applicability and schedule.*

(I) Community water systems and nontransient noncommunity water systems using a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light shall monitor for compliance with the MCLs based on the LRAA for TTHM and HAA5. Any system that is part of a combined distribution system shall comply at the same time as the system with the earliest compliance date in the combined distribution system. Systems shall comply with this subparagraph as follows:

(-a-) Systems serving 100,000 or more people begin April 1, 2012.

(-b-) Systems serving from 50,000 to 99,999 people begin October 1, 2012.

(-c-) Systems serving from 10,000 to 49,999 people begin October 1, 2013.

(-d-) Systems serving less than 10,000 people:

(-1-) Begin October 1, 2013, if no *Cryptosporidium* monitoring is required under §§ 109.1201—109.1204.

(-2-) Begin October 1, 2014, if *Cryptosporidium* monitoring is required under §§ 109.1201—109.1204.

(II) For the purpose of the schedule under this subparagraph, the Department may determine that the combined distribution system does not include certain consecutive water systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The Department may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive water system

only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive water system.

(III) All systems monitoring under this paragraph shall comply with subparagraph (i) until the dates specified in this subparagraph.

(B) *Routine monitoring.*

(I) A system that submitted an IDSE report shall begin monitoring at the locations and months recommended in the IDSE report unless the Department notifies the system that other locations or additional locations are required. A system that submitted a 40/30 certification, or qualified for a very small system waiver or a nontransient noncommunity water system serving less than 10,000, shall monitor at the locations and dates identified in its Stage 2 DBP rule monitoring plan following the schedule in § 109.701(g)(2)(ii) (relating to reporting and record-keeping).

(II) A system required to conduct quarterly monitoring shall begin monitoring in the first full calendar quarter that includes the compliance date specified in clause (A). A system required to conduct monitoring at frequencies less than quarterly shall begin monitoring in the calendar month recommended in the IDSE report in accordance with 40 CFR 141.601 and 141.602 (relating to standard monitoring; and system specific studies) as incorporated by reference or the calendar month identified in the Stage 2 DBP rule monitoring plan no later than 12 months after the applicable compliance date under clause (A).

(III) Monitoring shall be conducted at no fewer than the number of locations identified in the table under subclauses (IV) and (V). All systems shall monitor during the month of highest DBP concentrations. Systems on quarterly monitoring shall sample every 90 days at each monitoring location. Sampling at each monitoring location shall be conducted as follows:

(-a-) Systems using surface water or GUDI sources serving a population greater than 3,300 and systems using groundwater sources serving a population of 500 or greater shall take dual sample sets at each monitoring location.

(-b-) Systems using surface water or GUDI sources serving a population of 3,300 or less and systems using groundwater sources serving a population less than 500 shall take individual TTHM and HAA5 samples at the locations with the highest TTHM and HAA5 concentrations, respectively.

(-c-) Systems serving a population less than 500 may take a dual sample set at one location per monitoring period if the highest TTHM and HAA5 concentrations occur at the same location and during the same month.

(IV) Community water systems and nontransient noncommunity water systems using surface water or GUDI sources shall monitor as follows:

<i>Population size</i>	<i>Monitoring frequencies</i>	<i>Distribution system monitoring location total per monitoring period</i>
< 500	Annually	2
500—3,300	Quarterly	2
3,301—9,999	Quarterly	2
10,000—49,999	Quarterly	4
50,000—249,999	Quarterly	8
250,000—999,999	Quarterly	12
1,000,000—4,999,999	Quarterly	16
≥ 5,000,000	Quarterly	20

(V) Community water systems and nontransient noncommunity water systems using groundwater sources shall monitor as follows:

<i>Population size</i>	<i>Monitoring frequencies</i>	<i>Distribution system monitoring location total per monitoring period</i>
< 500	Annually	2
500—9,999	Annually	2
10,000—99,999	Quarterly	4
100,000—499,999	Quarterly	6
≥ 500,000	Quarterly	8

(VI) An undisinfected system that begins using a disinfectant other than UV light after the dates under 40 CFR 141.600 (relating to general requirements) as incorporated by reference for complying with the IDSE requirements, shall consult with the Department to identify compliance monitoring locations. The system shall develop a monitoring plan under § 109.701(g)(2)(ii) that includes those monitoring locations.

(VII) Systems shall use analytical techniques adopted by the EPA under the Federal act for TTHM and HAA5 analyses. Laboratories that have received accreditation by the Department shall conduct analyses.

(C) *Reduced monitoring.*

(I) Systems may reduce monitoring to the level specified in the table under subclauses (II) and (III) if, after at least 4 consecutive quarters, the LRAA is equal to or less than 0.040 mg/L for TTHM and equal to or less than 0.030 mg/L for HAA5 at all monitoring locations. Only data collected under subparagraph (i) and this subparagraph may be used

to qualify for reduced monitoring. Systems with surface water or GUDI sources shall also take monthly TOC samples every 30 days at a location prior to any treatment, to qualify for reduced monitoring for TTHM and HAA5 under this clause. In addition to meeting other criteria for reduced monitoring in this clause, the source water TOC running annual average (based on the most recent 4 quarters of monitoring) must be equal to or less than 4.0 mg/L on continuing basis at each treatment plant to reduce monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5 under this clause, a system may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location prior to any treatment.

(II) Community water systems and nontransient noncommunity water systems using surface water or GUDI sources may reduce monitoring as follows:

<i>Population size</i>	<i>Monitoring frequencies</i>	<i>Distribution system monitoring location total per monitoring period</i>
< 500	Monitoring may not be reduced	
500—3,300	Annually	1 TTHM and 1 HAA5 sample: 1 at the location and during the quarter with the highest TTHM single measurement, 1 at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
3,301—9,999	Annually	2 dual sample sets: 1 at the location and during the quarter with the highest TTHM single measurement, 1 at the location and during the quarter with the highest HAA5 single measurement.
10,000—49,999	Quarterly	2 dual sample sets at the locations with the highest TTHM and the highest HAA5 LRAAs.
50,000—249,999	Quarterly	4 dual sample sets at the locations with two highest TTHM and two highest HAA5 LRAAs.
250,000—999,999	Quarterly	6 dual sample sets at the locations with the three highest TTHM and the three highest HAA5 LRAAs.
1,000,000—4,999,999	Quarterly	8 dual sample sets at the location with the four highest TTHM and four highest HAA5 LRAAs.

<i>Population size</i>	<i>Monitoring frequencies</i>	<i>Distribution system monitoring location total per monitoring period</i>
≥ 5,000,000	Quarterly	10 dual sample sets at the locations with the five highest TTHM and five highest HAA5 LRAAs.

(III) Community water systems and nontransient noncommunity water systems using groundwater sources may reduce monitoring as follows:

<i>Population size</i>	<i>Monitoring frequencies</i>	<i>Distribution system monitoring location total per monitoring period</i>
< 500	Every third year	1 TTHM and 1 HAA5 sample: 1 at the location and during the quarter with the highest TTHM single measurement; 1 at the location and during quarter with highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
500—9,999	Annually	1 TTHM and 1 HAA5 sample: 1 at the location and during the quarter with highest TTHM single measurement; 1 at the location during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
10,000—99,999	Annually	2 dual sample sets: 1 at the location and during the quarter with the highest TTHM single measurement; 1 at the location and during the quarter with the highest HAA5 single measurement.
100,000—499,999	Quarterly	2 dual sample sets at the locations with the highest TTHM and highest HAA5 LRAAs.
≥ 500,000	Quarterly	4 dual sample sets at the locations with the two highest TTHM and two highest HAA5 LRAAs.

(IV) Systems on reduced quarterly monitoring may remain on reduced monitoring as long as the TTHM LRAA is equal to or less than 0.040 mg/L and the HAA5 LRAA is equal to or less than 0.030 mg/L at each monitoring location. Systems on reduced annual or less frequent monitoring may remain on reduced monitoring as long as each TTHM sample result is equal to or less than 0.060 mg/L and each HAA5 sample result is equal to or less than 0.045 mg/L. In addition, the source water TOC running annual average (based on the most recent 4 quarters of

monitoring) from samples collected every 90 days at a location prior to any treatment must be equal to or less than 4.0 mg/L at each treatment plant treating surface water or GUDI sources.

(V) If the LRAA based on quarterly monitoring at any monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 or if the annual (or less frequent) sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5, or if the source water annual average TOC level, before any treatment, is greater than 4.0 mg/L at any treatment plant treating surface water or GUDI sources, the system shall resume routine monitoring under clause (B) or begin increased monitoring if clause (D)(I) applies.

(VI) The Department retains the right to require a system that meets the requirements of this clause to resume routine monitoring.

(VII) A system may remain on reduced monitoring after the dates identified in clause (A) for compliance with this subparagraph only if the criteria specified in items (-a)—(-c-) are met. If any condition is not met, the system shall resume routine monitoring as specified in clause (B) by the dates specified in clause (A).

(-a-) The system qualified for a 40/30 certification under 40 CFR 141.603 (relating to 40/30 certification) as incorporated by reference or has received a very small system waiver under 40 CFR 141.604 (relating to very small system waivers) as incorporated by reference.

(-b-) The system meets the reduced monitoring criteria in this clause.

(-c-) The system has not changed or added monitoring locations from those used for compliance monitoring in subparagraph (i).

(D) *Increased monitoring.*

(I) Systems that are required to monitor at a particular location annually or less frequently than annually under clause (B) or (C) shall increase monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if any single TTHM sample result is greater than 0.080 mg/L or any single HAA5 sample result is greater than 0.060 mg/L at any location.

(II) A system may return to routine monitoring once it has conducted increased monitoring for at least 4 consecutive quarters and the LRAA for every monitoring location is equal to or less than 0.060 mg/L for TTHM and is equal to or less than 0.045 mg/L for HAA5.

(III) Systems on increased monitoring under subparagraph (i) shall remain on increased monitoring until they qualify for a return to routine monitoring under subclause (II). Systems shall conduct increased monitoring under subclause (I) at the monitoring locations in the monitoring plan developed under § 109.701(g)(2)(ii) beginning at the date identi-

fied in clause (A) for compliance with this subparagraph and remain on increased monitoring until they qualify for a return to routine monitoring under subclause (II).

(E) *General monitoring and compliance requirements.*

(I) A system required to monitor quarterly shall calculate LRAAs for TTHM and HAA5 using monitoring results collected under this subparagraph and determine that each LRAA does not exceed the MCL. A system that fails to complete four consecutive quarters of monitoring, shall calculate compliance with the MCL based on the average of the available data from the most recent 4 quarters. A system that takes more than one sample per quarter at a monitoring location shall average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.

(II) A system required to monitor yearly or less frequently shall determine that each sample result is less than the MCL. If any single sample result exceeds the MCL, the system shall comply with the requirements of clause (D). If no sample result exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.

(III) A system required to conduct quarterly monitoring, shall make compliance calculations at the end of the 4th calendar quarter that follows the compliance date (or earlier if the LRAA calculated based on fewer than 4 quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters) and at the end of each subsequent calendar quarter. A system required to conduct monitoring at a frequency that is less than quarterly shall make compliance calculations beginning with the first compliance sample taken after the compliance date.

(IV) A system is in violation of the MCL when the LRAA at any location exceeds the MCL for TTHM or HAA5, calculated as specified in subclause (I), or the LRAA calculated based on fewer than 4 quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters. A system is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if it fails to monitor.

(iii) *Chlorite.* Community water systems and nontransient noncommunity water systems that use chlorine dioxide for disinfection or oxidation shall monitor for chlorite.

(A) *Routine monitoring.*

(I) *Daily monitoring.* Systems shall take daily samples at the entrance to the distribution system. Systems that must conduct additional monitoring in accordance with clause (B) shall continue to take routine daily samples at the entrance to the distribution system.

(II) *Monthly monitoring.*

(-a-) Systems shall take a three-sample set each month in the distribution system. The system shall take one sample at each of the following locations:

- (-1-) As close to the first customer as possible.
- (-2-) At a location representing an average residence time.
- (-3-) At a location representing a maximum residence time.

(-b-) Systems that must conduct additional monitoring in accordance with subclause (III) may use the results of the additional monitoring to meet the monthly monitoring requirements of this subclause.

(III) *Additional monitoring.* If a daily sample at the entrance to the distribution system exceeds the chlorite MCL, the system shall take three samples in the distribution system on the following day. The system shall take one sample at each of the following locations:

- (-a-) As close to the first customer as possible.
- (-b-) At a location representing an average residence time.
- (-c-) At a location representing a maximum residence time.

(B) *Reduced monitoring.* Chlorite monitoring in the distribution system required by clause (A)(II) is reduced to one three-sample set per quarter after 1 year of monitoring where no individual chlorite sample taken in the distribution system under clause (A)(II) has exceeded the chlorite MCL and the system has not been required to conduct additional monitoring under clause (A)(III). If any of the three individual chlorite samples taken quarterly in the distribution system exceeds the chlorite MCL or the system is required to conduct additional monitoring under clause (A)(III), the system shall revert to routine monitoring as prescribed by clause (A).

(iv) *Bromate.* Community water systems and nontransient noncommunity water systems that use ozone for disinfection or oxidation shall monitor for bromate.

(A) *Routine monitoring.* Systems shall take one sample per month for each treatment plant that uses ozone. Systems shall take the monthly sample at the entrance to the distribution system while the ozonation system is operating under normal conditions.

(B) *Reduced monitoring.*

(I) Until March 31, 2009, systems that have an average source water bromide concentration that is less than 0.05 mg/L based upon representative monthly bromide measurements for 1 year, the required monitoring is reduced from monthly to quarterly. Systems on reduced monitoring shall continue to take monthly samples for source water bromide. If the running annual average source water bromide concentration, computed quarterly, equals or exceeds 0.05 mg/L based upon representative monthly measurements, the system shall revert to routine monitoring as prescribed by clause (A).

(II) Beginning April 1, 2009, a system required to analyze for bromate may reduce monitoring from monthly to quarterly, if the system's running annual average bromate concentration computed quarterly is less than or equal to 0.0025 mg/L based on monthly measurements as prescribed in clause (A) analyzed using methods specified in 40 CFR 141.132(b)(3)(ii)(B) for the most recent 4 quarters. Systems qualifying for reduced bromate monitoring under subclause (I) may remain on reduced monitoring as long as the running annual average of quarterly bromate samples analyzed using methods specified in 40 CFR 141.132(b)(3)(ii)(B) is less than or equal to 0.0025 mg/L. If the running annual average bromate concentration is greater than 0.0025 mg/L, the system shall resume routine monitoring as prescribed under clause (A).

(v) *DBP precursors.* Community water systems and nontransient non-community water systems that use either surface water or GUDI sources and that use conventional filtration shall monitor for disinfection byproduct precursors.

(A) *Routine monitoring.* Systems shall take monthly samples of the source water alkalinity, the source water TOC and postsedimentation TOC for each treatment plant that uses conventional filtration. Postsedimentation TOC can be taken at any point between sedimentation effluent and the entry point to the distribution system. The three samples shall be taken concurrently and at a time that is representative of both normal operating conditions and influent water quality.

(B) *Reduced monitoring.* For systems with an average postsedimentation TOC of less than 2.0 mg/L for 2-consecutive years, or less than 1.0 mg/L for 1 year, the required monitoring for source water alkalinity, source TOC and postsedimentation TOC is reduced from monthly to quarterly for each applicable treatment plant. The system shall revert to routine monitoring as prescribed by clause (A) in the month following the quarter when the annual average postsedimentation TOC is not less than 2.0 mg/L.

(C) *Early monitoring.* Systems may begin monitoring to determine whether the TOC removal requirements of 40 CFR 141.135(b)(1) (relating to treatment technique for control of disinfection byproduct (DBP) precursors) can be met 12 months prior to the compliance date for the system. This monitoring is not required and failure to monitor during this period is not a violation. However, any system that does not monitor during this period, and then determines in the first 12 months after the compliance date that it is not able to meet the requirements of 40 CFR 141.135(b)(1) and shall therefore apply for alternate minimum TOC removal requirements under 40 CFR 141.135(b)(4) is not eligible for retroactive approval of the alternate minimum TOC removal requirements and is in violation. Systems may apply for alternate minimum TOC removal requirements any time after the compliance date.

(13) *Monitoring requirements for disinfectant residuals.* Community water systems and nontransient noncommunity water systems that use either chlorine or chloramines or that obtain finished water from another public water system that uses either chlorine or chloramines, and transient noncommunity water systems that install chemical disinfection treatment in accordance with § 109.1302(b) (relating to treatment technique requirements) shall monitor for residual disinfectant concentration in accordance with this paragraph. Community water systems, nontransient noncommunity water systems and transient noncommunity water systems that use chlorine dioxide to treat the finished water shall monitor for chlorine dioxide in accordance with this paragraph. Systems monitoring for residual disinfectant concentration shall take all samples during normal operating conditions. Compliance with the MRDLs and monitoring requirements for chlorine, chloramines and chlorine dioxide (where applicable) shall be determined in accordance with 40 CFR 141.132 and 141.133 which are incorporated herein by reference. Compliance with the minimum residual disinfectant concentration shall be determined in accordance with § 109.710.

(i) *Chlorine and chloramines.*

(A) Until April 28, 2019, systems shall measure the residual disinfectant level at the same points in the distribution system and at the same time that total coliforms are sampled, as specified in paragraph (3). Systems that used either surface water or GUDI sources may use the results of residual disinfectant concentration sampling conducted under paragraph (1) or (2) in lieu of taking separate samples.

(B) Beginning April 29, 2019, systems shall measure the residual disinfectant concentration in accordance with a sample siting plan as specified in § 109.701(a)(8) and as follows:

(I) Public water systems shall monitor the residual disinfectant concentration at the same time and from the same location that a total coliform sample is collected as specified in paragraph (3)(i) and (ii). Systems that use either surface water or GUDI sources may use the results of residual disinfectant concentration sampling conducted under paragraph (1) or (2) instead of taking separate samples. Measurements taken under this clause may be used to meet the requirements under subclause (II).

(II) Public water systems shall monitor the residual disinfectant concentration at representative locations in the distribution system at least once per week.

(III) A public water system that does not maintain the minimum residual disinfectant concentration specified in § 109.710 at one or more sample sites shall include those sample sites in the monitoring conducted the following month.

(IV) Compliance with the minimum residual disinfectant concentration shall be determined in accordance with § 109.710.

(V) A public water system may substitute online residual disinfectant concentration monitoring and recording for grab sample monitoring and manual recording if it validates the online measurement for accuracy in accordance with § 109.304.

(ii) *Chlorine dioxide.*

(A) *Routine monitoring.* Systems shall take one sample per day at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the system shall conduct additional monitoring as specified in clause (B) in addition to the sample required at the entrance to the distribution system.

(B) *Additional monitoring.* If a daily sample at the entrance to the distribution system exceeds the chlorine dioxide MRDL, the system shall take three samples in the distribution system on the following day. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfectant addition points after the entrance to the distribution system, the system shall take three samples as close to the first customer as possible, at intervals of at least 6 hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system, the system shall take one sample at each of the following locations:

- (I) As close to the first customer as possible.
- (II) At a location representing an average residence time.
- (III) At a location representing a maximum residence time.

(14) *Monitoring requirements for radionuclides.* Community water systems shall monitor for compliance with the MCLs for radionuclides established by the EPA under 40 CFR 141.66(b), (c), (d) and (e) (relating to maximum contaminant levels for radionuclides). The monitoring shall be conducted according to the requirements established by the EPA under 40 CFR 141.25 and 141.26 (relating to analytical methods for radioactivity; and monitoring frequency and compliance requirements for radionuclides in community water systems) which are incorporated by reference, except as modified by this chapter. Initial or first-year monitoring mentioned in this paragraph refers to monitoring conducted on or after January 1, 2005.

(i) *Monitoring requirements for gross alpha particle activity, radium-226, radium-228 and uranium.*

(A) *Initial monitoring schedule.* The initial monitoring shall consist of 4 consecutive quarterly samples for each radionuclide at each entry point

in accordance with the following monitoring schedule except for systems that are granted reduced initial monitoring in accordance with subclause (V).

(I) Systems serving more than 3,300 persons shall begin monitoring during the quarter beginning January 1, 2005.

(II) Systems serving 500 to 3,300 persons shall begin monitoring during the quarter beginning January 1, 2006.

(III) Systems serving fewer than 500 persons shall begin monitoring during the quarter beginning January 1, 2007.

(IV) Systems that add new entry points associated with new sources shall conduct initial quarterly monitoring beginning the first full quarter the entry point begins serving the public. Quarterly monitoring shall continue until reduced monitoring is granted in accordance with clause (B) or subclause (V).

(V) If the first 2 quarterly samples for a radionuclide at an entry point have results below the detection limit, as defined in 40 CFR 141.25(c)(1), the final 2 quarterly samples for that radionuclide at that entry point are waived.

(VI) For entry points at which the average of the initial monitoring results for a radionuclide is above the MCL, the system shall collect and analyze quarterly samples for that radionuclide at that entry point until the system has results from 4 consecutive quarters for that radionuclide at that entry point that are at or below the MCL.

(B) *Repeat monitoring.* Beginning with the January 1, 2008, compliance period, systems shall take one sample for each radionuclide at each entry point in each 3-year compliance period, unless the system qualifies for reduced monitoring as follows:

(I) For entry points where the average of the initial monitoring results for a radionuclide is at or above the detection limit as defined in 40 CFR 141.25(c)(1), but at or below one-half of the MCL for that radionuclide, the repeat monitoring is reduced to one sample for that radionuclide at that entry point every 6 years.

(II) For entry points where the average of the initial monitoring results for a radionuclide is below the detection limit as defined in 40 CFR 141.25(c)(1), the repeat monitoring is reduced to one sample for that radionuclide at that entry point every 9 years.

(III) If a system has a monitoring result that exceeds the MCL for a radionuclide, the system shall collect and analyze quarterly samples for that radionuclide at that entry point beginning the next calendar quarter following the exceedance until the system has results from 4 consecutive quarters for that radionuclide at that entry point that are below the MCL.

(IV) Systems shall use the results of the samples collected during the repeat monitoring period to determine the monitoring frequency for subsequent monitoring periods.

(V) Reduced monitoring does not apply to those systems where treatment has been installed for radionuclide removal to comply with an MCL listed under 40 CFR 141.66. Compliance monitoring for radionuclides where treatment has been installed to comply with an MCL shall be conducted at least annually, and performance monitoring for the specific radionuclides for which treatment is provided shall be conducted quarterly.

(C) *Gross alpha substitution.* A gross alpha particle activity measurement may be substituted for the required radium-226 measurement provided that the measured gross alpha particle activity does not exceed 5 pCi/L. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/L. The gross alpha measurement shall have a confidence interval of 95% (1.65σ , where σ is the standard deviation of the net counting rate of the sample) for radium-226 and uranium. If the gross alpha particle activity result is less than the detection limit as defined in 40 CFR 141.25(c)(1), one-half of the detection limit will be used to determine compliance and the future monitoring frequency.

(D) *Grandfathering.* The Department will allow appropriate historical data collected at an entry point to satisfy the initial monitoring requirements required under clause (A) for that entry point in the following situations:

(I) A system having only one entry point may use the monitoring data from the compliance monitoring period between June 2000 and December 8, 2003.

(II) A system with multiple entry points and having appropriate historical data for each entry point may use the monitoring data from the compliance monitoring period between June 2000 and December 8, 2003.

(III) A system with multiple entry points and having appropriate historical data for a representative point in the distribution system may use the monitoring data from the compliance monitoring period between June 2000 and December 8, 2003, provided that the Department finds that the appropriate historical data satisfactorily demonstrate that each entry point is expected to be in compliance based upon the appropriate historical data and reasonable assumptions about the variability of radionuclide levels between entry points. The system shall supply sufficient information to allow the Department to make a written finding indicating how the data conform to these requirements.

(ii) *Monitoring requirements for beta-particle and photon radioactivity.*

(A) Systems designated by the Department as vulnerable to beta-particle or photon radioactivity, or both, shall sample for beta particle and photon radioactivity. Systems shall collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point, beginning within 1 quarter after being notified by the Department.

(I) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at an entry point has a running annual average (computed quarterly) less than or equal to 50 pCi/L (screening level), the frequency of monitoring at that entry point shall be repeated every 3 years. Systems shall collect all samples required in clause (A) during the reduced monitoring period.

(II) For systems in the vicinity of a nuclear facility, the system may utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry points, when the Department determines that the data is applicable to the system. If there is a release from a nuclear facility, systems that are using surveillance data shall begin monitoring at the community water system's entry points in accordance with clause (A).

(B) Systems designated by the Department as utilizing waters contaminated by effluents from nuclear facilities shall sample for beta particle and photon radioactivity. Systems shall monitor quarterly for beta emitters and iodine-131, and annually for tritium and strontium-90 at each entry point, beginning within 1 quarter after being notified by the Department. Monitoring shall be conducted as follows:

(I) Monitoring for gross beta particle activity shall be based on the average of an analysis of 3 monthly samples.

(II) For iodine-131, a composite of five consecutive daily samples shall be analyzed once each quarter. More frequent monitoring, as determined by the Department, shall be conducted when iodine-131 is identified in the finished water.

(III) Monitoring for strontium-90 and tritium shall be conducted by means of the analysis of 4 quarterly samples.

(IV) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at an entry point has a running annual average (computed quarterly) less than or equal to 15 pCi/L (screening level), the frequency of monitoring at that entry point shall be reduced to four consecutive quarterly samples taken once every 3 years. Systems shall collect all samples required in clause (B) during the reduced monitoring period.

(V) For systems in the vicinity of a nuclear facility, the system may utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry points, when the Department determines that the data is applicable to the system. If there

is a release from a nuclear facility, systems that are using surveillance data shall begin monitoring at the system's entry points in accordance with clause (B).

(C) Systems designated by the Department to monitor for beta particle and photon radioactivity may not apply to the State for a waiver from the monitoring frequencies specified in clause (A) or (B).

(D) Systems may analyze for naturally occurring potassium-40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. The potassium-40 beta particle activity shall be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

(E) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the screening level, an analysis of the sample shall be performed to identify the major radioactive constituents present in the sample. The results of the individual constituent analysis shall be reported in pCi/L, and the appropriate doses must be calculated and summed to determine compliance with the MCL, using the formula in 40 CFR 141.66(d)(2). Doses shall also be calculated and combined for measured levels of tritium and strontium to determine compliance.

(F) Systems shall monitor monthly at the entry points that exceed the MCL beginning the month after the exceedance occurs. Systems shall continue monthly monitoring until the system has established, by a rolling average of three monthly samples, that the MCL is being met. Systems that establish that the MCL is being met shall return to quarterly monitoring until they meet the requirements set forth in subclause (A)(I) or (B)(IV).

(iii) *General monitoring and compliance requirements.*

(A) The Department may require more frequent sampling than specified in subparagraphs (i) and (ii), or may require confirmation samples. The results of the initial and confirmation samples will be averaged for use in compliance determinations.

(B) Each system shall monitor at the time designated by the Department during each compliance period.

(C) Compliance with the MCLs will be determined based on the analytical results obtained at each entry point. If one entry point is in violation of an MCL, the system is in violation of the MCL.

(I) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each entry point. If the running annual average at an entry point is greater than the MCL, the system is in violation of the MCL. If a sample result will cause the running annual average to exceed the MCL at an entry point, the system is in violation of the MCL immediately.

(II) Systems shall include all samples taken and analyzed under this section in determining compliance, even if that number is greater than the minimum required.

(III) If a system does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.

(IV) If a sample result is less than the detection limit, zero will be used to calculate the annual average, unless a gross alpha particle activ-

ity is being used in lieu of radium-226 or uranium, or both. If the gross alpha particle activity result is less than detection, one-half of the detection limit will be used to calculate the annual average.

(D) The Department may delete results of obvious sampling or analytic errors.

Authority

The provisions of this § 109.301 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.301 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended March 24, 1989, effective March 25, 1989, 19 Pa.B. 1289; amended June 16, 1989, effective June 17, 1989, 19 Pa.B. 2543; corrected July 28, 1989, effective June 17, 1989, 19 Pa.B. 3164; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; corrected March 10, 1995, effective March 11, 1995, 25 Pa.B. 833; amended April 23, 1999, effective April 24, 1999, 29 Pa.B. 2231; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895 and 3938; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; corrected December 5, 2003, effective August 10, 2002, 33 Pa.B. 5916; amended April 2, 2004, effective April 3, 2004, 34 Pa.B. 1762; amended June 18, 2004, effective June 19, 2004, 34 Pa.B. 3130; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383402) to (383413), (345295) to (345304), (347055) to (347072) and (383415) to (383416).

Cross References

This section cited in 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.302 (relating to special monitoring requirements); 25 Pa. Code § 109.303 (relating to sampling requirements); 25 Pa. Code § 109.305 (relating to fees); 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.503 (relating to public water system construction permits); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.703 (relating to facilities operation); 25 Pa. Code § 109.710 (relating to disinfectant residual in the distribution system); 25 Pa. Code § 109.714 (relating to filter profile, filter self-assessment and comprehensive performance evaluations); 25 Pa. Code § 109.810 (relating to reporting and notification requirements); and 25 Pa. Code § 109.1003 (relating to monitoring requirements); and 25 Pa. Code § 109.1204 (relating to requirements for microbial toolbox components).

§ 109.302. Special monitoring requirements.

(a) The Department may require a public water supplier to conduct monitoring in addition to that required by § 109.301 (relating to general monitoring requirements) if the Department has reason to believe the public water system is not in compliance with the MCL, MRDL or treatment technique requirement for the contaminant.

(b) The Department may require a public water supplier to conduct additional monitoring to provide information on contamination of the water supply where a potential health hazard may exist in the water supply and monitoring required under § 109.301 may not be adequate to protect the public health.

(c) The Department may require a public water supplier to conduct special monitoring for an unregulated contaminant if the Department has reason to believe the contaminant is present in the public water system and creates a health risk to the users of the public water system.

(d) The Department will provide a schedule for sampling, instructions for sampling methods and handling samples, and analytical procedures to be followed by public water systems required to perform special monitoring.

(e) The Department may designate special monitoring requirements on a case-by-case basis for experimental facilities.

(f) To enable the Department to determine if a public water supplier is using a source directly influenced by surface water, the Department may require a public water supplier to conduct monitoring to evaluate the direct influence of surface water upon the source of supply. Monitoring shall be conducted for at least 6 months to include both the wet and dry periods of the year. Samples shall be taken from the collection facilities and measurements shall include the following:

- (1) Daily field measurement of temperature, pH, specific conductance and turbidity.
- (2) Daily measurement of water level, or flow, and precipitation necessary to establish climatic conditions.
- (3) Weekly measurements for total coliform.
- (4) Other measurements as required by the Department to evaluate the direct influence of surface water upon the source of supply.

(g) The Department may reduce or eliminate the monitoring required by subsection (f) if the public water supplier demonstrates and the Department determines that the source of supply is not directly influenced by surface water.

Source

The provisions of this § 109.302 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended June 16, 1989, effective June 17, 1989, 19 Pa.B. 2543; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894. Immediately preceding text appears at serial pages (281872) to (281873).

Cross References

This section cited in 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.303 (relating to sampling requirements); 25 Pa. Code § 109.305 (relating to fees); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); and 25 Pa. Code § 109.1003 (relating to monitoring requirements).

§ 109.303. Sampling requirements.

(a) The samples taken to determine a public water system's compliance with MCLs or MRDLs or to determine compliance with monitoring requirements shall be taken at the locations identified in §§ 109.301 and 109.302 (relating to general monitoring requirements; and special monitoring requirements), or as follows:

- (1) Samples for determining compliance with the turbidity MCL shall be taken at each entry point associated with a surface water source that the Department has determined shall be filtered.

(2) Samples for determining compliance with the *E. coli* MCL under § 109.202(a)(2) (relating to State MCLs, MRDLs and treatment technique requirements) and for determining whether an assessment is triggered under § 109.202(c)(4) shall be taken at regular intervals throughout the monitoring period at sites which are representative of water throughout the distribution system according to a written sample siting plan as specified under § 109.701(a)(5) (relating to reporting and recordkeeping). Representative locations include, but are not limited to, the following:

- (i) Dead ends.
- (ii) First service connection.
- (iii) Finished water storage facilities.
- (iv) Interconnections with other public water systems.
- (v) Areas of high water age.
- (vi) Areas with previous coliform detections.

(3) Samples for determining compliance with the fluoride MCL shall be taken at each entry point.

(4) Samples for determining compliance with MCLs for organic contaminants listed by the EPA under 40 CFR 141.61 (relating to maximum contaminant levels for organic contaminants) and inorganic contaminants listed by the EPA under 40 CFR 141.62 (relating to maximum contaminant levels (MCLs) for inorganic contaminants) and with the special monitoring requirements for unregulated contaminants under § 109.302(f) shall be taken at each entry point to the distribution system after an application of treatment during periods of normal operating conditions. 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 the water is representative of combined sources being used during normal operating conditions.

(5) Asbestos sampling points shall be at the distribution tap where asbestos contamination is expected to be the greatest based on the presence of asbestos cement pipe and lack of optimum corrosion control treatment, and at the entry point for each source which the Department has reason to believe may contain asbestos, except that a collected distribution sample which is representative of a source may be substituted for a required entry point sample.

(b) The samples taken to determine a public water system's compliance with treatment technique and performance monitoring requirements shall be taken at a point that is as close as practicable to each treatment technique process and that is not influenced by subsequent treatment processes or appurtenances.

(c) Public water suppliers shall assure that samples for laboratory analysis are properly collected and preserved, are collected in proper containers, do not exceed maximum holding times between collection and analysis and are handled in accordance with guidelines governing quality control which may be established by the Department. A public water supplier who utilizes an accredited laboratory for sample collection as well as analysis satisfies the requirements of this subsection.

(d) Compliance monitoring samples for the VOCs listed under 40 CFR 141.61(a) shall be collected by a person properly trained by a laboratory accredited by the Department to conduct VOC or vinyl chloride analysis.

(e) Compliance monitoring samples for the contaminants listed under 40 CFR 141.40(a), 141.61(a) and (c), 141.62 and 141.88 may be composited in accor-

dance with 40 CFR 141.23(a)(4), 141.24(f)(14) and (h)(10) and 141.88(a)(1)(iv) (relating to inorganic chemical sampling and analytical requirements; organic chemicals, sampling and analytical requirements; and monitoring requirements for lead and copper in source water) except:

(1) Samples from groundwater entry points may not be composited with samples from surface water entry points.

(2) Samples used in compositing shall be collected in duplicate.

(3) If a contaminant listed under 40 CFR 141.61(a) or (c) is detected at an entry point, samples from that entry point may not be composited for subsequent or repeat monitoring requirements.

(4) Samples obtained from an entry point which contains water treated by a community water supplier or a nontransient noncommunity water supplier to specifically meet an MCL for an organic contaminant listed under 40 CFR 141.61(a) or (c) or an MCL for an inorganic contaminant listed under 40 CFR 141.62 may not be composited with other entry point samples.

(f) A compliance sample required under § 109.301(9) shall be taken at a free flowing tap in the house, building or facility where the POE device is located or at a monitoring point approved by the Department on the effluent side of the POE device.

(g) Samples taken to determine compliance with combined radium-226 and radium-228, gross alpha particle activity, or uranium under 40 CFR 141.66(b), (c) and (e) (relating to maximum contaminant levels for radionuclides) may be composited from a single entry point if the analysis is done within 1 year of the date of the collection of the first sample. The Department will treat analytical results from the composited sample as the average analytical result to determine compliance with the MCLs and the future monitoring frequency.

(1) If the analytical result from the composited sample is greater than one-half the MCL, the Department may direct the system to take additional quarterly samples before allowing the system to sample under a reduced monitoring schedule.

(2) Samples obtained from an entry point that contains water treated to specifically meet an MCL for a radionuclide contaminant listed under 40 CFR 141.66(b), (c) or (e) may not be composited.

(h) Samples taken to determine compliance with beta particle and photon radioactivity under 40 CFR 141.66(d) may be composited as follows:

(1) Monitoring for gross beta-particle activity may be based on the analysis of a composite of 3 monthly samples.

(2) Monitoring for strontium-90 and tritium may be based on the analysis of a composite of 4 consecutive quarterly samples.

Authority

The provisions of this § 109.303 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.303 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended March 24, 1989, effective March 25, 1989, 19 Pa.B. 1289; amended June 16, 1989, effective June 17, 1989, 19 Pa.B. 2543; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended July 20, 2001, effective July 21, 2001,

31 Pa.B. 3895; amended April 2, 2004, effective April 3, 2004, 34 Pa.B. 1762; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383418) to (383420).

Cross References

This section cited in 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.503 (relating to public water system construction permits); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); and 25 Pa. Code § 109.1103 (relating to monitoring requirements).

§ 109.304. Analytical requirements.

(a) Sampling and analysis shall be performed in accordance with analytical techniques adopted by the EPA under the Federal act or methods approved by the Department.

(b) An alternate analytical technique may be employed with the written approval of the Department and the concurrence of the Administrator. An alternate technique will be accepted only if it is substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with MCLs or MRDLs or treatment technique requirements. The use of the alternate analytical technique may not decrease the frequency of monitoring required by this subchapter.

(c) For the purpose of determining compliance with the monitoring and analytical requirements established under this subchapter and Subchapters K, L and M (relating to lead and copper; long-term 2 enhanced surface water treatment rule; and additional requirements for groundwater sources), the Department will consider only samples analyzed by a laboratory accredited by the Department, except that measurements for turbidity, fluoridation operation, residual disinfectant concentration, temperature, pH, alkalinity, orthophosphates, silica, calcium, conductivity, daily chlorite, and magnesium hardness may be performed by a person meeting one of the following requirements:

(1) A person meeting the requirements of § 109.704 (relating to operator certification).

(2) A person using a standard operating procedure as provided under authority of the Water and Wastewater Systems Operators' Certification Act (63 P.S. §§ 1001—1015.1).

(3) An environmental laboratory meeting the requirements of Chapter 252 (relating to environmental laboratory accreditation).

(d) A system shall have *Cryptosporidium* samples analyzed by a laboratory that is approved under the EPA's Laboratory Quality Assurance Evaluation Program for Analysis of *Cryptosporidium* in Water or a laboratory that has been accredited for *Cryptosporidium* analysis by an equivalent Department laboratory accreditation program.

Source

The provisions of this § 109.304 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009,

effective August 1, 2009, 39 Pa.B. 5119, amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (345321) to (345322).

Cross References

This section cited in 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 252.6 (relating to accreditation-by-rule); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.1003 (relating to monitoring requirements); 25 Pa. Code § 109.1202 (relating to monitoring requirements); 25 Pa. Code § 109.1204 (relating to requirements for microbial toolbox components).

§ 109.305. Fees.

(a) *Data management fees.* Community water systems shall submit the following data management fees to the Department by December 31, 1995:

<i>System Size (population served)</i>	<i>Fee</i>
<100	\$ 120
100-1,000	\$ 120
1,001-3,300	\$ 240
3,301-10,000	\$ 360
10,001-50,000	\$ 600
>50,000	\$1,200

(b) *Waivers.* A request for a waiver from the monitoring requirements in §§ 109.301 and 109.302 (relating to general monitoring requirements; and special monitoring requirements) shall be accompanied by the appropriate fee as follows:

<i>System Size (population served)</i>	<i>Fee</i>
<100	\$ 100
100-1,000	\$ 200
1,001-3,300	\$ 400
3,301-10,000	\$ 500
10,001-50,000	\$1,000
>50,000	\$2,000

Fees will be based on system size, taking into consideration the following conditions:

- (1) For systems with one or more sources all in the same contribution area—for groundwater systems, the contribution area is the surface area overlying the portion of the aquifer through which water is diverted to a well or flows to a spring or infiltration gallery—the fee will be as indicated in this subsection.

(2) For systems with a single wellfield—one contribution area—the fee will be as indicated in this subsection.

(3) For systems with sources in two or more contribution areas, the fee will be as indicated in this subsection plus 1/2 of the system size fee as indicated in this subsection for each additional contribution area in which a source is located.

Source

The provisions of this § 109.305 adopted October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175.

Subchapter D. PUBLIC NOTIFICATION

Sec.

- 109.401. [Reserved].
- 109.402. [Reserved].
- 109.403. [Reserved].
- 109.404. [Reserved].
- 109.405. [Reserved].
- 109.406. [Reserved].
- 109.407. General public notification requirements.
- 109.408. Tier 1 public notice—categories, timing and delivery of notice.
- 109.409. Tier 2 public notice—categories, timing and delivery of notice.
- 109.410. Tier 3 public notice—categories, timing and delivery of notice.
- 109.411. Content of a public notice.
- 109.412. Special notice of the availability of unregulated contaminant monitoring results.
- 109.413. Special notice for nitrate exceedances above MCL by noncommunity water systems, when granted permission by the Department.
- 109.414. Notice to new billing units or new customers.
- 109.415. Notice by the Department on behalf of the public water system.
- 109.416. CCR requirements.
- 109.417. Special notice for significant deficiencies by noncommunity water systems.
- 109.418. Special notice for failure to conduct source water *Cryptosporidium* monitoring or failure to determine bin classification.

Cross References

This Subchapter D cited in 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.1004 (relating to public notification); and 25 Pa. Code § 109.1104 (relating to public education and notification).

§ 109.401. [Reserved].

Source

The provisions of this § 109.401 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended July 20, 2001, effective July 21, 2001, 31 Pa.B.

3895; reserved August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894. Immediately preceding text appears at serial pages (281877) to (281880).

§ 109.402. [Reserved].

Source

The provisions of this § 109.402 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; reserved August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894. Immediately preceding text appears at serial pages (281880) to (281881).

§ 109.403. [Reserved].

Source

The provisions of this § 109.403 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; reserved August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894. Immediately preceding text appears at serial pages (281881) to (281882).

§ 109.404. [Reserved].

Source

The provisions of this § 109.404 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; reserved August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894. Immediately preceding text appears at serial page (281882).

§ 109.405. [Reserved].

Source

The provisions of this § 109.405 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; reserved August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894. Immediately preceding text appears at serial pages (281882) to (281883).

§ 109.406. [Reserved].

Source

The provisions of this § 109.406 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; reserved August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894. Immediately preceding text appears at serial page (281883).

§ 109.407. General public notification requirements.

(a) *Violation categories and other situations requiring a public notice.* A public water supplier shall give public notice for the following circumstances:

- (1) Failure to comply with an applicable State primary MCL or MRDL in Subchapter B (relating to MCLs, MRDLs or treatment technique requirements).

(2) Failure to comply with a prescribed treatment technique requirement in Subchapter B, G, K, L or M.

(3) Failure to perform water quality monitoring, as required by Subchapter C (relating to monitoring requirements) or Subchapter K.

(4) Operation under a variance or an exemption under Subchapter I (relating to variances and exemptions issued by the Department).

(5) Failure to comply with the requirements of any schedule that has been set under a variance or exemption.

(6) Occurrence of a waterborne disease outbreak, as defined in § 109.1 (relating to definitions), or other emergency situation as defined in § 109.701(a)(3)(iii) (relating to reporting and recordkeeping) that adversely affects the quality or quantity of finished water and has a significant potential to have serious adverse effects on human health as a result of short-term exposure.

(7) Availability of unregulated contaminant monitoring data.

(8) Exceedance of the nitrate MCL by noncommunity water systems, when permitted by the Department in writing to exceed the MCL in accordance with 40 CFR 141.11(d) (relating to MCLs for inorganic contaminants).

(9) Other violations or situations determined by the Department to require a public notice under this subchapter.

(b) *Definition of public notice tiers.* Public notice requirements are divided into three tiers, to take into account the seriousness of the violation or situation and any potential adverse health effects that may be involved. The public notice requirements for each violation or situation identified in subsection (a) is determined by the tier to which it is assigned. This subchapter incorporates by reference the tier assignment for each specific violation or situation in the National Primary Drinking Water Regulations, 40 CFR Part 141, Subpart Q, Appendix A (relating to the tier assignment for each specific NPDWR violation and other situations requiring public notice), unless other tier assignments are established by regulation or order of the Department.

(1) *Tier 1 public notice.* Required for violations and situations specified in subsection (a) with significant potential to have serious adverse effects on human health as a result of short-term exposure. General violation categories and other situations requiring a Tier 1 public notice are specified in § 109.408(a) (relating to Tier 1 public notice—categories, timing and delivery).

(2) *Tier 2 public notice.* Required for all other violations and situations in subsection (a) with potential to have serious adverse effects on human health. General violation categories and other situations requiring a Tier 2 public notice are specified in § 109.409(a) (relating to Tier 2 public notice—categories, timing and delivery).

(3) *Tier 3 public notice.* Required for all other violations and situations in subsection (a) not included in Tier 1 and Tier 2. General violation categories

and other situations requiring a Tier 3 public notice are specified in § 109.410(a) (relating to Tier 3 public notice—categories, timing and delivery).

(c) *Public notice recipients.*

(1) A public water supplier shall provide public notice to persons served by the public water system, in accordance with this subchapter. A public water system that sells or otherwise provides drinking water to another public water system, such as to a consecutive water, bulk water hauling or vended water system, shall give public notice to the owner or operator of the other water system. The other water system is responsible for ensuring that public notice is provided to the persons it serves.

(2) If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Department may allow the water supplier to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance. Permission for limiting distribution of the notice will be granted in writing by the Department.

(3) If a public water system has a violation involving a point-of-entry (POE) device, the Department may allow the water supplier to limit distribution of the public notice to only persons served by that POE device. Permission for limiting distribution of the notice shall be granted in writing by the Department.

(4) If a community water system has a Tier 1 violation, the water supplier shall also notify additional recipients as designated in the community water system's emergency response plan under § 109.707(a)(2) (relating to emergency response plan).

(5) If a noncommunity water system in which persons 17 years of age or under are cared for or educated, such as a school or day care center, has a Tier 1 violation, the water supplier shall also provide public notice directly to the parent or guardian of those persons.

(6) A water supplier shall provide a copy of the notice to the Department in accordance with § 109.701(a)(4) (relating to reporting and recordkeeping).

(d) *Additional requirements.* Community water systems shall comply with the planning requirements specified under § 109.702(a)(7) (relating to operation and maintenance plan) and § 109.707.

Authority

The provisions of this § 109.407 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

109-78.3

Source

The provisions of this § 109.407 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended June 18, 2004, effective June 19, 2004, 34 Pa.B. 3130; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (344202) to (344204).

Cross References

This section cited in 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice); and 52 Pa. Code § 69.1601 (relating to general).

§ 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:

(1) Violation of the MCL for *E. coli*, as specified in § 109.202(a)(2) (relating to State MCLs, MRDLs and treatment technique requirements), or when the water supplier fails to test for *E. coli* when any check sample tests positive for coliforms, as specified in § 109.301(3) (relating to general monitoring requirements).

(2) Violation of the MCL for nitrate, nitrite or total nitrate and nitrite, as defined in § 109.202(a)(2), or when the water supplier fails to take a confirmation sample within 24 hours of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL, as specified in § 109.301(7)(ii)(C)(IV) and (V).

(3) Exceedance of the nitrate MCL by noncommunity water systems, when permitted by the Department in writing to exceed the MCL in accordance with 40 CFR 141.11(d) (relating to maximum contaminant levels for inorganic chemicals).

(4) Violation of the MRDL for chlorine dioxide, as defined in § 109.202(f)(2), when one or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water supplier does not take the required samples in the distribution system, as specified in § 109.301.

(5) Violation of the turbidity MCL of 5 NTU based on an average for 2 consecutive days by a public water system using an unfiltered surface water source, as specified in § 109.202(a)(2).

(6) Violation of a treatment technique requirement for pathogenic bacteria, viruses and protozoan cysts as defined in § 109.202(c), resulting from:

- (i) A single exceedance of the maximum allowable turbidity limit.
- (ii) A failure to meet the minimum log inactivation for more than 4 hours.
- (iii) A failure to maintain the minimum entry point residual disinfectant concentration for more than 4 hours and either of the following:

(A) A failure to calculate the log inactivation in accordance with § 109.301(1)(v) and (vi).

(B) A failure to meet the minimum log inactivation for more than 4 hours.

(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.

(8) Detection of *E. coli* in source water samples as specified in §§ 109.1303 and 109.1304 (relating to triggered monitoring requirements for groundwater sources; and assessment source water monitoring).

(9) A breakdown in treatment for groundwater sources as specified in § 109.1307(a)(1)(ii) (relating to system management responsibilities).

(10) Occurrence of a waterborne disease outbreak, as defined in § 109.1 (relating to definitions), or other emergency situation as defined in § 109.701(a)(3)(iii) (relating to reporting and recordkeeping) that adversely affects the quality or quantity of the finished water and has a significant potential to have serious adverse effects on human health as a result of short-term exposure.

(11) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the Department on a case-by-case basis.

(b) *Timing for a Tier 1 public notice.* A public water supplier shall do the following:

(1) Provide a public notice as soon as possible, but no later than 24 hours after the water supplier learns of the violation or situation under subsection (a).

(2) Report the circumstances to the Department within 1 hour of discovery of the violation or situation in accordance with § 109.701(a)(3).

(3) Initiate consultation with the Department as soon as possible, but no later than 24 hours after the water supplier learns of the violation or situation, to determine initial and any additional public notice requirements.

(4) Comply with initial and any additional public notification requirements that are established as a result of the consultation with the Department. These requirements may include the timing, form, manner, duration, frequency, and content of the initial and any repeat notices, and other actions reasonably designed to reach all persons served. The repeat notice frequency, if applicable, for a Tier 1 public notice shall be established as a result of the consultation, but may be no less often than once every 30 days as long as the violation or situation persists.

(5) Provide a public notice that the Tier 1 violation or situation has been corrected, as soon as possible, but no later than 24 hours after the corrective actions have been completed and the notice is approved by the Department.

(c) *Form and manner of a Tier 1 public notice prior to May 10, 2010.* The form and manner used by a public water supplier shall fit the specific situation and shall be reasonably designed to reach residential, transient and nontransient users of the water system. To reach all persons served, a water supplier shall use, at a minimum, one or more of the following forms of delivery:

- (1) Appropriate broadcast media, such as radio or television.
- (2) Posting of the notice in conspicuous locations throughout the area served by the water system.
- (3) Hand delivery of the notice to persons served by the water system.
- (4) Another delivery method approved in writing by the Department.

(d) *Delivery of a Tier 1 public notice beginning on May 10, 2010.* The delivery methods used by a public water supplier shall fit the specific situation and shall be reasonably designed to reach residential, transient and nontransient users of the water system. To reach all persons served in accordance with § 109.407(c) (relating to general public notification requirements), a water supplier shall use, as appropriate to the type of the water system, the following forms of delivery identified under paragraphs (1)—(3).

(1) Community water systems shall provide public notice to each service connection using one or more of the following forms of direct delivery:

- (i) Hand delivery.
- (ii) Electronic mail.
- (iii) Automatic telephone dialing systems or other best available technology. If a public water supplier delivers an abbreviated notice in accordance with § 109.411(b) (relating to content of a public notice), the public water supplier shall also provide the entire public notice under this section in one of the following ways:
 - (A) Posted on a web site.
 - (B) Recorded on a dedicated phone line.
 - (C) Another method approved in writing by the Department.

(iv) Another form of direct delivery approved in writing by the Department.

(2) In addition to providing public notice to each service connection under paragraph (1), community water systems that also serve transient and nontransient service connections shall provide notice using appropriate broadcast media, such as radio and television.

(3) Noncommunity water systems shall provide public notice to transient and nontransient consumers using one or more of the following forms of delivery:

- (i) Hand delivery.
- (ii) Electronic mail.

- (iii) Posting the notice in conspicuous locations throughout the area served by the water system.
- (iv) Another form of delivery approved in writing by the Department.

Authority

The provisions of this § 109.408 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.408 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383426) to (383429).

Cross References

This section cited in 25 Pa. Code § 69.1601 (relating to general); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.411 (relating to content of public notice); 25 Pa. Code § 109.413 (relating to special notice for nitrate exceedances above MCL by noncommunity water systems, where granted permission by the Department); 25 Pa. Code § 109.1303 (relating to triggered monitoring requirements for groundwater sources); and 25 Pa. Code § 109.1307 (relating to system management responsibilities).

§ 109.409. Tier 2 public notice—categories, timing and delivery of notice.

(a) *General violation categories and other situations requiring a Tier 2 public notice.* A public water supplier shall provide Tier 2 public notice for the following circumstances:

(1) All violations of the primary MCL, MRDL, treatment technique requirements and failure to take corrective action in Subchapters B, C, G, K, L or M, except when a Tier 1 notice is required under § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice) or when the Department determines that a Tier 1 notice is required. The tier assignment for fluoride is not incorporated by reference. Under § 109.202(d) (relating to State MCLs, MRDLs and treatment technique requirements), a public water system shall comply with the primary MCL for fluoride of 2 mg/L. As such, a public water supplier shall provide Tier 2 public notice for violation of the primary MCL for fluoride.

(2) Violations of the monitoring requirements in Subchapter C, K or M (relating to monitoring requirements; lead and copper; and additional requirements for groundwater sources), when the Department determines that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation.

(3) Failure to comply with the terms and conditions of any variance or exemption in place under Subchapter I (relating to variances and exemptions issued by the Department).

(4) Other violations or situations determined by the Department to require a Tier 2 public notice, taking into account potential chronic health impacts and persistence of the violation.

(b) *Timing for a Tier 2 public notice.* A public water supplier shall do the following:

(1) Report the circumstances to the Department within 1 hour of discovery of a violation under subsection (a)(1), in accordance with § 109.701(a)(3) (relating to reporting and recordkeeping).

(2) Provide the public notice as soon as possible, but no later than 30 days after the system learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than 7 days, even if the violation or situation is resolved. The Department may, in appropriate circumstances, allow additional time for the initial notice of up to 3 months from the date the system learns of the violation. The Department will not grant an extension across the board or for an unresolved violation. Extensions granted by the Department will be in writing.

(3) Repeat the notice every 3 months as long as the violation or situation persists, unless the Department determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstances may the repeat notice be given less frequently than once per year. The Department will not allow less frequent repeat notices across the board; or for a violation of a treatment technique requirement for pathogenic bacteria, viruses and protozoan cysts as defined in § 109.202(c); or for other ongoing violations. Determinations granted by the Department for less frequent repeat notices will be in writing.

(c) *Form and manner of a Tier 2 public notice.* A public water supplier shall provide the initial public notice and any repeat notices in a form and manner that is reasonably designed to reach all persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but the public water supplier shall at a minimum meet the following requirements:

(1) Unless directed otherwise by the Department in writing, community water systems shall provide notice using the following forms of delivery:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system.

(ii) Any other method reasonably designed to reach other persons regularly served by the system, if they would not normally be reached by the notice required in subparagraph (i). Those persons may include those who do not pay water bills or do not have service connection addresses such as house

renters, apartment dwellers, university students, nursing home patients or prison inmates. Other methods may include publication in a local newspaper, delivery of multiple copies for distribution by customers that provide their drinking water to others (such as apartment building owners or large private employers), posting in public places served by the system or on the Internet or delivery to community organizations.

(2) Unless directed otherwise by the Department in writing, noncommunity water systems shall provide notice using the following forms of delivery:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection, when known.

(ii) Any other method reasonably designed to reach other persons served by the system if they would not normally be reached by the notice required in subparagraph (i). Those persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely pass by. Other methods may include publication in a local newspaper or newsletter distributed to customers, use of e-mail to notify employees or students or delivery of multiple copies in central locations such as community centers.

Authority

The provisions of this § 109.409 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.409 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended June 18, 2004, effective June 19, 2004, 34 Pa.B. 3130; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005. Immediately preceding text appears at serial pages (347087) to (347089).

Cross References

This section cited in 25 Pa. Code § 69.1601 (relating to general); 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.407 (relating to general public notification requirements); and 25 Pa. Code § 109.418 (relating to special notice for failure to conduct source water *Cryptosporidium* monitoring or failure to determine bin classification).

§ 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 Tier 1 notice is required under § 109.408 (relating to Tier 1 public notice—

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) (relating to reporting and recordkeeping).

(3) Operation under a variance or an exemption granted under Subchapter I (relating to variances and exemptions issued by the Department).

(4) Availability of unregulated contaminant monitoring results, as required under 40 CFR 141.40 (relating to monitoring requirements for unregulated contaminants).

(5) Failure to report an *E. coli* MCL violation or an *E. coli*-positive routine or check sample as required under § 109.701(a)(3)(iv).

(6) Failure to submit a completed assessment form in accordance with § 109.701(a)(9).

(7) Failure to submit certification of completion of a Department-approved start-up procedure by a seasonal system in accordance with § 109.715(e) (relating to seasonal systems).

(b) *Timing for a Tier 3 public notice.*

(1) A public water supplier shall provide the public notice no later than 1 year after the public water system learns of the violation or situation or begins operating under a variance or exemption. Following the initial notice, the water supplier shall repeat the notice annually for as long as the violation, variance, exemption or other situation persists. If the public notice is posted, the notice shall remain in place for as long as the violation, variance, exemption or other situation persists, but in no case may the initial and annual repeat notice be posted for less than 7 days (even if the violation or situation is resolved).

(2) Instead of individual Tier 3 public notices, a public water supplier may use an annual report detailing all violations and situations that occurred during the previous 12 months, as long as the timing requirements of paragraph (1) are met.

(c) *Delivery of a Tier 3 public notice.* A public water supplier shall provide the initial notice and any repeat notices in a form and manner that is reasonably designed to reach all persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but the public water supplier shall, at a minimum, meet the following requirements:

(1) Unless directed otherwise by the Department in writing, community water systems shall provide notice using the following forms of delivery:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system.

(ii) Any other method reasonably designed to reach other persons regularly served by the system, if they would not normally be reached by the notice required in subparagraph (i). Those persons may include those who do

not pay water bills or do not have service connection addresses such as house renters, apartment dwellers, university students, nursing home patients or prison inmates. Other methods may include publication in a local newspaper, delivery of multiple copies for distribution by customers that provide their drinking water to others (such as apartment building owners or large private employers), posting in public places or on the Internet or delivery to community organizations.

(2) Unless directed otherwise by the Department in writing, noncommunity water systems shall provide notice using the following forms of delivery:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection, if known.

(ii) Any other method reasonably designed to reach other persons served by the system, if they would not normally be reached by the notice required in subparagraph (i). Those persons may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include publication in a local newspaper or newsletter distributed to customers, use of e-mail to notify employees or students or delivery of multiple copies in central locations such as community centers.

(d) *Use of a CCR to meet the Tier 3 public notice requirements.* For community water systems, the CCR required under § 109.416 (relating to CCR requirements) may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as the following conditions are met:

(1) The CCR is provided to persons served no later than 12 months after the system learns of the violation or situation as required under subsection (b).

(2) The Tier 3 notice contained in the CCR follows the content requirements under § 109.411 (relating to content of a public notice).

(3) The CCR is distributed following the delivery requirements under subsection (c).

Authority

The provisions of this § 109.410 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.410 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005. Immediately preceding text appears at serial pages (347089) to (347091).

Cross References

This section cited in 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.412 (relating to special notice of the availability of unregulated contaminant monitoring results); and 52 Pa. Code § 69.1601 (relating to general).

§ 109.411. Content of a public notice.

(a) *Elements of a public notice.* When a public water system is required to give public notice under this subchapter, each public notice must include the following elements:

- (1) A description of the violation or situation, including the contaminants of concern, and (as applicable) the contaminant levels.
- (2) When the violation or situation occurred.
- (3) Any potential adverse health effects from the violation or situation, including the standard language under subsection (e)(1) or (2), whichever is applicable.
- (4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water.
- (5) Whether alternative water supplies should be used.
- (6) What actions consumers should take, including when they should seek medical help, if known.
- (7) What the system is doing to correct the violation or situation.
- (8) When the water system expects to return to compliance or resolve the situation.
- (9) The name, business address and telephone number of the water system owner, operator or designee of the public water system as a source of additional information concerning the notice.
- (10) A statement to encourage the notice recipient to distribute the public notice to other persons served, using the standard language under subsection (e)(3), when applicable.

(b) *Abbreviated notice.* If automatic telephone dialing systems, TV scrollers, bullhorn announcements or radio station news flashes are used to deliver an abbreviated notice in accordance with § 109.408(d)(1)(iii) (relating to Tier 1 public notice—categories, timing and delivery of notice), the abbreviated notice must include, at a minimum, the following elements:

- (1) A description of the violation or situation, including the contaminants of concern, and (as applicable) the contaminant levels.
- (2) Whether alternative water supplies should be used.
- (3) What actions consumers should take, including when they should seek medical help, if known.
- (4) A telephone number or web site address, or both, where consumers can obtain the entire notice.

(c) *Elements of a public notice for public water systems operating under a variance or exemption.*

- (1) If a public water system has been granted a variance or an exemption under Subchapter I (relating to variances and exemptions issued by the Department), the public notice must contain the following elements:
 - (i) An explanation of the reason for the variance or exemption.

- (ii) The date on which the variance or exemption was issued.
 - (iii) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption.
 - (iv) A notice of any opportunity for public input in the review of the variance or exemption.
- (2) If a public water system violates the conditions of a variance or exemption, the public notice must contain the ten elements listed in subsection (a).
- (d) *Presentation of a public notice.*
- (1) Each public notice required by this section must:
 - (i) Be displayed in a conspicuous way when printed or posted.
 - (ii) Not contain overly technical language or print that is smaller than a font size of 10 points.
 - (iii) Not be formatted in a way that defeats the purpose of the notice.
 - (iv) Not contain language that nullifies the purpose of the notice.
 - (2) Each public notice required by this section must comply with multilingual requirements, as follows:
 - (i) The public notice must contain information in Spanish regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance.
 - (ii) For each non-English-speaking group other than Spanish-speaking that exceeds 10% of the consumers for systems serving at least 1,000 people or 100 consumers for systems serving less than 1,000 people, and speaks the same language other than English, the public notice must contain information in the appropriate languages regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance in the appropriate language. The Department will make the final determination of which systems need to include this information.
- (e) *Standard language for a public notice.* Public water systems shall include the following standard language in their public notice:
- (1) *Standard health effects language for primary MCL or MRDL violations, treatment technique violations, and violations of the condition of a variance or exemption.* Public water systems shall include in each public notice appropriate health effects language. This subchapter incorporates by reference the health effects language specified in 40 CFR Part 141, Subpart Q, Appendix B (relating to standard health effects language for public notification), corresponding to each primary MCL, MRDL and treatment technique violation listed in 40 CFR Part 141, Subpart Q, Appendix A (relating to NPDWR violations and other situations requiring public notice), and for each violation of a condition of a variance or exemption, unless other health effects language is established by regulations or order of the Department. The health effects lan-

guage for fluoride is not incorporated by reference. Public water systems shall include the following health effects language in each Tier 2 public notice for violation of the primary MCL of 2 mg/L for fluoride:

“This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). Dental fluorosis, in its moderate or severe forms, may result in a brown staining and or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency’s drinking water standard) can increase your risk of developing bone disease.”

(2) *Standard language for violations of monitoring requirements.* Public water systems shall include the following language in their notice, including the language necessary to fill in the blanks, for all violations of monitoring requirements listed in 40 CFR Part 141, Subpart Q, Appendix A:

“We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [insert compliance period], we “did not monitor or test” or “did not complete all monitoring or testing” for [insert contaminant(s)] and therefore cannot be sure of the quality of your drinking water during that time.”

(3) *Standard language to encourage the distribution of the public notice to all persons served.* Public water systems shall include in their notice the following language, if applicable:

“Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.”

Authority

The provisions of this § 109.411 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P. S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.411 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334. Immediately preceding text appears at serial pages (324492) to (324495).

Cross References

This section cited in 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.413 (relating to special notice for nitrate exceedances)

above MCL by noncommunity water systems, where granted permission by the Department); 25 Pa. Code § 109.416 (relating to CCR requirements); 25 Pa. Code § 109.417 (relating to special notice for significant deficiencies by noncommunity water systems); 25 Pa. Code § 109.418 (relating to special notice for failure to conduct source water *Cryptosporidium* monitoring or failure to determine bin classification); 25 Pa. Code § 109.1004 (relating to public notification); and 52 Pa. Code § 69.1601 (relating to general).

§ 109.412. Special notice of the availability of unregulated contaminant monitoring results.

(a) *Timing for a special notice.* A community water system or nontransient, noncommunity water system required to monitor for an unregulated contaminant under 40 CFR 141.40 (relating to monitoring requirements for unregulated contaminants) shall notify persons served by the system of the availability of the results of the sampling no later than 12 months after the monitoring results are known.

(b) *Delivery of a special notice.* The delivery of the public notice shall follow the requirements for a Tier 3 public notice prescribed in § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice). A public water system may use an annual report or CCR to notify persons served by the system of the availability of the results of the sampling as long as the requirements under § 109.410(d) are met. The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

Authority

The provisions of this § 109.412 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.412 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334. Immediately preceding text appears at serial page (324495).

Cross References

This section cited in 52 Pa. Code § 69.1601 (relating to general).

§ 109.413. Special notice for nitrate exceedances above MCL by noncommunity water systems, when granted permission by the Department.

(a) *Timing for a special notice.* A noncommunity water system granted permission by the Department in writing in accordance with 40 CFR 141.11(d) (relating to maximum contaminant levels for inorganic chemicals) to exceed the nitrate MCL shall provide notice to persons served according to the requirements for a Tier 1 notice under § 109.408(a) and (b) (relating to Tier 1 public notice—categories, timing and delivery of notice).

(b) *Delivery of a special notice.* Noncommunity water systems granted permission by the Department in writing to exceed the nitrate MCL in accordance with 40 CFR 141.11(d) shall provide continuous posting of the fact that nitrate levels exceed 10 mg/L and include the potential health effects of exposure, according to the requirements for a Tier 1 notice delivery under § 109.408(c)(2) and (d)(3) and the content requirements under § 109.411 (relating to content of a public notice).

Authority

The provisions of this § 109.413 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.413 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334. Immediately preceding text appears at serial pages (324495) to (324496).

Cross References

This section cited in 52 Pa. Code § 69.1601 (relating to general).

§ 109.414. Notice to new billing units or new customers.

(a) *Requirements for community water systems.* Community water systems shall give a copy of the most recent public notice for any continuing violation, the existence of a variance or exemption, or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.

(b) *Requirements for noncommunity water systems.* Noncommunity water systems shall continuously post the public notice in conspicuous locations to inform new consumers of any continuing violation, variance or exemption, or other situation requiring a public notice for as long as the violation, variance, exemption or other situation persists.

Source

The provisions of this § 109.414 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894.

Cross References

This section cited in 52 Pa. Code § 69.1601 (relating to general).

§ 109.415. Notice by the Department on behalf of the public water system.

(a) *Failure to give public notice.* If a public water supplier fails to give notice to the public as required by this subchapter, the Department may perform this notification on behalf of the supplier of water and may assess costs of notification on the responsible water supplier.

(b) *System responsibilities when public notice is given by the Department.* If the Department gives public notice, the public water supplier remains responsible for ensuring that the requirements of this subchapter are met.

Authority

The provisions of this § 109.415 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.415 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334. Immediately preceding text appears at serial page (324496).

Cross References

This section cited in 52 Pa. Code § 69.1601 (relating to general).

§ 109.416. CCR requirements.

This section applies only to community water systems and establishes the minimum requirements for the content of the annual CCR that each system must deliver to its customers. This report shall contain information on the quality of the water delivered by the system and characterize the risks, if any, from exposure to contaminants detected in the drinking water in an accurate and understandable manner.

(1) For the purposes of this section, the definitions of “customer” and “detected” established by the EPA under 40 CFR 141.151(c) and (d) (relating to definitions), respectively, are incorporated by reference.

(2) Each community water system shall deliver to its customers an annual CCR on the dates established by the EPA under 40 CFR 141.152 (relating to effective dates), which is incorporated by reference.

(3) Except as noted in subparagraphs (i)—(v), the annual report that a community water system provides to its customers shall contain all of the information, mandatory language and optional text specified by the EPA under 40 CFR 141.153 and 141.154 (relating to content of the reports; and required additional health information), which are incorporated by reference, and under 40 CFR 141, Subpart O, Appendix A (relating to regulated contaminants), which is incorporated by reference, unless other information, mandatory language or optional text is established by regulations or order of the Department. The health effects language for fluoride is not incorporated by reference. Public water systems shall include the health effects language specified in § 109.411(d)(1) (relating to content of a public notice) for violation of the primary MCL of 2 mg/L fluoride.

(i) If a water system wants to use wording of its own choice in place of optional text, the water supplier shall submit the proposed wording to the

Department for review and written approval prior to including it in its annual CCR. Once approved, the water supplier's wording may be used in future CCRs without further approval from the Department as long as it is not changed and is still applicable.

(ii) The CCR shall contain information in Spanish regarding the importance of the report or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the report or to request assistance.

(iii) For each non-English-speaking group other than Spanish-speaking 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 speaks the same language other than English, the report shall contain information in the appropriate languages regarding the importance of the report or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the report or to request assistance in the appropriate language. The Department will make the final determination of which systems need to include this information.

(iv) For the purpose of defining how certain portions of a CCR shall appear, the term "prominently display" as used in 40 CFR 141.154(a) means that the information shall be printed either in a larger size typeface or bolded or enclosed within a border or all these so as to make the information conspicuous in comparison to the rest of the text appearing before and after the prominently displayed text. Prominently displayed text placed away from other text (such as, in a highlighted or boxed area) shall be printed no smaller than the text used elsewhere in the body of the report, excluding main or section titles.

(v) Information contained in a CCR shall appear in an easy-to-read format. Font sizes below 10 points or color combinations, or both, that make it difficult for persons to read and understand the information contained in the CCR may not be used.

(4) *Report delivery and recordkeeping.* Each community water system shall do the following:

(i) Mail or otherwise directly deliver to each customer and to the Department one copy of the annual CCR no later than the date the water system is required to distribute the CCR to its customers.

(ii) Make a good faith effort to reach consumers who do not get water bills. The Department will determine "good faith" based on those methods identified in 40 CFR 141.155(b) (relating to delivery requirements), which are incorporated by reference.

(iii) Submit in writing to the Department no later than 3 months after the delivery of the annual CCR:

(A) A certification that the annual CCR has been distributed to customers and that the information contained in the report is correct and consistent with the compliance monitoring data previously submitted to the Department.

(B) A description of what was done to meet the good faith effort requirement described in subparagraph (ii).

(iv) If another State agency or commission also regulates the community water system, submit a copy of the system's annual CCR to the other agency or commission upon the specific request of that agency or commission no later than the date the water system is required to distribute the CCR to its customers. Each State agency or commission shall determine the way it requests a copy of the system's CCR. Those agencies or commissions may include, but are not limited to, the following:

(A) The Pennsylvania Public Utility Commission and the Office of Consumer Advocate in the Office of the Attorney General, for water systems that are public utilities regulated under 66 Pa.C.S. (relating to Public Utility Code).

(B) The Department of Public Welfare for self-contained community water systems serving personal care or other group housing facilities.

(C) The Department of Health, for self-contained community water systems serving skilled healthcare facilities.

(v) Make copies of its annual CCR available to the public on request.

(vi) If a community water system serves 100,000 or more people, post its current year's report to a publicly accessible site on the Internet.

(vii) Retain copies of each annual CCR and the related information required in paragraph (3) on the premises of the system or at a convenient location near the premises for no less than 3 years after the date of its delivery to customers.

Source

The provisions of the § 109.416 adopted August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894.

Cross References

This section cited in 25 Pa. Code § 109.1 (relating to definitions); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.1004 (relating to public notification); and 52 Pa. Code § 69.1601 (relating to general).

§ 109.417. Special notice for significant deficiencies by noncommunity water systems.

(a) In addition to the applicable public notification requirements of this subchapter, a noncommunity water system that receives notice from the Department under § 109.1302(c)(2) (relating to groundwater systems with significant deficiencies or source water *E. coli* contamination) of a significant deficiency shall inform the public served by the water system in a manner approved by the

Department of any significant deficiency that has not been corrected within 12 months of being notified by the Department, or earlier if directed by the Department. The system shall continue to inform the public annually until the significant deficiency is corrected. The information must include:

- (1) The nature of the significant deficiency and the date the significant deficiency was identified by the Department.
 - (2) The Department-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed.
 - (3) For systems with a large proportion of non-English speaking consumers specified in § 109.411(d)(2) (relating to content of a public notice), information in the appropriate languages regarding the importance of the notice or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.
- (b) If directed by the Department, a noncommunity water system with significant deficiencies that have been corrected in accordance with § 109.1302(c)(1) shall inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction.

Authority

The provisions of this § 109.417 adopted under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20), unless otherwise noted.

Source

The provisions of this § 109.417 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

§ 109.418. Special notice for failure to conduct source water *Cryptosporidium* monitoring or failure to determine bin classification.

(a) *Special notice for repeated failure to conduct monitoring of the source water for Cryptosporidium and for failure to determine bin classification or Cryptosporidium level.* The owner or operator of a community or noncommunity water system that is required to monitor source water under § 109.1202 (relating to monitoring requirements) shall notify persons served by the water system that monitoring has not been completed as specified no later than 30 days after the system has failed to collect any 3 months of monitoring as specified in § 109.1202(c). The notice shall be repeated as specified in § 109.409(b)(3) (relating to Tier 2 public notice—categories, timing and delivery of notice).

(b) *Delivery of the special notice for failure to determine bin classification or Cryptosporidium level.* The owner or operator of a community or noncommunity water system that is required to determine a bin classification under § 109.1203 (relating to bin classification and treatment technique requirements), or to determine *Cryptosporidium* level under § 109.1203(i) and (j), shall notify persons

served by the water system that the determination has not been made as required no later than 30 days after the system has failed to report the determination as specified in § 109.1206(h) (relating to reporting and recordkeeping requirements) or § 109.1203(i) and (j), initial round and second round, respectively. The notice shall be repeated as specified in § 109.409(b)(3). The notice is not required if the system is complying with a Department-approved schedule to address the violation.

(c) *Form and manner of the special notice.*

(1) The form and manner of the public notice must follow the requirements for a Tier 2 public notice prescribed in § 109.409(c). The public notice shall be presented as required in § 109.411(d) (relating to content of a public notice).

(2) The notice must contain the following language, including the language necessary to fill in the blanks.

(i) The special notice for repeated failure to conduct monitoring must contain the following language:

“We are required to monitor the source of your drinking water for *Cryptosporidium*. Results of the monitoring are to be used to determine whether water treatment at the (treatment plant name) is sufficient to adequately remove *Cryptosporidium* from your drinking water. We are required to complete this monitoring and make this determination by (required bin determination date). We ‘did not monitor or test’ or ‘did not complete all monitoring or testing’ on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate *Cryptosporidium* removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the deadline required, (date). For more information, please call (name of water system contact) of (name of water system) at (phone number).”

(ii) The special notice for failure to determine bin classification or *Cryptosporidium* level must contain the following language:

“We are required to monitor the source of your drinking water for *Cryptosporidium* to determine by (date) whether water treatment at the (treatment plant name) is sufficient to adequately remove *Cryptosporidium* from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of (date). For more information, please call (name of water system contact) of (name of water system) at (phone number).”

(3) Each special notice must also include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

Authority

The provisions of this § 109.418 adopted under section 4 of the Pennsylvania Safe Drinking Water Act (35 P. S. § 721.4); and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20), unless otherwise noted.

Source

The provisions of this § 109.418 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Subchapter E. PERMIT REQUIREMENTS

Sec.

- 109.501. General permit requirements.
- 109.502. Permitting of currently operating systems; compliance deadlines.
- 109.503. Public water system construction permits.
- 109.504. Public water system operation permits.
- 109.505. Requirements for noncommunity water systems.
- 109.506. Emergency permits.
- 109.507. Permits for innovative technology.
- 109.508. [Reserved].
- 109.509. [Reserved].
- 109.510. [Reserved].

Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter); and 25 Pa. Code § 109.301 (relating to general monitoring requirements).

§ 109.501. General permit requirements.

(a) A person may not construct a public water system without first having obtained a construction permit from the Department under § 109.503 (relating to public water system construction permits) except as provided in §§ 109.502 and 109.505 (relating to permitting of currently operating systems; compliance deadlines; and requirements for noncommunity water systems).

(b) A person may not substantially modify a permitted public water system without first obtaining an amended construction permit from the Department under § 109.503(b).

(c) A person may not operate a public water system without first having obtained an operation permit from the Department under § 109.504 (relating to public water system operation permits) except as provided in §§ 109.502 and 109.505.

(d) A person may not operate a substantially modified facility without first obtaining an amended operation permit from the Department under § 109.504.

Source

The provisions of this § 109.501 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial page (136307).

§ 109.502. Permitting of currently operating systems; compliance deadlines.

(a) A public water system operating under a valid permit issued under the act of April 22, 1905 (P. L. 260, No. 182) (35 P. S. §§ 711—716) (Repealed), may continue to operate in accordance with the terms and conditions of the prior permit as long as the public water system is operated in compliance with this chapter and the act. A condition in a prior permit which is inconsistent with this chapter is void, except for conditions concerning construction of facilities which have been completed. Substantial modifications of facilities operated under a prior permit require an amended construction permit under § 109.503(b) (relating to public water system construction permits).

(b) A community water system which was in operation prior to December 8, 1984, which is not operated under a permit issued under the act of April 22, 1905 (P. L. 260, No. 182) may continue to operate on an interim basis if the water supplier files a brief description of the system on a form approved by the Department by June 8, 1985, and files a complete construction permit application under § 109.503 within 6 months of receipt of a notice from the Department to file an application, or in any event, by December 8, 1989. The Department will establish a schedule for notifying community water systems to apply for permits based upon factors such as compliance histories and results of monitoring or inspections.

(c) A bottled water system operating under a valid permit issued under the act of April 30, 1929 (P. L. 897, No. 396) (35 P. S. §§ 1001—1006) (Repealed) prior to December 8, 1984, may continue to operate under the terms and conditions of the permit on an interim basis, if the water supplier submits a complete application for a permit under § 109.503 by December 8, 1985.

(d) A bulk water hauling system operating prior to December 8, 1984, may continue to operate on an interim basis if the water supplier submits a complete application for a permit under § 109.503 by December 8, 1985.

(e) A noncommunity water system operating under a permit or license issued under the act of May 23, 1945 (P. L. 926, No. 369) (35 P. S. §§ 655.1—655.13) or the Seasonal Farm Labor Act (43 P. S. §§ 1301.101—1301.606) may continue to operate on an interim basis if the water supplier submits complete information to the licensing authority describing the drinking water facilities on a form provided by the Department. The completed form shall be submitted by March 8, 1985.

(f) A noncommunity water system operating prior to December 8, 1984, may continue to operate on an interim basis if the public water supplier files a com-

plete construction permit application or otherwise complies with § 109.505 (relating to requirements for noncommunity water systems) by December 8, 1985.

(g) A noncommunity water system operating prior to May 16, 1992, which has not complied with § 109.505 and is required to comply with § 109.505 because it is now considered to be providing water for human consumption, may continue to operate on an interim basis if the water supplier, by May 16, 1993, either complies with § 109.505, or signs with the Department a consent order and agreement, including a compliance schedule.

(h) Authorization for interim operation under this section is only valid until the Department makes a final decision to issue or deny an operation permit under this chapter.

(i) The authorization to operate on an interim basis does not relieve the water supplier of other duties or obligations under the act or this chapter.

Source

The provisions of this § 109.502 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial pages (136307) to (136308).

Cross References

This section cited in 25 Pa. Code § 109.501 (relating to general permit requirements).

§ 109.503. Public water system construction permits.

(a) *Permit application requirements.* An application for a public water system construction permit shall be submitted in writing on forms provided by the Department and shall be accompanied by plans, specifications, engineer's report, water quality analyses and other data, information or documentation reasonably necessary to enable the Department to determine compliance with the act and this chapter. The Department will make available to the applicant the Public Water Supply Manual, available from the Bureau of Water Standards and Facility Regulation, Post Office Box 8774, Harrisburg, Pennsylvania 17105 which contains acceptable design standards and technical guidance. Water quality analyses shall be conducted by a laboratory accredited under this chapter.

(1) *General requirements.* An application must include:

(i) *Permit application signatures.* A Department permit application signed as follows:

(A) In the case of corporations, by a principal executive officer of at least the level of vice president, or an authorized representative, if the representative is responsible for the overall operation of the facility.

(B) In the case of a partnership, by a general partner.

(C) In the case of a sole proprietorship, by the proprietor.

(D) In the case of a municipal, State or other public facility, by either a principal executive officer, ranking elected official or other authorized employee.

(ii) *Plans, specifications and engineer's report.* Plans, specifications and engineer's reports shall comply with the following:

(A) The drawings, specifications and engineer's report shall be prepared by or under the supervision of a professional engineer registered to practice in this Commonwealth or in the state in which the public water system is located.

(B) The front cover or flyleaf of each set of drawings, of each copy of the engineer's report, and of each copy of specifications shall bear the signature and imprint of the seal of the registered engineer. Drawings shall bear an imprint or a legible facsimile of the seal.

(iii) *Information describing new sources.* The Department may accept approval of an out-of-State source by the agency having jurisdiction over drinking water in that state if the supplier submits adequate proof of the approval and the agency's standards are at least as stringent as this chapter. Information describing sources must include:

(A) A comprehensive sanitary survey of the physical surroundings of each new source of raw water and its proximity to potential sources of contamination. For surface water, this information shall include a description of the watershed topography and land uses within the watershed. For systems using wells, springs or infiltration galleries, this information shall include a hydrogeological report prepared and signed by a professional geologist who has complied with the requirements of the Engineer, Land Surveyor and Geologist Registration Law (63 P. S. §§ 148—158.2) describing the geology of the area including the source aquifers, overlying formations, hydrogeologic boundaries, aquifer porosity estimates, water table contour or potentiometric surface maps depicting prepumping conditions and other information deemed necessary to evaluate the hydraulic characteristics of the aquifer and demonstrate the suitability of the proposed source. At the discretion of the Department, these requirements may be altered for a proposed well, wellfield, spring or infiltration gallery that will be pumping less than or yielding less than 100,000 gallons per day.

(B) An evaluation of the quality of the raw water from each new source. This clause does not apply when the new source is finished water obtained from an existing permitted community water system unless the Department provides written notice that an evaluation is required. The evaluation must include analysis of the following:

(I) VOCs for which MCLs have been established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.61(a) (relating to maximum contaminant levels for organic contaminants). Vinyl chloride monitoring is required only if one or more of the

two-carbon organic compounds specified under § 109.301(5)(i) (relating to general monitoring requirements) are detected. Samples for VOCs shall be collected in accordance with § 109.303(d) (relating to sampling requirements).

(II) Except for asbestos, IOCs for which MCLs have been established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.62 (relating to maximum contaminant levels for inorganic contaminants). The new source shall be monitored for asbestos if the Department has reason to believe the source water is vulnerable to asbestos contamination.

(III) Lead.

(IV) Copper.

(V) Total coliform concentration and, if total coliform-positive, analyze for the presence of *E. coli*.

(VI) SOCs.

(-a-) Except for SOCs that have been granted a Statewide waiver, SOCs for which MCLs have been established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.61(c).

(-b-) Dioxin where there is a source of dioxin contamination within 1,000 feet of a groundwater source or within 1 mile upstream of a surface water source.

(-c-) Polychlorinated biphenyls (PCBs) where there is a source of PCB contamination within 1,000 feet of a groundwater source or within 1 mile upstream of a surface water source.

(VII) Gross Alpha (α), radium-226, radium-228, uranium and Gross Beta (β).

(VIII) Aluminum, chloride, color, foaming agents, iron, manganese, pH, silver, sulfate, total dissolved solids and zinc for which MCLs have been established by the EPA under the National Secondary Drinking Water Regulations in 40 CFR 143.3 (relating to secondary MCLs).

(IX) Alkalinity.

(X) Hardness.

(XI) Temperature.

(XII) For surface water or GUDI sources, *E. coli* or *Cryptosporidium*, or both, as specified in § 109.1202 (relating to monitoring requirements).

(XIII) Other contaminants that the Department determines necessary to evaluate the potability of the source.

(C) An evaluation of the quantity of the raw water from each new source. Flow data shall be submitted for springs, infiltration galleries or surface water sources. Aquifer test data, including drawdown and recovery data and the derivation of hydraulic conductivity, transmissivity and storage coefficient of the aquifer, shall be submitted for wells. At the discre-

tion of the Department, these requirements may be altered for wells or wellfields pumping less than 100,000 gallons per day. The Department may require that other information be submitted to evaluate the safe yield of the source. The safe yield is the amount of water that can be withdrawn from an aquifer without causing an undesired result, such as adverse dewatering of an aquifer, induced potential health threats or impacts upon stream uses.

(D) A Department approved delineation of the Zone I wellhead protection area for community water system wells, springs or infiltration galleries.

(iv) *Chapter 102 requirements.* An erosion and sedimentation control plan which meets the requirements contained in Chapter 102 (relating to erosion and sediment control) when earth-moving activities are involved.

(2) *Special requirements for public water suppliers proposing to use POE devices.* Permit applications which propose the use of POE devices shall, in addition to the information required in paragraph (1), include the following:

(i) Documentation that each POE device to be used meets the certification requirements of § 109.612 (relating to POE devices).

(ii) Manufacturer's design and engineering information, including blueprints or similar drawings, which provide detailed information about the construction and operation of the treatment device and its components.

(iii) A detailed monitoring plan, subject to the Department's approval, which includes a list of the contaminants to be monitored and the frequency of monitoring.

(iv) An operation and maintenance plan, as outlined in § 109.702 (relating to operation and maintenance plan), which includes a schedule of routine maintenance to be performed and the parameters to be monitored to determine the performance and condition of the devices.

(v) A drawing of the water supply distribution system showing each house, building or facility where POE devices are to be installed.

(vi) Proof of the right-of-access for every house, building or facility to be served by a POE device.

(3) *Business plan requirements for new community water systems.* Permit applications submitted to the Department on or after October 1, 1996, for new community water systems shall, in addition to the information required in paragraph (1), include a business plan. A new community water system is a proposed community water system or an existing system not otherwise subject to the act which becomes a community water system subject to the act as a result of an increase in the number of year-round residents or residences served. The business plan shall be submitted on forms approved by the Department. To be considered complete, the business plan shall conform to the guidelines contained in the Department's Public Water Supply Manual and shall consist of the following three parts:

(i) *Facilities plan.* The facilities plan shall identify the scope of the water service to be provided. In addition to the requirements of subsection (a)(1)(ii), the facilities plan shall include the following:

(A) An assessment of current and reasonably foreseeable compliance requirements that are applicable under the act based on monitoring data from the proposed sources of supply.

(B) A description of the alternatives considered and the rationale for the approach selected to providing water service. This description shall include the technical, managerial, financial, operational and local decision making rationale for the selected approach. Unless the new system is a consecutive water system, the plan shall include the rationale for creating a separate system.

(C) An engineering description of the facilities to be constructed, including the construction phases and future plans for expansion. This description shall include an estimate of the full cost of any required construction, operation and maintenance.

(ii) *Management plan.* The management plan shall specify the commitments that are needed to provide for effective management and operation of the system and shall include the following:

(A) Documentation that the applicant has the legal right and authority to take the measures necessary for the construction, operation and maintenance of the system. The evidence shall include, but is not limited to, indices of ownership where the applicant is the owner of the system or, where the applicant is not the owner, legally enforceable management contracts or agreements.

(B) An operating plan to define the tasks to be performed in managing and operating the system. The operating plan shall consist of the following:

(I) *Part 1.* A management and administrative plan.

(II) *Part 2.* An operation and maintenance plan which conforms with § 109.702.

(C) Assurances that the commitments needed for proper operation and management of the system will be carried out. These assurances can be given in the form of documentation of the credentials of management and operations personnel, cooperative agreements or service contracts.

(iii) *Financial plan.* The financial plan shall describe the system's revenues and cash flow for meeting the costs of construction and the costs of operation and maintenance for at least 5 full years from the date the applicant anticipates initiating system operation. At a minimum, the financial plan shall include pro forma statements for each of the 5 years including the following:

(A) Balance sheet.

(B) Income statement.

(C) Statement of cash flow.

(b) *Amendments.* A water supplier operating under a public water system permit shall obtain an amended construction permit before making a substantial modification to the public water system.

(1) A water supplier shall submit an application for an amended construction permit under the application requirements in subsection (a), if the proposed modification constitutes a major change to the public water system. Typical modifications which may be considered major changes are proposed new sources, additions or deletions of treatment techniques or processes, pumping stations and storage reservoirs.

(2) A water supplier shall submit a written request to the Department if the proposed modification constitutes a relatively minor change to the public water system. A request for an amended construction permit under this paragraph shall describe the proposed change in sufficient detail to allow the Department to adequately evaluate the proposal. Typical modifications which may be considered minor changes are changes in treatment chemicals; replacement of tank or reservoir linings or similar materials in contact with the water supply; interconnections; covering of reservoirs; construction of covered storage tanks and standpipes designed to standard specifications; transmission mains; and changes in legal status, such as transfers of ownership, incorporation or mergers.

(3) The Department determines whether a particular modification is a substantial modification and requires the construction permit to be amended under paragraph (1) or (2). A substantial modification is a modification which may affect the quality or quantity of water served to the public or may be prejudicial to the public health or safety. The Department's determination of whether the substantial modification is a major or minor change will include consideration of the expected amount of staff time required to review and process the proposal, the magnitude and complexity of the proposed change and the compliance history of the public water system.

(c) *Permit fees.*

(1) An application for a permit or a major permit amendment under subsection (a)(1), except for an application for construction or modification of corrosion control treatment facilities under § 109.1105 (relating to permit requirements), shall be accompanied by a check in the amount of \$750, payable to the "Commonwealth of Pennsylvania," except a fee is not required for an application submitted by a State regulatory agency, or an application submitted for a public water system serving 100 or fewer individuals. The fees for permitting and related services under § 109.1105 for corrosion control treatment facilities are established under § 109.1108 (relating to fees).

(2) A fee is not required for an application for an emergency permit under § 109.506 (relating to emergency permits) or an amendment under subsection (b)(2).

(d) *Department's review.*

(1) The Department will publish a notice in the *Pennsylvania Bulletin* of the applications submitted under subsection (a) or (b)(1) or § 109.507 (relating to permits for innovative technology), providing at least 30 days for public comment from the date of publication.

(2) The Department will not accept an application for review until the application is determined to be complete. A complete application is one which includes all the information specified in this chapter and other relevant information the Department determines is necessary to enable the Department to undertake a technical review of the application.

(3) If the Department determines the permit application is incomplete, it will request the additional information in writing from the applicant within 90-calendar days of receipt of the application.

(4) The Department will grant or deny a permit within 120 calendar days of receipt of the application, or when an incomplete application was submitted, within 120-calendar days of receipt of the applicant's written response to the Department's request for additional information.

(5) Applications will be reviewed in accordance with accepted engineering and hydrogeological practices. The approval of plans, specifications, hydrogeological reports and engineer's reports is limited to the sanitary features of design and other features of public health significance.

(6) In reviewing a permit application under this chapter, the Department may consider the following:

(i) Adherence to standards in Subchapter F (relating to design and construction standards).

(ii) Compliance by the proposed project with applicable statutes administered by the Commonwealth, river basin commissions created by interstate compact or Federal environmental statutes or regulations.

(iii) Consistency with the environmental rights and values secured by PA. CONST. art. I, § 27 and with the Commonwealth's duties as trustee to conserve and maintain this Commonwealth's public natural resources.

(iv) Present conditions and the effects of reasonably foreseeable future development within the area of the project, including wellhead protection areas.

(e) *Issuance and conditions.*

(1) Issuance of a construction permit authorizes only the construction or modifications included in the permit. The permit's continuing validity is conditioned upon satisfaction of the provisions of the permit.

(2) The plans, specifications, reports and supporting documents submitted as part of the permit application become part of the permit.

(3) A permit authorizing construction or modification of water facilities shall expire within 2 years from the date of issuance unless substantial work is

initiated. A permit may be renewed by the Department if the water supplier makes a written request for renewal prior to the expiration date.

Source

The provisions of this § 109.503 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended April 2, 2004, effective April 3, 2004, 34 Pa.B. 1762; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (345329) to (345332), (305015) to (305016) and (345333) to (345334).

Notes of Decision

Challenge Untimely

Private individual who only challenged issuance of operation permit that merely confirmed water authority's use of hydrofluorosilicic acid to fluoridate city water as permitted in construction permit issued by Department of Environmental Protection, waived his right to challenge the use given that appeal period for challenge to construction permit had expired. *Potratz v. Department of Environmental Protection*, 897 A.2d 16 (Pa. Cmwlth 2006).

Cross References

This section cited in 25 Pa. Code § 109.501 (relating to general permit requirements); 25 Pa. Code § 109.502 (relating to permitting of currently operating systems; compliance deadlines); 25 Pa. Code § 109.505 (relating to requirements for noncommunity water systems); 25 Pa. Code § 109.506 (relating to emergency permits); 25 Pa. Code § 109.507 (relating to permits for innovative technology); 25 Pa. Code § 109.609 (relating to reserved capacity and finished water storage); 25 Pa. Code § 109.712 (relating to control of POE devices); 25 Pa. Code § 109.1005 (relating to permit requirements); 25 Pa. Code § 109.1105 (relating to permit requirements); and 52 Pa. Code § 3.501 (relating to certificate of public convenience as a water or wastewater collection, treatment and disposal supplier).

§ 109.504. Public water system operation permits.

(a) To obtain an operation permit for a new system or an amended operation permit for system modifications, the public water supplier shall submit a certification of construction to the Department upon completion of the applicable construction or modification. The certification shall state that the work was completed in accordance with the approved plans and specifications and shall be signed by the professional engineer or other person responsible for the work.

(b) The Department will not issue an operation permit or an amended operation permit, unless the following conditions are satisfied:

- (1) Construction of the new or modified facilities has been approved by the Department.
- (2) The water supplier has demonstrated to the Department that adequate operation and maintenance information for the new or modified facilities is available onsite for use by the public water system's personnel.
- (3) The water supplier has demonstrated to the Department that they are in compliance with § 109.704 (relating to operator certification).

(c) Issuance of an operation permit authorizes only the operation included in the permit. The permit's continuing validity is conditioned upon satisfaction of all provisions of the permit.

Source

The provisions of this § 109.504 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119. Immediately preceding text appears at serial pages (320518) to (320519) and (313683).

Cross References

This section cited in 25 Pa. Code § 109.501 (relating to general permit requirements); 25 Pa. Code § 109.505 (relating to requirements for noncommunity water systems); 25 Pa. Code § 109.506 (relating to emergency permits); 25 Pa. Code § 109.609 (relating to reserved capacity and finished water storage); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.1105 (relating to permit requirements); 25 Pa. Code § 109.1107 (relating to system management responsibilities); and 25 Pa. Code § 109.1306 (relating to information describing 4-log treatment and compliance monitoring).

§ 109.505. Requirements for noncommunity water systems.

(a) A noncommunity water system shall obtain a construction permit under § 109.503 (relating to public water system construction permits) and an operation permit under § 109.504 (relating to public water system operation permits), unless the noncommunity water system satisfies paragraph (1) or (2). The Department retains the right to require a noncommunity water system that meets the requirements of paragraph (1) or (2) to obtain a construction and an operation permit, if, in the judgment of the Department, the noncommunity water system cannot be adequately regulated through standardized specifications and conditions. A noncommunity water system which is released from the obligation to obtain a construction and an operation permit shall comply with the other requirements of this chapter, including design, construction and operation requirements described in Subchapters F and G (relating to design and construction standards; and system management responsibilities).

(1) A noncommunity water system which holds a valid permit or license issued after December 8, 1984, under one or more of the following acts satisfies the permit requirement under the act. The licensing authority will review the drinking water facilities under this chapter when issuing permits under the following acts:

- (i) The act of May 23, 1945 (P. L. 926, No. 369) (35 P.S. §§ 655.1—655.13).
- (ii) The Seasonal Farm Labor Act (43 P.S. §§ 1301.101—1301.606).
- (iii) The Public Bathing Law (35 P.S. §§ 672—680d).

(2) A noncommunity water system not covered under paragraph (1) is not required to obtain a construction and an operation permit if it satisfies the following specifications and conditions:

- (i) The sources of supply for the system are groundwater sources requiring treatment no greater than disinfection to provide water of a quality

that meets the primary MCLs established under Subchapter B (relating to MCLs, MRDLs or treatment technique requirements).

(ii) The water supplier files a brief description of the system, including raw source quality data, on forms acceptable to the Department. Amendments to the system description shall be filed when a substantial modification is made to the system. Descriptions of new systems or modifications shall be submitted and approved by the Department prior to construction.

(3) A noncommunity water system which satisfies the requirements of paragraphs (1) and (2) shall provide the Department with the following information describing new sources, including an evaluation of the quality of the raw water from each new source. Water quality analyses shall be conducted by a laboratory certified under this chapter. This paragraph does not apply when the new source is finished water obtained from an existing permitted community water system or an existing permitted or approved noncommunity water system unless the Department provides written notice that one or more of the provisions of this paragraph apply.

(i) For transient noncommunity water systems, the evaluation must include analysis of the following:

(A) Nitrate (as nitrogen) and nitrite (as nitrogen).

(B) Total coliform concentration and, if total coliform-positive, analyze for the presence of *E. coli*.

(C) Any other contaminant which the Department determines is necessary to evaluate the potability of the source or which the Department has reason to believe is present in the source water and presents a health risk to the users of the system.

(ii) For nontransient noncommunity water systems, the evaluation must include the information required under § 109.503(a)(1)(iii)(B).

(b) A noncommunity water system providing 4-log treatment of a groundwater source under § 109.1302(b) (relating to treatment technique requirements) that has not obtained a construction permit under § 109.503 (relating to public water system construction permits) and an operations permit under § 109.504 (relating to public water system operation permits) shall obtain a noncommunity water system 4-log treatment of groundwater permit under § 109.1306 (relating to information describing 4-log treatment and compliance monitoring) and comply with subsection (a)(2)(ii).

Source

The provisions of this § 109.505 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (345335) to (345336).

Cross References

This section cited in 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.501 (relating to general permit requirements); 25 Pa. Code § 109.502 (relating to permitting of currently operating systems; compliance deadlines); 25 Pa. Code § 109.605 (relating to minimum treatment design standards); 25 Pa. Code § 109.715 (relating to seasonal systems); 25 Pa. Code § 109.1302 (relating to treatment technique requirements); and 25 Pa. Code § 109.1306 (relating to information describing 4-log treatment and compliance monitoring).

§ 109.506. Emergency permits.

(a) In emergency circumstances, the Department may issue permits for construction, operation or modifications to a public water system as the Department determines may be necessary to assure that potable drinking water is available to the public. Emergency permits shall be limited in duration and at the Department's discretion be conditioned on additional monitoring, reporting and implementation of appropriate emergency response measures. The Department may revoke an emergency permit if it finds the public water system is not complying with drinking water standards or the terms or conditions of the permit. Authorization for construction, operation or modifications obtained under an emergency permit will not extend beyond the expiration of the permit.

(b) State and Federal agencies conducting emergency response bulk water hauling operations are not required to obtain a permit under this subchapter, if a Department approved source is utilized and adequate monitoring is conducted to assure compliance with the microbiological MCL specified in § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements).

(c) Water suppliers having to comply with § 109.603(d) (relating to source quality and quantity) because of chronic water quantity problems shall apply for an amendment to their construction permit in accordance with § 109.503(b) (relating to public water system construction permits) to incorporate additional sources.

Source

The provisions of this § 109.506 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435. Immediately preceding text appears at serial page (290543).

Cross References

This section cited in 25 Pa. Code § 109.503 (relating to public water system construction permits).

§ 109.507. Permits for Innovative Technology.

The Department may consider proposals for innovative water treatment processes, methods or equipment and may issue an innovative technology construction or operation permit if the applicant demonstrates to the Department's satisfaction that the proposal will provide drinking water that complies with Subchapters B, L and M (relating to MCLs, MRDLs or treatment technique requirements; long-term 2 enhanced surface water treatment rule; and additional

requirements for groundwater sources). Applications for innovative technology construction permits must satisfy the requirements of § 109.503 (relating to public water system construction permits). The Department may condition innovative technology operation permits on duration, additional monitoring, reporting or other requirements as it deems necessary to protect the public health. The Department may revoke an innovative technology construction or operation permit if it finds the public water system is not complying with drinking water standards or the terms or conditions of the permit or if there is a significant change in the source water quality which could affect the reliability and operability of the treatment facility. Authorization for construction, operation or modifications obtained under an innovative technology permit will not extend beyond the expiration date of the permit.

Source

The provisions of this § 109.507 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended March 24, 1989, effective March 25, 1989, 19 Pa.B. 1289; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (313685) to (313686).

Cross References

This section cited in 25 Pa. Code § 109.503 (relating to public water system construction permits); and 25 Pa. Code § 109.602 (relating to acceptable design).

§ 109.508. [Reserved].

Source

The provisions of this § 109.508 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; reserved May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial pages (139092) and (136315).

§ 109.509. [Reserved].

Source

The provisions of this § 109.509 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; reserved May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial pages (136315) to (136316).

§ 109.510. [Reserved].

Source

The provisions of this § 109.510 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; reserved May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial page (136316).

Subchapter F. DESIGN AND CONSTRUCTION STANDARDS

Sec.

- 109.601. Application of standards.
- 109.602. Acceptable design.
- 109.603. Source quality and quantity.
- 109.604. Facilities siting.
- 109.605. Minimum treatment design standards.
- 109.606. Chemicals, materials and equipment.
- 109.607. Pressures.
- 109.608. Cross-connections.
- 109.609. Reserved capacity and finished water storage.
- 109.610. [Reserved].
- 109.611. Disinfection.
- 109.612. POE devices.

Cross References

This subchapter cited in 25 Pa. Code § 109.1 (relating to definitions); 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.503 (relating to public water system construction permits); 25 Pa. Code § 109.505 (relating to requirements for noncommunity water systems); 25 Pa. Code § 109.1005 (relating to permit requirements); and 25 Pa. Code § 109.1006 (relating to design and construction standards).

§ 109.601. Application of standards.

Standards in this subchapter apply to design and construction of public water systems and system modifications, regardless of whether a Department permit or permit amendment is required. The standards apply to new facilities and facility modifications unless otherwise specifically indicated.

Source

The provisions of this § 109.601 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

§ 109.602. Acceptable design.

(a) A public water system shall be designed to provide an adequate and reliable quantity and quality of water to the public. The design must ensure that the system will, upon completion, be capable of providing water that complies with the primary and secondary MCLs, MRDLs and treatment techniques established in Subchapters B, L and M (relating to MCLs, MRDLs or treatment technique requirements; long-term 2 enhanced surface water treatment rule; and additional requirements for groundwater sources) except as further provided in this section.

(1) The Department may approve control techniques such as nonremoval processes, which abate the problems associated with a secondary contaminant and achieve the objective of the secondary MCL.

(2) The Department may approve a design which may cause an exceedance of a secondary MCL if the exceedance directly results from a treatment method used to achieve compliance with a primary MCL, the level of the secondary

contaminant in the finished water does not represent an unreasonable risk to health nor otherwise adversely affect the normal uses of the finished water.

(b) Designs of public water facilities shall conform to accepted standards of engineering and design in the water supply industry and shall provide protection from failures of source, treatment, equipment, structures or power supply.

(c) The Department's *Public Water Supply Manual* sets forth design standards which the Department finds to be acceptable designs. Other designs may be approved by the Department if the applicant demonstrates the alternate design is capable of providing an adequate and reliable quantity and quality of water to the public.

(d) Filtration facilities permitted after May 16, 1992, unless otherwise authorized under § 109.507 (relating to permits for innovative technology), shall be designed to include individual sampling ports or turbidimeters on the raw source water line, on the influent line to the filters and on the effluent lines for each filter bed.

(e) Point-of-use devices which are treatment devices applied to a single tap are not an acceptable treatment method for complying with an MCL or treatment technique requirement.

Source

The provisions of this § 109.602 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (313687) to (313688).

Cross References

This section cited in 25 Pa. Code § 109.705 (relating to system evaluations and assessments).

§ 109.603. Source quality and quantity.

(a) Prior to the development of a new source or modification of an existing source, the water supplier shall make reasonable efforts to obtain the highest quality sources available. The supplier shall take reasonable measures to protect the source from existing or foreseeable sources of contamination and causes of diminution.

(b) For all construction permit applications accepted by the Department after October 9, 1995, a water supplier who is developing a community water system well, spring or infiltration gallery that is installed for a new system or as an expansion of an existing system shall:

(1) Own or substantially control through a deed restriction or other methods acceptable to the Department, the Zone I wellhead protection area in order to prohibit activities within Zone I that may have a potential adverse impact on source quality or quantity.

(2) Discontinue the storage, use or disposal of a potential contaminant within the Zone I wellhead protection area unless the chemical or material is used in the production or treatment, or both, of drinking water.

(3) Eliminate the storage of liquid fossil fuel within the Zone I wellhead protection area except for providing auxiliary power to the public water system to ensure the uninterrupted of essential services during power failures or as a primary heating source only when the use of natural gas or propane gas is not a viable option.

(4) Construct any new and replacement liquid fossil fuel tanks that are within the Zone I wellhead protection area aboveground within the pump house or an enclosed, locked structure using an impermeable secondary containment structure of greater capacity than the fuel storage tank.

(c) A water supplier developing a community water system well, spring or infiltration gallery that is installed to replace an existing source shall meet the conditions under subsection (b) to the extent feasible. The other requirements of this subchapter shall be met.

(d) A water supplier which, in a consecutive 2-year period, has experienced two or more outages or severe shortages caused by water quantity shortages at the system's regularly permitted sources, other than those outages or shortages occurring during a drought emergency declared by the Governor under 35 Pa.C.S. § 7301 (relating to general authority of Governor), shall investigate and develop additional sources as may be required to avert these same problems in the future.

Source

The provisions of this § 109.603 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175. Immediately preceding text appears at serial page (170188).

Cross References

This section cited in 25 Pa. Code § 109.506 (relating to emergency permits); and 25 Pa. Code § 109.705 (relating to system evaluations and assessments).

§ 109.604. Facilities siting.

(a) New facilities shall be located on sites which are not subject to floods, fires, earthquakes or other disasters which could cause a breakdown of the public water system or facilities. New facilities shall be protected against disasters.

(b) A new source shall be located to prevent or minimize impacts from existing potential sources of contamination and causes of diminution.

Source

The provisions of this § 109.604 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial page (139094).

§ 109.605. Minimum treatment design standards.

The level of treatment required for raw water depends upon the characteristics of the raw water, the nature of the public water system and the likelihood of contamination. The following minimum treatment design standards apply to new facilities and major changes to existing facilities:

(1) For surface water and GUDI sources, the minimum treatment design standard for filtration technologies is a 99% removal of *Giardia* cysts, and a 99% removal of *Cryptosporidium* oocysts. The determination of the appropriate filtration technology to be used shall be based on the following:

(i) Conventional filtration designed and operated in accordance with standards established in the Department's *Public Water Supply Manual* can be expected to achieve the minimum treatment design standard and shall be considered the best treatment for most surface water sources in this Commonwealth because of the multiple barriers of protection that it provides.

(ii) Direct filtration, slow sand filtration and diatomaceous earth filtration may be permitted if studies, including pilot studies where appropriate, approved by the Department are conducted and demonstrate, through achievement of the turbidity performance standards specified in § 109.202(c)(1)(i) (relating to State MCLs, MRDLs and treatment technique requirements), that the minimum treatment design standard can be achieved consistently, reliably and practically under appropriate design and operating conditions.

(iii) Other filtration technologies may be permitted after onsite studies, including pilot plant studies where appropriate, using seeded indicator organisms in the raw water or other equivalent means as approved by the Department, that demonstrate that the technology can consistently achieve the minimum treatment design standard.

(2) For surface water and GUDI sources, the minimum treatment design standard for disinfection technologies utilized prior to the first user of the system is a total of 99.9% inactivation of *Giardia* cysts and a 99.99% inactivation of viruses, except noncommunity water systems may propose, and the Department may approve, an alternative to the *Giardia* design standard when 99.9% inactivation is not feasible. Total treatment system disinfection capability will be credited toward this design standard. The CT factors and measurement methods established by the EPA are the criteria to be used in determining compliance with this minimum treatment design standard.

(3) For surface water and GUDI sources permitted after December 26, 2009, that are determined to be bin 2 or higher, the minimum treatment design for filtration and disinfection must also meet the requirements of §§ 109.1203 and 109.1204 (relating to bin classification and treatment technique requirements; and requirements for microbial toolbox components).

(4) For community water systems using groundwater, the minimum treatment design standard for disinfection technologies utilized at the entry point is a total of 99.99% treatment of viruses.

(5) For noncommunity water systems using groundwater with an *E. coli*-positive groundwater source sample collected under § 109.505(a)(3) (relating to requirements for noncommunity water systems), the minimum treatment design standard for disinfection technologies utilized at the entry point is a total of 99.99% treatment of viruses.

Source

The provisions of this § 109.605 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended March 24, 1989, effective March 25, 1989, 19 Pa.B. 1289; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895 and 3938; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (345337) to (345338).

§ 109.606. Chemicals, materials and equipment.

(a) Chemicals or materials which may come in contact with the water or affect the quality of the water may not be used unless the chemicals or materials are acceptable to the Department.

(b) Chemicals used by a public water supplier which may come in contact with or affect the quality of the water and which are certified for conformance with ANSI/NSF Standard 60 (Drinking Water Treatment Chemicals—Health Effects—National Sanitation Foundation) or meet the food grade standards of the *United States Pharmacopeia* are deemed acceptable to the Department.

(c) Materials used in the construction or modification of a public water system including waterline extensions which may come into contact with or affect the quality of the water and which are certified for conformance with ANSI/NSF Standard 61 (Drinking Water System Components—Health Effects—National Sanitation Foundation) are deemed acceptable to the Department.

(d) Acceptable certification under subsection (b) or (c) related to ANSI/NSF Standards 60 and 61 includes that performed by NSF International or other certification organization acceptable to the Department. To be acceptable to the Department, a certification organization shall be accredited by ANSI as a third party certification organization and meet the following requirements. The organization shall:

(1) Demonstrate it is independent of manufacturers using the certification organization's services.

(2) Require that a registered mark or seal be placed upon each product certified under ANSI/NSF Standard 60 or 61, as applicable.

(3) Maintain an ongoing quality assurance and quality control program that includes, at a minimum, the following:

(i) Periodic announced and unannounced factory follow-ups and audits at sufficient frequency and in sufficient detail to assure the product evaluated is the same as the product being manufactured.

(ii) Maintenance of or accessibility to a laboratory certified by the Department meeting the minimum laboratory certification criteria for drinking water analysis.

(iii) Maintenance of staff toxicologists or accessibility to toxicologists to perform the toxicological review and evaluation portions of the product assessments.

(iv) Maintenance of procedures for notification and recall of the use of the registered mark or seal for previously certified products which do not meet the certification requirements of ANSI/NSF Standards 60 and 61.

(4) Require appropriate product reevaluation depending upon the results of the factory follow-ups and audits and changes in the standards themselves.

(5) Perform certification evaluations for any manufacturer or applicant.

(6) Evaluate and certify an appropriately broad range of products—additives, direct additives or indirect additives.

(7) Maintain and publish a listing of certified products and distribute the listing to State regulatory agencies and others, as appropriate, at least annually.

(e) Facilities or equipment, including, but not limited to, pipes, pumping facilities and storage tanks, previously or currently used for the treatment, storage or transportation of wastewater, petroleum products or other nonfood products, except for facilities or equipment used to store or transport chemicals used in treating drinking water, may not be used for the treatment, transportation or storage of drinking water.

Source

The provisions of this § 109.606 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended December 24, 1993, effective December 25, 1993, 23 Pa.B. 6147; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175. Immediately preceding text appears at serial pages (185936) to (185937).

Cross References

This section cited in 25 Pa. Code § 109.612 (relating to POE devices); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); and 25 Pa. Code § 109.1005 (relating to permit requirements).

§ 109.607. Pressures.

(a) Distribution systems and distribution system modifications shall be designed and constructed to maintain normal operating pressures of not less than 25 p.s.i.g. nor more than 125 p.s.i.g. at the main, except that during periods of peak seasonal loads the pressures at the time of hourly maximum demand may be not less than 20 p.s.i.g. nor more than 150 p.s.i.g. and that during periods of hourly minimum demand the pressure may be not more than 150 p.s.i.g.

(b) A public water system may furnish a service which does not comply with the specifications in subsection (a) where compliance with the specifications would prevent it from furnishing adequate service to a customer or where called for by good engineering practices.

(c) The Department may require service improvements incorporating standards other than those set forth in this section when it determines that the improvements are necessary.

Source

The provisions of this § 109.607 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

Cross References

This section cited in 25 Pa. Code § 109.1006 (relating to design and construction standards).

§ 109.608. Cross-connections.

A public water system may not be designed or constructed in a manner which creates a cross-connection.

Source

The provisions of this § 109.608 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

§ 109.609. Reserved capacity and finished water storage.

(a) A new community water system shall be designed to provide an adequate supply of finished water during periods of peak demand. To assure continued service in the event of source contamination or outage, the design shall provide a minimum of 1 day of reserve capacity based on average daily demand or usage. Reserve capacity may be provided through finished water storage. In addition, reserve capacity may be provided through sources and interconnections not likely to be subject to the same contamination event. Sources and interconnections used for reserve capacity shall be permitted under §§ 109.503 and 109.504 (relating to public water system construction permits; and public water system operation permits).

(b) Finished water storage facilities shall be completely enclosed to prevent contamination of the finished water supply. This requirement applies to existing, as well as new, finished water storage facilities. Public water suppliers with existing finished water storage facilities shall comply with this section by December 31, 1995.

Source

The provisions of this § 109.609 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended March 24, 1989, effective March 25, 1989, 19 Pa.B. 1289; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial page (136320).

Cross References

This section cited in 25 Pa. Code § 109.707 (relating to emergency response).

§ 109.610. [Reserved].**Source**

The provisions of this § 109.610 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial pages (136320) and (139095).

§ 109.611. Disinfection.

Disinfection facilities shall be designed to provide the dosage rate and contact time prior to the first customer sufficient to provide a quality of water that complies with the microbiological MCL and the appropriate MRDL, specified in § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements) and the treatment technique requirements in § 109.1302 (relating to treatment technique requirements).

Source

The provisions of this § 109.611 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial page (345339).

§ 109.612. POE devices.

(a) POE devices may be approved by the Department for use only by a public water supplier serving 100 or fewer individuals for the treatment of sources permitted prior to May 16, 1992.

(b) POE devices used by a public water supplier shall be tested and certified by the NSF or other certification organization acceptable to the Department against ANSI/NSF standards established for drinking water treatment devices. To be acceptable to the Department a certification organization other than NSF shall have a program at least as stringent as the NSF program and meet the requirements under § 109.606(d) (relating to chemicals, materials and equipment) as applicable to ANSI/NSF standards for drinking water treatment devices.

(c) A public water supplier using POE devices as a means of treatment shall install a POE device on the service line to customers, except for customers who are provided with water that meets the requirements of Subchapter B (relating to MCLs, MRDLs or treatment technique requirements) without the use of a POE device.

(d) The design, installation and operation of a POE device shall be of a type that the microbiological safety of the water is maintained.

Source

The provisions of this § 109.612 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895. Immediately preceding text appears at serial page (254815).

Cross References

This section cited in 25 Pa. Code § 109.503 (relating to public water system construction permits).

Subchapter G. SYSTEM MANAGEMENT RESPONSIBILITIES

Sec.

- 109.701. Reporting and recordkeeping.
- 109.702. Operation and maintenance plan.
- 109.703. Facilities operation.
- 109.704. Operator certification.
- 109.705. System evaluations and assessments.
- 109.706. System distribution map.
- 109.707. Emergency response plan.
- 109.708. Planned service interruptions.
- 109.709. Cross-connection control program.
- 109.710. Disinfectant residual in the distribution system.
- 109.711. Disinfection of facilities prior to placing them into service.
- 109.712. Control of POE devices.
- 109.713. Wellhead protection program.
- 109.714. Filter profile, filter self-assessment and comprehensive performance evaluations.
- 109.715. Seasonal systems.
- 109.716. Nitrification control plan.

Cross References

This subchapter cited in 25 Pa. Code § 109.1 (relating to definitions); 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); and 25 Pa. Code § 109.505 (relating to requirements for noncommunity water systems).

§ 109.701. Reporting and recordkeeping.

(a) *Reporting requirements for public water systems.* Public water systems shall comply with the following requirements:

(1) *General reporting requirements.* Unless a different reporting period is specified in this chapter, the water supplier shall assure that the results of test measurements or analyses required by this chapter are reported to the Department within either the first 10 days following the month in which the result is received or the first 10 days following the end of the required monitoring period as stipulated by the Department, whichever is shorter. The test results shall include the following at a minimum:

- (i) The name, address and public water system identification number (PWSID) of the public water system from which the sample was taken.
- (ii) The name, address and identification number of the laboratory performing the analysis unless the analysis is not required to be performed by a certified laboratory.
- (iii) The results of analytical methods, including negative results.
- (iv) Contaminants.
- (v) Analytical methods used.
- (vi) The date of sample.
- (vii) The date of analysis.
- (viii) Sample location.

(2) *Monthly reporting requirements for performance monitoring.* In addition to the reporting requirements specified in paragraph (1), public water systems shall report performance monitoring data as follows:

(i) The test results of performance monitoring required under § 109.301(1) (relating to general monitoring requirements) for public water suppliers providing filtration and disinfection of surface water or GUDI sources must include the following at a minimum:

(A) For turbidity performance monitoring:

(I) The number of days of filtration operation.

(II) The number of filtered water turbidity measurements taken each month.

(III) The number of filtered water turbidity measurements that are less than or equal to 0.5 NTU for conventional, direct or other filtration technologies, or 1.0 NTU for slow sand or diatomaceous earth filtration technologies.

(IV) The date, time and values of any filtered water turbidity measurements exceeding 2.0 NTU.

(V) Instead of subclauses (III) and (IV), beginning January 1, 2002, for public water systems that serve 10,000 or more people and use conventional or direct filtration:

(-a-) The number of filtered water turbidity measurements that are less than or equal to 0.3 NTU.

(-b-) The date, time and values of any filtered water turbidity measurements exceeding 1 NTU.

(VI) Instead of subclauses (A)(III) and (IV), beginning January 1, 2005, for public water systems that serve fewer than 10,000 persons and use conventional or direct filtration:

(-a-) The number of filtered water turbidity measurements that are less than or equal to 0.3 NTU.

(-b-) The date, time and values of any filtered water turbidity measurements exceeding 1 NTU.

(VII) Instead of subclauses (III) and (IV), beginning January 1, 2002, for public water systems that serve 10,000 or more people and use other filtration technologies:

(-a-) The number of filtered water turbidity measurements that are less than or equal to 0.3 NTU or a more stringent turbidity performance level requirement that is based upon onsite studies and is specified by the Department.

(-b-) The date, time and values of any filtered water turbidity measurements exceeding 1 NTU or a more stringent turbidity performance level requirement that is based upon onsite studies and is specified by the Department.

(B) For performance monitoring of the residual disinfectant concentration of the water being supplied to the distribution system:

(I) The date, time and lowest value each day the residual disinfectant concentration remains equal to or greater than the required minimum.

(II) The initial date, time and value for each occurrence that the residual disinfectant concentration is less than the required minimum, and the subsequent date, time and value that the residual disinfectant concentration is equal to or greater than the required minimum.

(III) The date the entry point is not in operation.

(C) For performance monitoring of the log inactivation for Giardia, public water systems shall report as follows:

- (I) The date, time and lowest log inactivation value for each day the value remains equal to or greater than the required minimum.
- (II) The initial date, time and value for each occurrence that the log inactivation is less than the required minimum, and the subsequent date, time and value that the log inactivation is equal to or greater than the required minimum.
- (III) The date the entry point is not in operation.
- (D) For performance monitoring of the log inactivation for viruses, public water systems using a disinfectant other than chlorine to achieve log inactivation of viruses shall report as follows:
 - (I) The date, time and lowest log inactivation value for each day the value remains equal to or greater than the required minimum.
 - (II) The initial date, time and value for each occurrence that the log inactivation is less than the required minimum, and the subsequent date, time and value that the log inactivation is equal to or greater than the required minimum.
 - (III) The date the entry point is not in operation.
- (ii) The test results of performance monitoring required under § 109.301(2) for public water suppliers using unfiltered surface water or GUDI sources shall include the following, at a minimum:
 - (A) For turbidity performance monitoring:
 - (I) The date, time and value of each sample that exceeds 1.0 NTU.
 - (II) The date, time and highest turbidity value, if the turbidity does not exceed 1.0 NTU in a sample.
 - (B) For performance monitoring of the residual disinfectant concentration of the water being supplied to the distribution system:
 - (I) The date, time and lowest value each day the concentration is less than the residual disinfectant concentration required under § 109.202(c)(1)(iii) (relating to State MCLs, MRDLs and treatment technique requirements).
 - (II) If the concentration does not fall below that required under § 109.202(c)(1)(iii) during the month, report the date, time and lowest value measured that month.
 - (C) For performance monitoring of the *E. coli* or total coliform density determinations on samples of the source water immediately prior to disinfection: the date, time and value of each sample.
 - (iii) The test results from performance monitoring required under § 109.301(8)(v) of the residual disinfectant concentration of the water in the distribution system shall include the date, time and value of each sample.
- (3) *One-hour reporting requirements.* A public water supplier shall report the circumstances to the Department within 1 hour of discovery for the following violations or situations:
 - (i) A primary MCL or an MRDL has been exceeded or a treatment technique requirement has been violated under Subchapter B, K, L or M.
 - (ii) A sample result requires the collection of check samples under § 109.301.
 - (iii) Circumstances exist which may adversely affect the quality or quantity of drinking water including, but not limited to:
 - (A) The occurrence of a waterborne disease outbreak.

(B) A failure or significant interruption in key water treatment processes.

(C) A natural disaster that disrupts the water supply or distribution system.

(D) A chemical spill.

(E) An unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination.

(F) An overfeed of a drinking water treatment chemical that exceeds a published maximum use value, such as National Sanitation Foundation's "Maximum Use Value," as applicable.

(G) A situation that causes a loss of positive water pressure in any portion of the distribution system where there is evidence of contamination or a water supplier suspects a high risk of contamination.

(H) A lack of resources that adversely affect operations, such as staff shortages, notification by the power utility of planned lengthy power outages or imminent depletion of treatment chemical inventories.

(iv) Any sample result is *E. coli*-positive.

(4) *Notice.* The water supplier shall, within 10 days of completion of each public notification required under Subchapter D (relating to public notification) with the exception of a CCR, submit to the Department a certification that it has fully complied with the public notification requirements. The water supplier shall include with this certification a representative copy of each type of notice distributed, published, posted and made available to persons served by the system and to the media and a description of the means undertaken to make the notice available.

(5) *Siting plan.* The water supplier shall submit to the Department a written sample siting plan for routine and repeat coliform sampling as required under § 109.301(3) by September 24, 2016. A public water system that begins operation after September 24, 2016, shall submit the sample siting plan prior to serving water to the public.

(i) A sample siting plan must include, at a minimum, the following:

(A) A list of sample site locations as specified in § 109.303(a)(2) (relating to sampling requirements) in the distribution system to be used for routine monitoring purposes.

(B) The name of the company or individual collecting the samples.

(C) A sample collection schedule.

(D) Available repeat monitoring locations for each routine monitoring location.

(E) Triggered source water monitoring locations as specified under § 109.1303 (relating to triggered monitoring requirements for groundwater sources).

(F) The population served by the system.

(G) A description of the accessibility of sample sites.

(H) The beginning and ending dates of each operating season for seasonal systems.

(ii) A water supplier shall revise and resubmit its sample siting plan within 30 days of notification by the Department of a sample siting plan which fails to meet the criteria in subparagraph (i).

(iii) The water supplier shall notify the Department of subsequent revisions to a coliform sample siting plan as they occur. Revisions to a coliform

sample siting plan shall be submitted in written form to the Department within 30 days of notifying the Department of the revisions.

(6) *Records.* Upon request by the Department, the water supplier shall submit copies of records required to be maintained under this subchapter.

(7) *Form.* Reports required by this chapter shall be submitted in a manner or form acceptable to the Department.

(8) *Reporting requirements for disinfectant residuals.* In addition to the reporting requirements specified in paragraph (1), public water systems monitoring for disinfectant residuals under § 109.301 shall:

(i) Submit to the Department a written sample siting plan by October 29, 2018. A public water system that begins operation after April 28, 2018, shall submit the sample siting plan prior to serving water to the public. The sample siting plan for disinfectant residuals may be combined with the sample siting plan for coliforms specified in paragraph (5) if all content elements are included. At a minimum, the sample siting plan must include all of the following:

(A) A list of representative sample site locations in the distribution system to be used for residual disinfectant concentration monitoring. Representative locations include the following:

- (I) Dead ends.
- (II) First service connection.
- (III) Finished water storage facilities.
- (IV) Interconnections with other public water systems.
- (V) Areas of high water age.
- (VI) Areas with previous coliform detections.

(VII) Mixing zones for systems using chlorine and purchasing water from a system using chloramines or for systems using chloramines and purchasing water from a system using chlorine.

(B) Whether the sample site location is also used as a coliform, disinfection byproducts, or lead and copper sampling location.

(C) Whether the sample site location is located within a mixing zone.

(D) Whether online monitoring and recording will be substituted for grab sample measurements at the sample site location and the frequency of measurements by the online analyzer.

(E) A sample collection schedule.

(ii) Submit to the Department a revised sample siting plan within 30 days of notification by the Department that a sample siting plan fails to meet the criteria in clauses (A)—(E).

(iii) Notify the Department of subsequent revisions to a sample siting plan as they occur. Revisions to a sample siting plan shall be submitted in written form to the Department within 30 days of notifying the Department of the revisions.

(iv) Report to the Department the beginning and ending dates when a free chlorine burn is conducted for a system using chloramines.

(v) Report to the Department a daily average if online monitoring and recording is substituted for grab sample measurements.

(9) *Level 1 and Level 2 assessments.* A public water supplier shall:

(i) Submit an assessment form completed in accordance with § 109.705(b) (relating to system evaluations and assessments) to the Department within 30 days after the system learns that it has exceeded a trigger under § 109.202(c)(4).

(ii) Submit a revised assessment form in accordance with § 109.705(b) within 30 days of notification from the Department that revisions are necessary.

(10) *Noncompliance report.* Except where a different reporting period is specified in this chapter, the water supplier shall report to the Department within 48 hours the failure to comply with any National Primary Drinking Water Regulation, including the failure to comply with any monitoring requirement set forth in this chapter.

(b) *Reporting requirements for community water systems.* In addition to the reporting requirements for a public water system, a community water supplier shall comply with the following requirements:

(1) The water supplier shall prepare a monthly operational report on forms provided by the Department or in a form acceptable to the Department. The report shall be maintained on file by the operator for at least 2 years and submitted upon request of the Department. The report must include at least the following:

- (i) The water produced daily.
- (ii) The chemical added daily.
- (iii) The physical and chemical determinations taken daily.
- (iv) Water-level monitoring data for supply and any associated monitoring wells.
- (v) The maintenance performed.
- (vi) Operational problems.

(2) The water supplier shall comply with the applicable requirements of registration, reporting, recordkeeping and monitoring in Chapter 110, Subchapters B—E, regarding registration, reporting, recordkeeping and monitoring.

(3) The water supplier shall keep a record of complaints received from consumers related to the act or this chapter on forms provided by the Department or in a form acceptable to the Department. Water suppliers complying with the Pennsylvania Public Utility Commission (PUC) complaint recordkeeping requirements under 52 Pa. Code § 65.3 (relating to complaints) shall be in compliance with this subsection if the complaints related to the act or this chapter are cross referenced within the PUC required records in a manner to make them readily available. The records shall be maintained on file by the operator for at least 3 years and submitted upon request of the Department.

(c) *Reporting requirements for nontransient noncommunity water systems.* In addition to complying with the reporting requirements for public water systems under subsection (a), a nontransient noncommunity water system shall comply with subsection (b)(1) except that records of water produced daily are not required.

(d) *Record maintenance.* The public water supplier shall retain on the premises of the public water system or at a convenient location near the premises the following:

(1) Records of bacteriological and turbidity analyses which shall be kept for at least 5 years, and records of chemical analyses which shall be kept for at least 12 years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, if the following information is included:

- (i) The date, place and time of sampling, and the name of the person who collected the sample.

- (ii) Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or finished water sample, or other special purpose sample.
 - (iii) The date of analysis.
 - (iv) The laboratory, certification number and person responsible for performing the analysis.
 - (v) The analytical technique and methods used.
 - (vi) The results of the analysis.
- (2) Records of performance monitoring required under § 109.301, except for turbidity, which shall be kept for at least 3 years. Records of turbidity performance monitoring required under § 109.301 shall be kept for at least 5 years. At a minimum, these records must contain the reporting requirements under subsection (a).
- (3) Records of action taken by the public water supplier to correct violations of MCLs, MRDLs or treatment technique requirements, which shall be kept for at least 3 years after the last action taken with respect to the particular violation involved.
- (4) Copies of written reports or communications relating to sanitary surveys conducted by a water supplier or his agent, which shall be kept for at least 12 years.
- (5) Records concerning a variance or exemption granted to the system which shall be kept at least 5 years following the expiration of the variance or exemption.
- (6) Plans, specifications and permits for water system facilities which shall be kept for the life of the facility.
- (7) Records concerning the use of acrylamide and epichlorohydrin shall be kept for at least 12 years. These records must include verification that the chemicals used were certified for conformance with ANSI/NSF Standard 60 in accordance with § 109.606 (relating to chemicals, materials and equipment) and that the combination—or product—of dose and monomer level did not exceed the following:
- (i) Acrylamide = 0.05% dosed at 1 ppm (or equivalent).
 - (ii) Epichlorohydrin = 0.01% dosed at 20 ppm (or equivalent).
- (8) Copies of public notifications issued under Subchapter D and certifications made to the Department under subsection (a)(4) shall be kept for 3 years after issuance.
- (9) A copy of any assessment form and documentation of corrective actions completed as a result of those assessments or other available summary documentation of the sanitary defects and corrective actions taken under § 109.705(b) shall be kept at least 5 years after completion of the assessment or corrective action.
- (e) *Reporting requirements for public water systems required to perform individual filter monitoring under § 109.301(1)(iv).*
- (1) Public water systems required to perform individual filter monitoring shall report that they have conducted individual filter monitoring within 10 days following the end of each month that the system serves water to the public.
 - (2) Public water systems required to perform individual monitoring shall report individual filter turbidity results if individual filter turbidity measurements demonstrate that one or more of the following conditions exist:

(i) An individual filter has a measured turbidity level greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart.

(ii) An individual filter has a measured turbidity level of greater than 0.5 NTU in two consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous filter operation after the filter has been backwashed or otherwise taken offline.

(iii) An individual filter has a measured turbidity level greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of 3-consecutive months.

(iv) An individual filter has a measured turbidity level greater than 2.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of 2-consecutive months.

(3) Individual filter turbidity monitoring reported as required under paragraph (2) shall include the following at a minimum:

(i) Filter number.

(ii) Turbidity measurements.

(iii) The dates on which the exceedance occurred.

(iv) If an individual filter demonstrates a condition under paragraph (2)(i) or (ii), the date on which a filter profile was produced or the date on which the reason for a turbidity exceedance was determined.

(v) If an individual filter demonstrates a condition under paragraph (2)(iii), the date on which a filter self-assessment was conducted.

(vi) If an individual filter demonstrates a condition under paragraph (2)(iv), the date on which a comprehensive performance evaluation was conducted.

(f) *Alternative individual filter turbidity exceedance levels.* Public water systems using lime softening may apply to the Department for alternative individual filter turbidity exceedance levels if they demonstrate that the higher individual filter turbidity levels are due to lime carryover and not to degraded filter performance.

(g) *Monitoring plans for disinfectants, DBPs and DBP precursors.*

(1) *Stage 1 DBP Rule.* Systems required to monitor for disinfection byproducts under § 109.301(12)(i), disinfection byproduct precursors under § 109.301(12)(v) or disinfectant residuals under § 109.301(13) shall develop and implement a monitoring plan. The system shall maintain the plan and make it available for inspection by the Department and the general public no later than 30 days following the applicable compliance dates. Systems that use either surface water or GUDI sources shall submit a copy of the monitoring plan to the Department no later than 30 days prior to the date of the first report required under this subchapter. The Department may also require the plan to be submitted by any other system, regardless of size or source water type. After review, the Department may require changes in any of the plan components.

(i) The plan must include the following components:

(A) Specific locations and schedules for collecting samples for any parameters included in § 109.301(12) or (13).

(B) How the system will calculate compliance with the MCLs, MRDLs and treatment techniques.

(C) If approved for monitoring as a consecutive system, or if providing water to a consecutive system, the sampling plan shall reflect the entire distribution system.

(D) Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required under § 109.301(12)(i).

(ii) The system shall notify the Department of subsequent revisions to a monitoring plan as they occur. Revisions to a monitoring plan shall be submitted in written form to the Department within 30 days of notifying the Department of the revisions.

(iii) Copies of Stage 1 DBP Rule monitoring plans developed under this paragraph shall be kept for the same period of time as the Stage 1 DBP Rule records of analyses are required to be kept under subsection (d)(1).

(2) *Stage 2 DBP Rule.* Systems required to monitor for disinfection byproducts under § 109.301(12)(ii) shall comply with the following:

(i) *IDSE requirements.* The IDSE requirements established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.600—141.605 (relating to initial distribution system evaluations) are incorporated by reference except as otherwise established by this chapter.

(ii) *Stage 2 DBP Rule monitoring plan.*

(A) A public water system shall develop and implement a monitoring plan to be kept on file for Department and public review. The monitoring plan must contain the elements in subclauses (I)—(III) and be completed no later than the date systems conduct their initial monitoring under § 109.301(12)(ii)(A).

(I) Monitoring locations,

(II) Monitoring dates,

(III) Compliance calculation procedures

(B) Public water systems not required to submit an IDSE report under either 40 CFR 141.601 or 141.602 (relating to standard monitoring; and system specific studies) as incorporated by reference, and do not have sufficient § 109.301(12)(i) monitoring locations to identify the required number of Stage 2 DBP rule compliance monitoring locations, shall identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of Stage 2 DBP rule compliance monitoring locations have been identified. The system shall also provide the rationale for identifying the locations as having high levels of TTHM or HAA5. Systems that have more Stage 1 DBP rule monitoring locations than required for Stage 2 DBP rule compliance monitoring shall identify which locations will be used for Stage 2 DBP rule compliance monitoring by alternating selection of Stage 1 DBP rule monitoring locations representing high TTHM levels and high HAA5 levels

until the required number of Stage 2 DBP rule compliance monitoring locations have been identified.

(C) A public water system shall submit a copy of its monitoring plan to the Department prior to the date for initial monitoring specified in § 109.301(12)(ii), unless the system submits to the Department an IDSE report containing all the information required by clause (A).

(D) A public water system may revise its monitoring plan to reflect changes in treatment, distribution system operations and layout (including new service areas), or other factors that may affect TTHM or HAA5 formation, or for Department-approved reasons, after consultation with the Department regarding the need for changes and the appropriateness of changes. A system that changes monitoring locations, shall replace existing compliance monitoring locations with the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels. The Department may also require modifications in the system's monitoring plan. Systems shall submit a copy of the modified monitoring plan to the Department prior to the date the system is required to comply with the revised monitoring plan.

(iii) *Operational evaluation levels.*

(A) The operational evaluation level for TTHM and HAA5 is the sum of the two previous quarterly results plus twice the current quarter's result, divided by four. Public water systems that are monitoring quarterly shall calculate the TTHM and HAA5 operation evaluation levels for each monitoring location at the end of each calendar quarter.

(B) If the TTHM operational evaluation level exceeds 0.080 mg/L, or the HAA5 operational evaluation level exceeds 0.060 mg/L at any monitoring location, the system shall conduct an operational evaluation to identify the cause of the exceedance and submit a written report of the evaluation to the Department no later than 90 days after being notified of the analytical result that causes the system to exceed the operational evaluation level. The written report must be made available to the public upon request.

(C) The operational evaluation must include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedances.

(I) A system may request and the Department may allow a system to limit the scope of evaluation if the system is able to identify the cause of the operational evaluation level exceedance.

(II) The request to limit the scope of the evaluation does not extend the schedule in clause (B) for submitting the written report. The

Department must approve this limited scope of evaluation in writing and systems shall keep that approval with the completed report.

(iv) *Reporting and recordkeeping requirements.*

(A) For each monitoring location, public water systems shall report to the Department within 10 days of the end of any quarter in which monitoring is required any TTHM operational evaluation level that exceeded 0.080 mg/L and any HAA5 operational evaluation level that exceeded 0.060 mg/L during the quarter and the location, date, and the TTHM and HAA5 calculated operation evaluation level.

(B) Copies of Stage 2 DBP Rule monitoring plans developed under this subparagraph shall be kept for the same period of time as the Stage 2 DBP Rule records of analyses are required to be kept under subsection (d)(1).

(h) *Reporting and record maintenance requirements for systems recycling their waste streams.*

(1) Public water systems using surface water or GUDI sources and providing conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall notify the Department in writing by December 8, 2003. This notification shall include the following information:

(i) A plant schematic showing the origin of all flows that are recycled (including, but not limited to, spent filter backwash water, thickener supernatant and liquids from dewatering processes), the hydraulic conveyance used to transport them and the location where they are reintroduced back into the treatment plant.

(ii) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm) and Department-approved operating capacity for the plant.

(2) *Record maintenance.* Beginning June 8, 2004, public water systems using surface water or GUDI sources and providing conventional filtration or direct filtration and recycling spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall collect and retain on file recycle flow information specified in this paragraph. This information is for the previous year of recycling and shall be available to the Department for review and evaluation at the Department's request:

(i) A copy of the recycle notification and information submitted to the Department under subsection (h).

(ii) A list of all recycle flows and the frequency with which they are returned.

(iii) Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(iv) Typical filter run length and a written summary of how filter run length is determined.

(v) The type of treatment provided for the recycle flow.

(vi) Data on the physical dimensions of the equalization or treatment units, or both, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

(i) *Accuracy of data.*

(1) Each water supplier shall be responsible for the accurate reporting of data required under subsection (j) to the Department.

(2) Each water supplier shall be responsible for providing accurate monitoring and sample information to the accredited laboratory that is responsible for reporting data to the Department under § 109.810 (relating to environmental laboratory accreditation). Monitoring and sample information must include, but is not limited to, the monitoring frequency, monitoring period, sample location, and sample type.

(j) *Electronic reporting.* Within 90 days of written notification by the Department, a public water system shall submit electronically all of its monitoring data for the contaminants listed under § 109.304(c) (relating to analytical requirements).

(1) The Department will provide written notification to each public water system to begin submitting data electronically based on the following schedule:

(i) Systems serving more than 10,000 persons will be notified no sooner than November 23, 2009.

(ii) Systems serving more than 3,300 but less than 10,001 persons will be notified no sooner than May 23, 2010.

(iii) Systems serving more than 500 but less than 3,301 persons will be notified no sooner than November 23, 2010.

(iv) Systems serving less than 501 persons will be notified no sooner than May 23, 2011.

(v) New systems will be notified of the electronic reporting requirements at the time of issuance of the operation permit under § 109.504 (relating to public water system operation permits).

(2) The water supplier shall electronically submit all of its data using a secure computer application provided by the Department.

(3) The water supplier shall submit the required data electronically in accordance with the submission deadlines established in this section.

(4) In the event of a Department computer application failure, the Department will notify the water supplier of an alternate reporting method.

(5) In the event that a water supplier is unable to submit data electronically, due to circumstances beyond its control, the water supplier shall notify the Department prior to the applicable reporting deadline. If the Department determines that the circumstances were beyond the control of the water supplier, the Department will specify a temporary, alternate reporting method the water supplier shall use to meet the reporting deadline.

(6) A water supplier shall meet the requirements under this subsection, unless the water supplier assigns in writing the responsibility for reporting to an accredited laboratory or another approved party.

(k) *Monitoring plan to determine if a source is directly influenced by surface water.* Systems required to monitor under § 109.302(f) (relating to special monitoring requirements) shall develop and implement a monitoring plan. The system shall submit a copy of the monitoring plan to the Department for review and approval prior to the applicable compliance date. The plan must address the requirements under § 109.302(f).

(l) *Additional reporting and recordkeeping requirements for systems using surface water or GUDI sources.* In addition to the reporting and recordkeeping requirements of this subchapter, systems using surface water or GUDI sources shall also comply with the reporting and recordkeeping requirements of § 109.1206 (relating to reporting and recordkeeping requirements).

(m) *Additional reporting and recordkeeping requirements for systems using groundwater sources.* In addition to the reporting and recordkeeping requirements of this subchapter, systems using groundwater sources shall also comply with the reporting and recordkeeping requirements of § 109.1307 (relating to system management responsibilities).

Authority

The provisions of this § 109.701 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); section 3118 of the Water Resources Planning Act, 27 Pa.C.S. § 3118; and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.701 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended June 16, 1989, effective June 17, 1989, 19 Pa.B. 2543; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended April 23, 1999, effective April 24, 1999, 29 Pa.B. 2231; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895 and 3938; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended April 2, 2004, effective April 3, 2004, 34 Pa.B. 1758; amended June 18, 2004, effective June 19, 2004, 34 Pa.B. 3130; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended November 14, 2008, effective November 15, 2008, 38 Pa.B. 6266; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383452) to (383465).

Cross References

This section cited in 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.303 (relating to sampling requirements); 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.707 (relating to emergency response plan); 25 Pa. Code § 109.710 (relating to disinfectant residual in the distribution system); 25 Pa. Code § 109.714 (relating to filter profile, filter self-assessment and comprehensive performance evaluations); 25 Pa. Code § 109.810 (relating to reporting and notification requirements); 25 Pa. Code § 109.1003 (relating to monitoring requirements); 25 Pa. Code § 109.1008 (relating to system management responsibilities); 25 Pa. Code § 109.1107 (relating to system management responsibilities); and 25 Pa. Code § 109.1307 (relating to system management responsibilities).

§ 109.702. Operation and maintenance plan.

(a) A community water supplier shall develop an operation and maintenance plan for the community water system. The operation and maintenance plan must generally conform to the guidelines contained in the Department's *Public Water Supply Manual* and contain at least the following information:

- (1) A description of the facilities.
- (2) An explanation of startup and normal operation procedures.
- (3) Procedures for repairing and replacing water mains that conform to the Department and water industry standards.
- (4) A routine maintenance program.
- (5) Records and reporting system.
- (6) Sampling and analyses program.
- (7) Public notification elements in accordance with Subchapter D (relating to public notification) that include:
 - (i) Public notice templates.
 - (ii) EPA contaminant fact sheets, when available.
 - (iii) An explanation of appropriate methods of delivery of public notice in accordance with Subchapter D.
- (8) Staffing and training.
- (9) System evaluation program as required under § 109.705(a) (relating to system evaluations and assessments) including the wellhead protection program for any water system that develops one under § 109.713 (relating to wellhead protection program).
- (10) Safety program.
- (11) Emergency plan and operating procedures.
- (12) Manufacturer's manuals.
- (13) An interconnect, valve and blowoff exercise and testing program.
- (14) Date of last update.

(b) The community water supplier shall implement the operation and maintenance plan in accordance with accepted practices of the water supply industry.

(c) The community water supplier shall review and update the operation and maintenance plan as necessary to reflect changes in the operation or maintenance of the water system. The plan must be:

- (1) Placed in secure locations which are readily accessible to the water system's personnel.
- (2) Presented upon request to the Department.
- (d) Noncommunity water suppliers may be directed by the Department to develop and implement an operation and maintenance plan as provided for in this section when the public health is threatened by inadequate operation and maintenance of the facilities.

Authority

The provisions of this § 109.702 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.702 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005. Immediately preceding text appears at serial pages (347137) to (347138).

Cross References

This section cited in 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.503 (relating to public water system construction permits); and 25 Pa. Code § 109.1107 (relating to system management responsibilities).

§ 109.703. Facilities operation.

- (a) Public water system facilities approved by written permit from the Department shall be operated in a manner consistent with the terms and conditions of the permit to achieve the level of treatment for which the facilities were designed.
- (b) For surface water or GUDI sources, a public water supplier using filtration shall comply with the following requirements:
 - (1) By July 1, 1990, suppliers using conventional or direct filtration shall, after filter backwash, and before putting the backwashed filter back on line, filter-to-waste until the filter bed effluent turbidity is less than 0.5 NTU at the normal production flow rate.
 - (2) Beginning May 16, 1992, a supplier using slow sand filtration shall, following sanding, scraping or resanding of slow sand filters, filter-to-waste until one of the following occurs:
 - (i) The filter bed effluent turbidity is less than 1.0 NTU at the normal production flow rate.
 - (ii) A reduction in turbidity is achieved when the source water turbidity is less than 1.0 NTU.
 - (3) Beginning May 16, 1992, a supplier using diatomaceous earth filtration shall, following backwashing and recoating of diatomaceous earth filters, filter-to-waste until one of the following occurs:
 - (i) The filter bed effluent turbidity is less than 1.0 NTU at the normal production flow rate.
 - (ii) A reduction in turbidity is achieved when the source water turbidity is less than 1.0 NTU.

(4) For a conventional or direct filtration facility permitted prior to March 25, 1989, without filter-to-waste capability, the Department, upon the supplier's request, may allow the supplier to utilize other operating techniques which minimize the initial increased turbidity peak when a filter is initially placed back into service after backwashing. The technique, which may include filter settling periods, ramping open the effluent valve or use of a coagulant in the backwash water, shall be justified by a filter performance study approved by the Department.

(5) Except for public water systems covered under § 109.301(1)(iv) (relating to general monitoring requirements), a system with conventional or direct filtration facilities permitted prior to March 25, 1989, without individual filter bed turbidity monitoring capabilities shall conduct an annual filter bed evaluation program, acceptable to the Department, which includes an evaluation of filter media, valves, surface sweep and sampling of filter turbidities over one entire filter run; and shall submit to the Department, with the Annual Water Supply Report, a study that demonstrates that the water supplier's filter-to-waste or alternate approved operating procedures are meeting the operating conditions under paragraph (1) or (4).

Source

The provisions of this § 109.703 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended March 24, 1989, effective March 25, 1989, 19 Pa.B. 1289; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119. Immediately preceding text appears at serial pages (344232) to (344233).

§ 109.704. Operator certification.

(a) Community and nontransient noncommunity water systems shall have personnel certified under the Water and Wastewater Systems Operators' Certification Act (63 P. S. §§ 1001—1015.1) to operate and maintain a public water system.

(b) Transient noncommunity water systems shall have competent personnel qualified to operate and maintain the system's facilities.

Source

The provisions of this § 109.704 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119. Immediately preceding text appears at serial pages (344233) to (344234).

Cross References

This section cited in 25 Pa. Code § 109.304 (relating to analytical requirements); 25 Pa. Code § 109.504 (relating to public water system operation permits); 25 Pa. Code § 109.1107 (relating to system management responsibilities); and 25 Pa. Code § 252.6 (relating to accreditation-by-rule).

§ 109.705. System evaluations and assessments.

(a) A community water supplier shall conduct an evaluation of the water system at least annually. The evaluation shall include the following activities:

(1) Watershed surveillance consisting of an inspection of portions of the drainage area or wellhead protection area necessary to identify and evaluate actual and probable sources of contamination. An inspection of a wellhead protection area shall include a review of available information pertaining to possible sources of contamination such as underground storage tanks, onlot disposal systems and other activities that may have an adverse impact on water quality or quantity. Specific hydrogeological studies of sources of contamination are not necessary unless required under § 109.4, § 109.602 or § 109.603 (relating to general requirements; acceptable design; and source quality and quantity) or other rules of the Department.

(2) Evaluation of source protection, intake structures and transmission facilities.

(3) Treatment facilities inspection consisting of an evaluation of the effectiveness of the operation and maintenance procedures and the condition and operability of permitted facilities.

(4) Evaluation of finished water storage facilities and the distribution system.

(5) Pressure surveys consisting of a measurement of pressures at representative points in the distribution system, which shall include new water line extensions. Surveys shall be made during periods of maximum and minimum usage. Records of these surveys shall show the date and time of the beginning and end of the test and the location at which the test was made.

(b) A public water system shall conduct Level 1 and 2 assessments required under § 109.202(c)(4) (relating to State MCLs, MRDLs and treatment technique requirements). The public water system shall also comply with any expedited actions or additional actions required by the Department in the case of an *E. coli* MCL violation.

(1) A Level 1 or Level 2 assessment must include review and identification of the following elements, at a minimum:

(i) Atypical events that could affect distributed water quality or indicate that distributed water quality was impaired.

(ii) Changes in distribution system maintenance and operation that could affect distributed water quality, including water storage.

(iii) Sources and treatment processes that impact distributed water quality.

(iv) Existing water quality monitoring data.

(v) Inadequacies in sample sites, sampling protocols and sample processing.

(2) Within 30 days of triggering a Level 1 or Level 2 assessment under § 109.202(c)(4), a public water system shall complete the appropriate assessment and submit a report to the Department on forms acceptable to the Department.

(3) A Level 1 assessment shall be conducted by competent personnel qualified to operate and maintain the water system's facilities.

(4) A Level 2 assessment shall be conducted by one or more individuals meeting the following criteria:

(i) Holds a valid certificate issued under Chapter 302 (relating to administration of the water and wastewater operators' certification program) to operate a water system.

(ii) Maintains certification in the appropriate class and subclassifications as defined in Chapter 302 for the size and treatment technologies for the water system being assessed.

(5) The Department may conduct a Level 1 or Level 2 assessment in addition to the assessment conducted by the public water system.

(6) In the completed assessment report, the public water system shall describe all sanitary defects identified, corrective actions completed and a proposed timetable for any corrective actions not already completed. The assessment report may also note that no sanitary defects were identified.

(7) If the Department determines that a Level 1 or Level 2 assessment is not sufficient, the public water system shall consult with the Department within 14 days of receiving written notification from the Department that the assessment is not sufficient. Following consultation, the Department may require a public water system to revise the assessment. A public water system shall submit a revised assessment form to the Department no later than 30 days from the date of consultation.

(8) Public water systems shall correct sanitary defects found through either a Level 1 or Level 2 assessment conducted in accordance with this subsection. For corrections not completed by the time of submission of the assessment report, the public water system shall complete the corrective actions in compliance with a timetable approved by the Department in consultation with the system. The system shall notify the Department when each scheduled corrective action is completed.

(9) At any time during the assessment or corrective action phase, either the public water system or the Department may request a consultation with the other party to determine the appropriate actions to be taken. The public water system may consult with the Department on all relevant information that may impact its ability to comply with a requirement of this subsection.

(c) The following apply to significant deficiencies identified at public water systems supplied by a surface water source and public water systems supplied by a groundwater source under the direct influence of surface water:

(1) For sanitary surveys performed by the Department, a system shall respond in writing to significant deficiencies identified in sanitary survey reports no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.

(2) A system shall correct significant deficiencies identified in sanitary survey reports according to the schedule approved by the Department, or if there is no approved schedule, according to the schedule reported under paragraph (1) if the deficiencies are within the control of the system.

(d) Significant deficiencies identified by the Department at public water systems using groundwater shall comply with § 109.1302(c) (relating to treatment technique requirements).

Authority

The provisions of this § 109.705 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.705 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005. Immediately preceding text appears at serial pages (355066) and (347141).

Cross References

This section cited in 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.702 (relating to operation and maintenance plan); and 25 Pa. Code § 109.1008 (relating to system management responsibilities).

§ 109.706. System distribution map.

- (a) The community water supplier shall prepare and maintain on file a detailed map of the water system's transmission and distribution facilities.
- (b) A noncommunity water supplier shall submit a detailed map of the water system's transmission and distribution facilities at the request of the Department.
- (c) The map shall include information sufficient to allow the Department to analyze the distribution system and determine quantity, pressure and direction of flow from the sources to the customers, and shall include the type and size of pipes within the distribution system. The map shall be updated at least annually.

Source

The provisions of this § 109.706 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404. Immediately preceding text appears at serial page (192119).

§ 109.707. Emergency response plan.

- (a) A community water supplier shall develop a plan for the provision of safe and adequate drinking water under emergency circumstances. The emergency response plan must generally conform to the guidelines contained in the Department's *Public Water Supply Manual*, as applicable, and contain at least the following:
 - (1) *Organization table.* An organization table that includes a prioritized list of names and contact numbers of persons in charge of the water system during an emergency.
 - (2) *Communication procedures and contact information.* For each probable emergency situation, including, but not limited to, those specified in § 109.701(a)(3)(iii) (relating to reporting and recordkeeping), a list of appropriate contact persons and phone numbers for the following groups of people:
 - (i) Emergency management agencies within a water system's jurisdiction.
 - (ii) Key public officials within a water supplier's service area.
 - (iii) Government agencies including, but not limited to, the Department, Public Utility Commission, Department of Health, Department of Public Welfare and Pennsylvania Department of Agriculture.

- (iv) Facilities within a water supplier's service area, including, but not limited to, hospitals, schools, day-care facilities, nursing homes, social service agencies, industrial and commercial users.
- (v) Media.
- (vi) Equipment and chemical suppliers.
- (3) *Means of communication.* A list containing the following:
 - (i) Types of communication equipment.
 - (ii) Types of communication for public notification.
- (4) *Summary description of the system.* A list containing the following:
 - (i) Location of pertinent operational information.
 - (ii) Source information.
 - (iii) Treatment information.
 - (iv) Finished water storage.
- (5) *Assessment of available resources.* A list containing the following:
 - (i) Mutual aid agreements.
 - (ii) Emergency water supply equipment that includes procedures for providing reserve capacity according to § 109.609 (relating to reserved capacity and finished water storage) or an approved alternative water supply.
 - (iii) Power supply equipment.
 - (iv) Repair equipment.
 - (v) Vehicles and construction equipment.
 - (vi) Spare equipment.
- (6) *Corrective actions for probable emergency situations.* A list containing the following:
 - (i) Probable emergency situations including, but not limited to, those specified in § 109.701(a)(3)(iii).
 - (ii) Corrective actions for each probable emergency situation.
- (b) The community water supplier shall implement the emergency response plan when necessary.
- (c) The community water supplier shall review and update the plan at least annually and as necessary to reflect changes to communication procedures and contact information under subsection (a)(2). The community water supplier shall record the date of update on the plan. The plan must be:
 - (1) Placed in secure locations which are readily accessible to the water system's personnel.
 - (2) Presented upon request to the Department.

Authority

The provisions of this § 109.707 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4) and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.707 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 8, 2009, effective May 9, 2009, 39 Pa.B. 2334. Immediately preceding text appears at serial page (290567).

Cross References

This section cited in 25 Pa. Code § 109.407 (relating to general public notification requirements).

§ 109.708. Planned service interruptions.

The public water supplier shall give reasonable notice to the affected customers prior to a planned service interruption affecting quantity or quality of the water delivered to the customer. If the interruption is scheduled to exceed 8 hours and affect 15 or more service connections the water supplier shall also notify the Department.

Source

The provisions of this § 109.708 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

§ 109.709. Cross-connection control program.

(a) No person may introduce contaminants into a public water supply through a service connection of a public water system.

(1) It shall be the responsibility of the customer to eliminate cross-connections or provide backflow devices to prevent contamination of the distribution system from both backsiphonage and backpressure. Individual backflow preventors shall be acceptable to the public water supplier.

(2) If the customer fails to comply with paragraph (1) within a reasonable period of time, the water supplier shall discontinue service after reasonable notice has been made to the customer.

(b) At the direction of the Department, the public water supplier shall develop and implement a comprehensive control program for the elimination of existing cross-connections or the effective containment of sources of contaminations, and prevention of future cross-connections. A description of the program, including the following information, shall be submitted to the Department for approval:

(1) A description of the methods and procedures to be used.

(2) An implementation schedule for the program.

(3) Legal authority for implementation of the program, such as, by ordinance or rules.

(4) A time schedule for inspection of nonresidential customers' premises for cross-connections with appropriate recordkeeping.

(5) A public education program for residential customers.

(6) A description of the methods and devices which will be used to protect the water system.

(7) A program for the review of plans for new users to assure that no new cross-connections are developed.

(8) Provisions for discontinuance of water service, after reasonable notice, to premises where cross-connections exist.

Source

The provisions of this § 109.709 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

§ 109.710. Disinfectant residual in the distribution system.

(a) Until April 28, 2019, a disinfectant residual acceptable to the Department shall be maintained throughout the distribution system of the community water system sufficient to assure compliance with the microbiological MCLs and the treatment technique requirements specified in § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements). The Department will determine

the acceptable residual of the disinfectant considering factors such as type and form of disinfectant, temperature and pH of the water, and other characteristics of the water system.

(b) Until April 28, 2019, a public water system that uses surface water or GUDI sources or obtains finished water from another permitted public water system using surface water or GUDI sources shall comply with the following requirements:

(1) As a minimum, a detectable residual disinfectant concentration of 0.02 mg/L measured as total chlorine, combined chlorine or chlorine dioxide shall be maintained throughout the distribution system as demonstrated by monitoring conducted under § 109.301(1) and (2) or (8)(v) (relating to general monitoring requirements).

(2) Sampling points with nondetectable disinfectant residuals which have heterotrophic plate count (HPC) measurements of less than 500/ml are deemed to be in compliance with paragraph (1).

(3) When the requirements of paragraph (1) or (2) cannot be achieved, the supplier shall initiate an investigation under the Department's direction to determine the cause, potential health risks and appropriate remedial measures.

(c) Beginning April 29, 2019, a community water system using a chemical disinfectant or that delivers water that has been treated with a chemical disinfectant shall maintain a minimum residual disinfectant concentration throughout the distribution system sufficient to assure compliance with the microbiological MCLs and the treatment technique requirements specified in § 109.202. The minimum residual disinfectant concentration is 0.2 mg/L or another level approved by the Department for systems using an alternate oxidizing disinfection treatment. The residual disinfectant concentration shall be measured as follows:

(1) Free chlorine for systems using chlorine.

(2) Total chlorine for systems using chloramines.

(3) Both free chlorine and total chlorine for sampling locations in a mixing zone as identified in the monitoring plan.

(4) Both free chlorine and total chlorine when a system using chloramines is conducting a free chlorine burn.

(d) Beginning April 29, 2019, a nontransient noncommunity water system that has installed chemical disinfection or a transient noncommunity water system that has installed chemical disinfection in accordance with § 109.202(c)(1) or § 109.1302(b) (relating to treatment technique requirements) shall maintain a minimum residual disinfectant concentration throughout the distribution system sufficient to assure compliance with the microbiological MCLs and the treatment technique requirements specified in § 109.202. The minimum residual disinfectant concentration is 0.2 mg/L or another level approved by the Department for systems using an alternate oxidizing disinfection treatment. The residual disinfectant concentration shall be measured as follows:

(1) Free chlorine for systems using chlorine.

(2) Total chlorine for systems using chloramines.

(3) Both free chlorine and total chlorine for sampling locations in a mixing zone as identified in the monitoring plan.

(4) Both free chlorine and total chlorine when a system using chloramines is conducting a free chlorine burn.

(e) Beginning April 29, 2019, compliance with the disinfectant residual treatment technique will be based on the number of samples collected each month as specified in the system distribution sample siting plan submitted to the Department under § 109.701(a)(8) (relating to reporting and recordkeeping). Compliance will be determined as follows:

(1) For a public water system that collects less than 40 samples per month and uses only groundwater or purchased groundwater sources, if no more than 1 sample collected per month is less than the minimum level specified in subsection (c) or (d) for 2 consecutive months, the system is in compliance with the treatment technique.

(2) For a public water system that collects 40 or more samples per month or that uses surface water, GUDI, purchased surface water or purchased GUDI sources, if no more than 5% of the samples collected per month are less than the minimum level specified in subsection (c) or (d) for 2 consecutive months, the system is in compliance with the treatment technique.

(3) For systems reporting both free and total chlorine residual measurements in accordance with subsections (c) and (d), compliance shall be based on the higher residual measurement.

(4) A public water system that experiences a treatment technique violation shall notify the Department within 1 hour of discovery of the violation in accordance with § 109.701(a)(3) and issue a Tier 2 public notice in accordance with § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice).

(5) In addition to the requirements in paragraphs (1)—(4), a public water system that fails to meet the minimum level specified in subsection (c) or (d) at any sample location for 2 consecutive months or more shall conduct an investigation to determine the cause and appropriate corrective actions and shall submit a written report to the Department within 60 days.

(6) The Department may approve in writing an alternate compliance schedule if the water supplier submits a written request with supporting documentation by April 29, 2019.

(f) Public water systems may increase residual chlorine or chloramine, but not chlorine dioxide, disinfectant levels in the distribution system to a level that exceeds the MRDL for that disinfectant and for a time necessary to protect public health or to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm runoff events, source water contamination events or cross-connection events.

Authority

The provisions of this § 109.710 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.710 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; corrected December 14, 1984, effective December 8, 1984, 14 Pa.B. 4511; amended March 24, 1989, effective March 25, 1989, 19 Pa.B. 1289; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895 and 3938; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383472) to (383473).

Cross References

This section cited in 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); and 25 Pa. Code § 109.301 (relating to general monitoring requirements).

§ 109.711. Disinfection of facilities prior to placing them into service.

(a) After construction or modification of a facility and before the facility is placed in service, it shall be properly disinfected. The facility may not be placed in service until the public water supplier demonstrates to the satisfaction of the Department that the facility has been adequately disinfected.

(b) After repairing a facility or performing other activities which place the facility out of service, and before returning the facility to service, the public water supplier shall disinfect the facilities in accordance with the most recent procedures established by the American Water Works Association.

Source

The provisions of this § 109.711 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621. Immediately preceding text appears at serial page (139104).

§ 109.712. Control of POE devices.

(a) The public water supplier shall be responsible for control of POE devices installed under a permit according to § 109.503(a)(2) (relating to public water system construction permits). This includes the installation, operation and routine maintenance of each device.

(b) A public water supplier which installs a POE device shall obtain and maintain a right-of-access to the house, building or other facility where the POE device is installed in the form of a covenant running with the land.

Source

The provisions of this § 109.712 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621.

§ 109.713. Wellhead protection program.

For water suppliers seeking to obtain Department approval for a wellhead protection program, the wellhead protection program shall consist of the following:

(1) A steering committee composed of the necessary representatives, including, but not limited to, the water supplier, local government officials from the affected jurisdictions and potentially affected industry, to designate responsibilities for the planning and implementation of wellhead protection activities.

(2) Public participation and education activities to promote awareness and encourage local support of wellhead protection activities.

(3) Zone II and Zone III wellhead protection area delineation performed in accordance with methodology provided by the Department. Methods applicable to that hydrogeologic setting shall be utilized and site-specific hydraulic and hydrogeologic information shall include, but is not limited to, pumping rate or

yield, aquifer properties, water table or potentiometric surface configuration and hydrogeologic mapping.

(4) Identification of existing and potential sources of contamination within each wellhead protection area.

(5) Development and implementation of wellhead protection area management approaches to protect the water supply source from activities that may contaminate the source. These approaches may include, but are not limited to, one or more of the following actions:

(i) Purchase of the wellhead protection area by the water system.

(ii) Adoption of municipal ordinances or regulations controlling, limiting or prohibiting future potential sources of contamination within the wellhead protection area.

(iii) Adoption of municipal ordinances or regulations establishing design and performance standards for potential sources of contamination within the wellhead protection area.

(iv) Transfer of development rights within the wellhead protection area to land outside of the wellhead protection area.

(v) A groundwater monitoring network that serves as an early warning system.

(vi) Public education programs.

(vii) Other methods approved by the Department which will ensure an adequate degree of protection for the source.

(6) Contingency planning for the provision of alternate water supplies in the event of contamination of a well, spring or infiltration gallery and emergency responses to incidents that may impact water supply source quality.

(7) New water supply source siting provisions to ensure the protection of new wells, springs or infiltration galleries.

Source

The provisions of this § 109.713 adopted October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175.

Cross References

This section cited in 25 Pa. Code § 78a.15 (relating to application requirements); and 25 Pa. Code § 109.702 (relating to operation and maintenance plan).

§ 109.714. Filter profile, filter self-assessment and comprehensive performance evaluations.

Public water systems are required to perform or conduct a filter profile, filter self-assessment or CPE if any individual filter monitoring conducted under § 109.301(1)(iv) (relating to general monitoring requirements) demonstrates one or more of the conditions in paragraphs (1)—(3).

(1) If an individual filter demonstrates a condition under § 109.701(e)(2)(i) or (ii) (relating to reporting and recordkeeping), the public water system shall notify the Department within 24 hours of the individual filter turbidity level exceedance and shall report the obvious reason for the abnormal filter perfor-

mance. If a system serving 10,000 or more persons is not able to identify the reason for the exceedance, the system shall produce a filter profile within 7 days of the exceedance and report to the Department that a filter profile was produced.

(2) If an individual filter demonstrates a condition under § 109.701(e)(2)(iii), the public water system shall notify the Department within 24 hours of the individual filter turbidity level exceedance, shall conduct a self-assessment of the filter within 14 days of the exceedance and shall report to the Department that a filter self-assessment was conducted. A filter self-assessment shall consist of at least the following components:

- (i) Assessment of filter performance.
- (ii) Development of a filter profile.
- (iii) Identification and prioritization of factors limiting filter performance.
- (iv) Assessment of the applicability of corrections.
- (v) Preparation of a filter self-assessment report.
- (vi) For public water suppliers serving fewer than 10,000 persons, if a self-assessment is required, the public water supplier shall report the date that it was triggered and the date that it was completed.

(3) If an individual filter demonstrates a condition under § 109.701(e)(2)(iv), the public water system shall:

- (i) Notify the Department within 24 hours of the turbidity level exceedance.
- (ii) Arrange for the conduction of a CPE by the Department no later than 30 days following the turbidity level exceedance.
- (iii) Ensure that the CPE is completed and submitted to the Department no later than 90 days following the turbidity level exceedance.
- (iv) Instead of subparagraphs (ii) and (iii), for public water systems serving fewer than 10,000 persons:
 - (A) Arrange for the conduction of a CPE by the Department no later than 60 days following the turbidity level exceedance.
 - (B) Ensure that the CPE is completed and submitted to the Department no later than 120 days following the turbidity level exceedance.
 - (C) A new CPE is not required if a CPE was completed by the Department within the previous 12 months, or the system and the Department are jointly participating in a program involving a combination of CPE results as the bases for implementing process control priority-setting techniques and maintaining long-term involvement to systematically train staff and administrators at the system.
 - (D) If a CPE is required, the public water system shall report that a CPE is required and the date that it was triggered.

Source

The provisions of this § 109.714 adopted July 20, 2001, effective July 21, 2001, 31 Pa.B. 3938; amended June 18, 2004, effective June 19, 2004, 34 Pa.B. 3130. Immediately preceding text appears at serial pages (290571) to (290572).

§ 109.715. Seasonal systems.

(a) A new seasonal system shall submit a start-up procedure with the construction permit application or brief description as required under § 109.505(a) (relating to requirements for noncommunity water systems).

(b) A seasonal system approved by the Department to operate prior to September 24, 2016, shall submit a start-up procedure to the Department by October 24, 2016.

(c) If the Department determines that a start-up procedure is not sufficient, the public water system shall submit a revised start-up procedure within 30 days of receiving written notification from the Department.

(d) A seasonal system shall submit to the Department for approval any revisions to an approved start-up procedure prior to serving water to the public the next season.

(e) A seasonal system shall demonstrate completion of a Department-approved start-up procedure by submitting written certification prior to serving water to the public each season.

Authority

The provisions of this § 109.715 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.715 amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005.

Cross References

This section cited in 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); and 25 Pa. Code § 109.1008 (relating to system management responsibilities).

§ 109.716. Nitrification control plan.

(a) A public water system that uses chloramines or purchases water that contains chloramines shall develop a nitrification control plan by April 29, 2019. The plan must conform to the guidelines in industry standards such as the American Water Works Association's M56 Manual on Nitrification and contain at least the following information:

- (1) A system-specific monitoring plan that includes, at a minimum:

- (i) The list of parameters that will be monitored such as pH, free ammonia, total chlorine, monochloramine, HPC, nitrite and nitrate.
 - (ii) The monitoring locations.
 - (iii) The monitoring schedule.
- (2) A response plan with expected water quality ranges and action levels.
- (b) The public water system shall implement the nitrification control plan in accordance with accepted practices of the water supply industry.
 - (c) The public water system shall review and update the plan as necessary.
 - (d) The plan shall be retained onsite and shall be made available to the Department upon request.

Authority

The provisions of this § 109.716 issued under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.716 adopted April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509.

Subchapter H. LABORATORY CERTIFICATION

Sec.

- 109.801. Certification requirement.
- 109.802. [Reserved].
- 109.803. [Reserved].
- 109.804. [Reserved].
- 109.805. [Reserved].
- 109.806. [Reserved].
- 109.807. [Reserved].
- 109.808. [Reserved].
- 109.809. [Reserved].
- 109.810. Reporting and notification requirements.

Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter).

§ 109.801. Certification requirement.

A laboratory shall be accredited under Chapter 252 (relating to laboratory accreditation) to perform analyses acceptable to the Department for the purposes of ascertaining drinking water quality and demonstrating compliance with monitoring requirements established in Subchapters C, K, L and M.

Authority

The provisions of this § 109.801 amended under 27 Pa.C.S. §§ 4103(a), 4104 and 4105; and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

109-140.1

Source

The provisions of this § 109.801 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended January 27, 2006, effective January 28, 2006, 36 Pa.B. 465; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial page (317219).

§ 109.802. [Reserved].**Source**

The provisions of this § 109.802 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; reserved January 27, 2006, effective January 28, 2006, 36 Pa.B. 465. Immediately preceding text appears at serial page (290573).

§ 109.803. [Reserved].**Source**

The provisions of this § 109.803 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; reserved January 27, 2006, effective January 28, 2006, 36 Pa.B. 465. Immediately preceding text appears at serial pages (290573) to (290574).

§ 109.804. [Reserved].**Source**

The provisions of this § 109.804 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; reserved January 27, 2006, effective January 28, 2006, 36 Pa.B. 465. Immediately preceding text appears at serial page (290574).

§ 109.805. [Reserved].**Source**

The provisions of this § 109.805 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; reserved January 27, 2006, effective January 28, 2006, 36 Pa.B. 465. Immediately preceding text appears at serial pages (290574) to (290575).

§ 109.806. [Reserved].**Source**

The provisions of this § 109.806 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; reserved January 27, 2006, effective January 28, 2006, 36 Pa.B. 465. Immediately preceding text appears at serial page (290575).

§ 109.807. [Reserved].**Source**

The provisions of this § 109.807 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; reserved January 27, 2006, effective January 28, 2006, 36 Pa.B. 465. Immediately preceding text appears at serial page (290576).

§ 109.808. [Reserved].**Source**

The provisions of this § 109.808 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; reserved January 27, 2006, effective January 28, 2006, 36 Pa.B. 465. Immediately preceding text appears at serial page (290576).

§ 109.809. [Reserved].**Source**

The provisions of this § 109.809 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; reserved January 27, 2006, effective January 28, 2006, 36 Pa.B. 465. Immediately preceding text appears at serial pages (290576) and (305035).

§ 109.810. Reporting and notification requirements.

(a) Beginning November 13, 2009, a laboratory accredited under Chapter 252 (relating to environmental laboratory accreditation) shall electronically report to the Department on behalf of the public water supplier and in accordance with the reporting requirements under § 109.701(a) (relating to reporting and recordkeeping) the results of test measurements or analyses performed by the laboratory under this chapter using a secure computer application provided by the Department. In the event of a Department computer application failure, the Department will notify the laboratory of an alternate reporting method. In the event that a laboratory is unable to submit data electronically, due to circumstances beyond its control, the laboratory shall notify the Department prior to the applicable reporting deadline. If the Department determines that the circumstances were beyond the control of the laboratory, the Department will specify a temporary, alternate reporting method the laboratory shall use to meet the reporting deadline.

(1) Unless a different reporting period is specified in this chapter, these results shall be reported within either the first 10 days following the month in

which the result is determined or the first 10 days following the end of the required monitoring period as stipulated by the Department, whichever is shorter.

(2) Beginning November 23, 2009, an accredited laboratory and the public water supplier shall be given until the 10th of the following month to review and update submitted data using a secure computer application provided by the Department. Omissions and data errors remaining after the review period shall be considered reporting violations of the public water supplier.

(b) A laboratory accredited under Chapter 252 shall whenever the results of test measurements or analyses performed by the laboratory under this chapter indicate an MCL, MRDL or a treatment technique performance requirement under § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements) is exceeded, or an action level under § 109.1102(a) (relating to action levels and treatment technique requirements) is exceeded, or a sample result requires the collection of check or confirmation samples under § 109.301 (relating to general monitoring requirements), or any check sample collected under § 109.301(3) is total coliform-positive, or a sample collected by a seasonal system as part of a Department-approved start-up procedure under § 109.301(3)(i)(c) is total coliform-positive, or a sample collected under Subchapter M (relating to additional requirements for groundwater sources) is *E. coli*-positive:

(1) Notify the public water supplier by telephone within 1 hour of the laboratory's determination. If the supplier cannot be reached within that time, notify the Department by telephone within 2 hours of the determination. If it is necessary for the laboratory to contact the Department after the Department's routine business hours, the laboratory shall contact the appropriate Department regional office's after-hours emergency response telephone number and provide information regarding the occurrence, the name of a contact person and the telephone number where that individual may be reached in the event further information is needed. If the Department's appropriate emergency number cannot be reached, the laboratory shall notify the appropriate Department regional office by telephone within 1 hour of the beginning of the next business day. Each accredited laboratory shall be responsible for the following:

(i) Obtaining and then maintaining the Department's current after-hours emergency response telephone numbers for each applicable regional office.

(ii) Establishing or updating a standard operating procedure by November 8, 2002, and at least annually thereafter to provide the information needed to report the occurrences to the Department. The information regarding the public water system must include, but is not limited to, the PWSID number of the system, the system's name, the contaminant involved in the occurrence, the level of the contaminant found, where the sample was collected, the dates and times that the sample was collected and analyzed, the name and identification number of the accredited laboratory, the name and

telephone number of a contact person at the laboratory and what steps the laboratory took to contact the public water system before calling the Department.

(2) Notify the appropriate Department district office in writing within 24 hours of the determination. For the purpose of determining compliance with this requirement, the postmark, if the notice is mailed, or the date the notice is received by the Department, whichever is earlier, will be used. Upon approval by the Department, the notice may be made electronically to the Department as long as the information is received within the 24-hour deadline.

(c) A laboratory accredited under Chapter 252 shall meet the requirements under subsections (a) and (b), regarding the results of test measurements or analyses performed by the laboratory under this chapter, unless the laboratory assigns in writing the responsibility for reporting and notification to another accredited laboratory.

(d) A laboratory accredited under Chapter 252 shall be responsible for the accurate reporting of data required under this section to the Department.

Authority

The provisions of this § 109.810 amended under 27 Pa.C.S. §§ 4103(a), 4104 and 4105; section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1921 (71 P.S. § 510-20).

Source

The provisions of this § 109.810 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended January 27, 2006, effective January 28, 2006, 36 Pa.B. 465; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005. Immediately preceding text appears at serial pages (347150) and (347152).

Cross References

This section cited in 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.805 (relating to certification procedure); and 25 Pa. Code § 109.1302 (relating to treatment technique requirements).

Subchapter I. VARIANCES AND EXEMPTIONS ISSUED BY THE DEPARTMENT

Sec.

- 109.901. Requirements for a variance.
- 109.902. Variance request.
- 109.903. Requirements for an exemption.
- 109.904. Exemption request.
- 109.905. Public hearing on a variance or exemption.
- 109.906. Consideration of a request for a variance or exemption.
- 109.907. Disposition of a request for a variance or exemption.
- 109.908. Compliance schedules.

Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice; 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, time and delivery).

§ 109.901. Requirements for a variance.

(a) The Department may grant one or more variances to a public water system from a requirement respecting a MCL upon finding that:

(1) The public water system has installed and is using the best treatment technology, treatment methods or other means that the Department in concurrence with the Administrator finds are generally available to reduce the level of the contaminant, and has determined that alternative sources of water are not reasonably available.

(2) The water supplier has demonstrated to the Department that, because of characteristics of the raw water sources which are reasonably available to the system, the system cannot meet the requirements respecting the MCLs.

(3) The granting of a variance will not result in an unreasonable risk to the health of persons served by the system.

(b) The MCL for *E. coli* established under § 109.202(a) (relating to State MCLs, MRDLs and treatment technique requirements) is not eligible for a variance.

(c) The Department may grant one or more variances to a public water system from a treatment technique requirement upon a finding that the public water supplier applying for the variance has demonstrated that, because of the nature of the raw water source of the system the treatment technique is not necessary to protect the health of the persons served by the system. The treatment technique requirements established under § 109.202(c), the treatment technique requirements established under § 109.1102(b) (relating to action levels and treatment technique requirements), the treatment technique requirements established under §§ 109.1203 and 109.1302 (relating to bin classification and treatment technique requirements; and treatment technique requirements) are not eligible for a variance.

Authority

The provisions of this § 109.901 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.901 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005. Immediately preceding text appears at serial page (347153).

Cross References

This section cited in 25 Pa. Code § 109.902 (relating to variance request); 25 Pa. Code § 109.906 (relating to consideration of a request for a variance or exemption); 25 Pa. Code § 109.907 (relating to disposition of a request for a variance or exemption); and 25 Pa. Code § 109.908 (relating to compliance schedules).

§ 109.902. Variance request.

A water supplier may request the granting of a variance or a variance renewal for a public water system by submitting a request for a variance in writing to the Department. Water suppliers may submit a joint request for variances when they seek similar variances under similar circumstances. A written request for a variance shall include the following information:

- (1) The nature and duration of the variance requested.
- (2) Relevant analytical results of water quality sampling of the system including, but not limited to, results of tests required by Subchapter C (relating to monitoring requirements) and raw water quality analyses.
- (3) For a request made under § 109.901(a) (relating to requirements for a variance):
 - (i) Evidence that the best available treatment technology and techniques have been applied and a full explanation of the technology and techniques.
 - (ii) Factors relevant to ability to comply and availability of alternative raw water sources.
 - (iii) A proposed compliance schedule, including the date each step toward compliance will be achieved. The schedule shall include as a minimum the following dates:
 - (A) Date by which arrangement for alternative raw water source or improvement of existing raw water source will be completed.
 - (B) Date of initiation of the connection of the alternative raw water source or improvement of existing raw water source.
 - (C) Date by which final compliance is to be achieved.
 - (iv) A plan for the provision of safe drinking water in the case of an excessive rise in the contaminant level for which the variance is requested.
 - (v) A plan for interim control measures during the effective period of variance.
- (4) For a request made under § 109.901(b), a statement that the supplier will perform monitoring and other reasonable requirements prescribed by the Department in concurrence with the Administrator as a condition of the variance.
- (5) Other information believed to be pertinent by the applicant.
- (6) Other relevant information the Department may require.

Source

The provisions of this § 109.902 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

§ 109.903. Requirements for an exemption.

(a) The Department may exempt a public water system from an MCL or treatment technique requirement upon finding that:

(1) Due to compelling factors, the public water system is unable to comply with the contaminant level or treatment technique requirement, or to implement measures to develop an alternative source of water supply.

(2) The public water system was in operation on the effective date of the contaminant level or treatment technique requirement or, for a system that was not in operation by that date, only if no reasonable alternative source of drinking water is available to the new system.

(3) The granting of the exemption will not result in an unreasonable risk to health.

(4) Management or restructuring changes or both as provided in 40 CFR 142.20(b)(1)(i) (relating to State-issued variances and exemptions under Section 1415(a) and Section 1416 of the Act) cannot reasonably be made that will result in compliance with the applicable MCL or treatment technique requirement or, if compliance cannot be achieved, improve the quality of the drinking water.

(b) The MCL for *E. coli* established under § 109.202(a) (relating to State MCLs, MRDLs and treatment technique requirements) is not eligible for an exemption.

(c) The treatment technique requirements established under § 109.202(c), the treatment technique requirements established under §§ 109.1102(b), 109.1203 and 109.1302 (relating to action levels and treatment technique requirements; bin classification and treatment technique requirements; and treatment technique requirements) are not eligible for an exemption.

Authority

The provisions of this § 109.903 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.903 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005. Immediately preceding text appears at serial pages (347154) to (347155).

Cross References

This section cited in 25 Pa. Code § 109.906 (relating to consideration of a request for a variance or exemption); and 25 Pa. Code § 109.908 (relating to compliance schedules).

§ 109.904. Exemption request.

A water supplier may request the granting of an exemption for a public water system by submitting a request for exemption in writing to the Department. Water suppliers may submit a joint request for exemptions when they seek similar

exemptions under similar circumstances. A written request for an exemption shall include the following information:

- (1) The nature and duration of exemption requested.
- (2) Relevant analytical results of water quality sampling of the system, including results of relevant tests required by Subchapter C (relating to monitoring requirements).
- (3) Explanation of the compelling factors which prevent the system from achieving compliance.
- (4) Other information believed by the applicant to be pertinent to the application.
- (5) A plan for the provision of safe drinking water in the case of an excessive rise in the contaminant for which the public water system is requesting a maximum contaminant level or treatment technique requirement exemption.
- (6) A proposed compliance schedule, including the date when each step toward compliance will be achieved.
- (7) Other relevant information the Department may require.

Source

The provisions of this § 109.904 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

§ 109.905. Public hearing on a variance or exemption.

Upon receipt of a request for a variance, variance renewal or exemption, the Department will review the application for completeness and eligibility for the relief requested. If the application is incomplete or the public water system is not eligible for the relief requested, the Department will return the application with a written explanation of the reason for the return. If the Department's preliminary review finds the application is complete and the public water system may be eligible for a variance or exemption, the Department will provide an opportunity for a public hearing and public comments.

- (1) Notice of a public hearing on a proposed variance or exemption will be circulated in a manner designed to inform interested and potentially interested persons of the variance or exemption requests under consideration.
 - (i) The Department will post a notice in prominent public buildings of the municipalities or areas served by the public water system, and publish a notice in a newspaper or newspapers of general circulation in the area served by the public water system.
 - (ii) The Department will mail a notice to other appropriate State or local agencies at the Department's discretion.
 - (iii) The notice will include the following:
 - (A) A summary of the variance or exemption requested including the applicant's proposed schedule for compliance.
 - (B) A description to the service area or portions of service area affected by the proposed variance or exemption.

(C) An invitation to interested persons to register their interest in a public hearing by calling or writing to the contact person whose address and phone number is included in the notice or to provide written comments on the proposal.

(D) The address of the Department office and other locations where a complete copy of the application may be obtained.

(E) A proposed date, time, and location for a public hearing on the proposed variance or exemption.

(iv) The Department will publish the notice in the *Pennsylvania Bulletin*, providing at least 30 days for public comment from the date of publication.

(2) If the Department receives no indication of interest in response to the notice for public hearing within 30 days, the Department may issue a notice cancelling the public hearing. The notice will be posted, published and circulated in the same manner as the notice for public hearing set forth in paragraph (1). The notice shall include:

(1) The notice shall include:

(i) A summary of the variance or exemption requested and the proposed schedule for compliance.

(ii) A description of the service area or portions of service area affected by the proposed variance or exemption.

(iii) An invitation for interested persons to provide written comments and the address of the contact person from whom further information can be obtained and to whom comments should be addressed.

(iv) A final date for the receipt of written comments, which will be no less than 30 days from the date of the notice of public hearing.

(3) A hearing convened under paragraph (1) will be conducted before a hearing officer to be designated by the Department. The hearing will be conducted by the hearing officer in an informal, orderly, and expeditious manner. The hearing officer will have authority to call witnesses, receive oral and written testimony, and take action necessary to assure the fair and efficient conduct of the hearing.

Source

The provisions of this § 109.905 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479.

§ 109.906. Consideration of a request for a variance or exemption.

The Department will consider comments received during the comment period and testimony in the record of a public hearing held with respect to the request for a variance or exemption before making a determination. The Department will consider the availability of alternative water sources, risks to the public health from granting the relief requested and other relevant factors including the following considerations:

(1) In its consideration of whether the public water system satisfies the requirements for a variance from a maximum contaminant level under § 109.901(a) (relating to requirements for a variance), the Department will

consider whether the public water system has installed and is effectively operating the best treatment technology, treatment methods, or other means that the Department finds in concurrence with the Administrator are generally available to reduce the level of the contaminant for which the variance is requested, and whether the system has evaluated that alternative sources of water are not reasonably available.

(2) In its consideration of whether a public water system satisfies the requirements for a variance from a treatment technique requirement under § 109.901(b), the Department will consider the following factors:

- (i) The quality of the water source and pertinent sources of pollution.
- (ii) The source protection measures employed by the public water system.

(3) In its consideration of whether a public water system satisfies the requirements for an exemption under § 109.903 (relating to requirements for an exemption), the Department will consider factors such as:

- (i) The need for construction, installation, or modification of treatment equipment or systems.
- (ii) The time needed to put into operation a new treatment facility to replace an existing system which is not in compliance.
- (iii) The availability of an alternative source of water, including the feasibility of partnerships with neighboring public water systems, as identified by the public water system or by the Department.

Source

The provisions of this § 109.906 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial pages (290583) to (290584).

§ 109.907. Disposition of a request for a variance or exemption.

(a) If the Department proposes to deny the application for a variance or exemption, it will notify the applicant of its preliminary determination to issue a denial. The notice will include a statement of reasons for the proposed denial, and will offer the applicant an opportunity to present, within 30 days of receipt of the notice, additional information or argument to the Department. The Department will make a final determination on the request after receiving the additional information or argument. If no additional information or argument is submitted by the applicant, the application will be denied.

(b) If the Department makes a determination to grant a variance or exemption request, it will notify the applicant of the decision in writing. The notice will identify the variance or exemption, the facility covered, and will specify the period of time for which the variance or exemption will be effective.

(1) For an exemption or the type of variance in § 109.901(a) (relating to requirements for a variance), the notice will provide that the variance or exemption will be terminated when the system comes into compliance with the applicable maximum contaminant level requirement, and may be rescinded

upon a finding by the Department that the system has failed to comply with the final schedule or other terms or conditions of the variance or exemption.

(2) For the type of variance specified in § 109.901(b), the notice will provide that the variance may be terminated at any time the Department finds that:

(i) The nature of the raw water source is such that the specified treatment technique from which the variance was granted is necessary to protect the health of persons served by the system.

(ii) The public water system has failed to comply with monitoring or other terms or conditions of the variance.

(3) Variances are effective for the period stated in the variance, which may not exceed 2 years from the date of issuance.

(4) No exemption may extend beyond the expiration dates prescribed in the Federal act and the Federal regulations.

(c) If the Department makes a determination to grant a variance or exemption request, it will document its findings as required under 40 CFR 142.20(a)(1) (relating to State-issued variances and exemptions under section 1415(a) and section 1416 of the act) for granting a variance, and under 40 CFR 142.20(b)(1) for granting an exemption.

Source

The provisions of this § 109.907 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial page (290584).

§ 109.908. Compliance schedules.

(a) For a variance specified in § 109.901(a) (relating to requirements for a variance) or an exemption specified in § 109.903 (relating to requirements for an exemption), the Department will issue a schedule for:

(1) Compliance by the public water system with the maximum contaminant level requirement covered by the variance or exemption and the treatment technique requirement covered by the exemption.

(2) Implementation by the public water supplier of control measures as the Department may require for the contaminant covered by the variance or exemption. The schedule will specify interim treatment techniques, methods and equipment, and dates by which steps toward meeting the interim control measures are to be completed.

(b) For a variance specified by § 109.901(a), the schedule for compliance will specify dates by which steps toward compliance are to be taken, including:

(1) Date by which arrangement for an alternative raw water source or improvement of existing raw water source will be completed.

(2) Date of initiation of the connection for the alternative raw water source or improvement of the existing raw water source.

(3) Date by which final compliance is to be achieved.

(c) The schedule for a variance shall cover a time period no greater than 2 years. A new schedule covering a time period no greater than 2 years shall be proposed for the variance renewal.

(d) The compliance schedule for an exemption will be limited to the time reasonably necessary for the public water system to achieve compliance, and will not extend beyond the dates prescribed in the Federal act or Federal regulations for the expiration of exemptions.

(e) In accordance with 40 CFR 142.20(b)(2) (relating to State-issued variances and exemptions under section 1415(a) and section 1416 of the act), the Department may renew an exemption for a public water system that serves fewer than 3,300 persons and which needs financial assistance for the necessary improvements under the initial compliance schedule, provided the Department establishes that the system is taking all practicable steps to meet the requirements of this subchapter and the established compliance schedule to achieve full compliance with the applicable MCL or treatment technique requirement. The Department must document its findings in granting an extension under this subsection.

Source

The provisions of this § 109.908 adopted December 7, 1984, effective December 8, 1984, 14 Pa.B. 4479; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279. Immediately preceding text appears at serial page (290585).

Subchapter J. BOTTLED WATER AND VENDED WATER SYSTEMS, RETAIL WATER FACILITIES AND BULK WATER HAULING SYSTEMS

Sec.

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Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter).

§ 109.1001. Scope.

This subchapter applies to bottled water systems, vended water systems, retail water facilities and bulk water hauling systems.

Source

The provisions of this § 109.1001 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621.

§ 109.1002. MCLs, MRDLs or treatment techniques.

(a) Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall supply drinking water that complies with the MCLs, MRDLs and treatment technique requirements under §§ 109.202 and 109.203

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(relating to State MCLs, MRDLs and treatment technique requirements; and unregulated contaminants). Bottled water systems, vended water systems, retail water facilities and bulk water hauling systems using surface water or GUDI sources shall comply with the requirements in § 109.204 (relating to disinfection profiling and benchmarking). Bottled water systems, vended water systems, retail water facilities and bulk water hauling systems shall provide continuous disinfection for groundwater sources. Water for bottling labeled as mineral water under § 109.1007 (relating to labeling requirements for bottled water systems, vended water systems and retail water facilities) shall comply with the MCLs except that mineral water may exceed the MCL for total dissolved solids.

(b) Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall supply drinking water that contains no more than 0.005 mg/L of lead and no more than 1.0 mg/L copper.

(c) Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with the treatment technique requirements under Subchapter L (relating to long-term 2 enhanced surface water treatment rule).

(d) Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with Subchapter M (relating to additional requirements for groundwater sources). For the purpose of determining compliance with Subchapter M, bottled water and vended systems, retail water facilities and bulk water hauling systems using groundwater sources shall comply with standards pertaining to noncommunity groundwater systems.

Authority

The provisions of this § 109.1002 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.1002 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383489) to (383490).

Cross References

This section cited in 25 Pa. Code § 109.1005 (relating to permit requirements); 25 Pa. Code § 109.1006 (relating to design and construction standards); and 25 Pa. Code § 109.1009 (relating to system operational requirements).

§ 109.1003. Monitoring requirements.

(a) *General monitoring requirements.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall monitor for compliance with the MCLs, MRDLs and treatment techniques as follows, except that systems which have installed treatment to comply with a primary MCL shall conduct quarterly operational monitoring for the contaminant which the treatment is designed to remove:

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(1) Bottled water systems, retail water facilities and bulk water hauling systems, for each entry point shall:

(i) Monitor weekly for the presence or absence of total coliform. For any total coliform positive routine or check sample, determine the presence or absence of *E. coli*. All analyses must be conducted in accordance with analytical techniques approved by the Department under § 109.304 (relating to analytical requirements). A system may forego *E. coli* testing on a total coliform-positive sample if the system assumes that any total coliform-positive sample is also *E. coli*-positive. A system which chooses to forego *E. coli* testing shall, under § 109.701(a)(3) (relating to reporting and record-keeping), notify the Department within 1 hour after the water system learns of the violation or the situation, and shall provide public notice in accordance with § 109.1004 (relating to public notification).

(ii) Monitor for turbidity every 4 hours or continuously each day a surface water or GUDI source is in use.

(iii) Monitor for compliance with the MCLs for VOCs in accordance with § 109.301(5) beginning during the quarter that begins January 1, 1995, except that:

(A) Systems that obtain finished water from another permitted public water system are exempt from conducting monitoring for the VOCs if the public water system supplying the finished water performs the required monitoring at least annually and a copy of the analytical reports are received by the Department.

(B) For systems in existence prior to January 1, 1995, that obtain raw water from only protected groundwater sources, initial monitoring for compliance with the MCLs for VOCs established by the EPA under 40 CFR 141.61(a) (relating to MCLs for organic contaminants) on January 30, 1991, and July 17, 1992, will be reduced to one sample for entry points or systems which meet the following conditions:

(I) The VOC monitoring required by the Department between January 1, 1988, and December 31, 1994, has been conducted and no VOCs were detected.

(II) The first quarter of VOC monitoring required by this subparagraph has been conducted during the first quarter of 1995 with no detection of a VOC.

(C) Initial monitoring of new entry points associated with new sources which are permitted in accordance with § 109.1005 (relating to permit requirements) to begin operation after December 31, 1994, shall be conducted as follows:

(I) Entry points at which a VOC is detected during new source monitoring shall be monitored quarterly beginning the first quarter the entry points begin serving the public. Quarterly monitoring shall continue until reduced monitoring is granted in accordance with clause (D)(I).

(II) Entry points at which no VOC is detected during new source monitoring shall begin initial quarterly monitoring during the first calendar quarter of the year after the entry point begins serving the public.

(D) Repeat monitoring for entry points shall be conducted as follows:

(I) For an entry point at which a VOC is detected during initial monitoring or where a VOC is detected anytime at a level in excess of its MCL, compliance monitoring shall be repeated quarterly for the VOCs for which the EPA has established MCLs under 40 CFR 141.61(a), except for vinyl chloride as provided in § 109.301(5)(i). After analyses of four consecutive quarterly samples at an entry point, including initial quarterly monitoring samples, demonstrate that the VOC levels in each quarterly sample are less than the MCLs, the required compliance monitoring is reduced to one sample per year at that entry point for all 21 VOCs, except for vinyl chloride as provided in § 109.301(5)(i).

(II) For a groundwater or surface water entry point at which VOCs are not detected during the initial and subsequent repeat monitoring, repeat monitoring shall be one sample per year from that entry point.

(iv) Conduct initial and repeat monitoring for compliance with the MCLs for SOCs—pesticides and PCBs—in accordance with § 109.301(6) for four consecutive quarters beginning during the quarter that begins January 1, 1995, except that:

(A) Systems that obtain finished water from another permitted public water system are exempt from conducting compliance monitoring for the SOCs if one of the following applies:

(I) The public water system supplying the finished water performs the required monitoring annually and a copy of the analytical results are received by the Department.

(II) The public water system supplying the water has been granted a waiver from conducting the initial or repeat compliance monitoring, or both, for one or more SOCs under § 109.301(6)(v). This exemption from conducting compliance monitoring applies only to SOCs indicated in the waiver.

(B) Systems which are granted an initial monitoring waiver in accordance with § 109.301(6)(v) are exempt from conducting compliance monitoring for the SOCs indicated in the waiver.

(C) Initial monitoring of new entry points associated with new sources which are permitted in accordance with § 109.1005 to begin operation after December 31, 1994, shall be conducted as follows:

(I) Entry points at which an SOC is detected during new source monitoring shall be monitored quarterly beginning the first quarter the entry points begin serving the public. Quarterly monitoring shall continue until reduced monitoring is granted in accordance with clause (D)(I).

(II) Entry points at which no SOC is detected during new source monitoring and which begin operation before April 1, 1995, shall conduct initial quarterly monitoring beginning during the quarter beginning January 1, 1995.

(III) Entry points at which no SOC is detected during new source monitoring and which begin operation after March 31, 1995, shall conduct initial quarterly monitoring beginning during the first calendar quarter of the year after the entry point begins serving the public.

(D) Repeat monitoring for entry points shall be conducted as follows:

(I) For entry points at which an SOC is detected during initial monitoring or where an SOC is detected anytime in excess of its MCL, compliance monitoring shall be repeated quarterly for the detected SOC for which the EPA has an established MCL under 40 CFR 141.61(c). After analyses of four consecutive quarterly samples at an entry point, including initial quarterly monitoring samples, demonstrate that the SOC level in each quarterly sample is less than the MCL, the required compliance monitoring is reduced for each SOC below the MCL to one sample per year at that entry point.

(II) For a groundwater or surface water entry point at which SOCs are not detected during the initial and any subsequent repeat monitoring, repeat monitoring shall be one sample per year from that entry point.

(v) Beginning in 1995, monitor for the primary IOCs, including lead and copper annually, except that:

(A) Systems are granted a waiver from asbestos monitoring unless the Department determines that the system's finished water is vulnerable to asbestos contamination by means of an asbestos cement pipe or the system's source water is vulnerable to asbestos contamination.

(B) Systems that obtain finished water from another permitted public water system are exempt from conducting compliance monitoring for the IOCs, except lead, copper and asbestos if the supplying system has not optimized corrosion control, if the public water system supplying the finished water performs the required monitoring annually and a copy of the analytical results is received by the Department.

(C) Monitoring for compliance with the MCLs for nitrate and nitrite shall be conducted quarterly following a monitoring result which is equal to or greater than 50% of the MCL. After four consecutive quarterly samples, indicate nitrate and nitrite in each sample are less than 50% of the MCLs, required monitoring is reduced to one sample per year.

(vi) Conduct operational monitoring for fluoride at least once each day, if the system fluoridates its water.

(vii) Monitor for compliance with radiological MCLs once every 4 years.

(viii) *TTHM and HAA5 Stage 1 DBP Rule.* Beginning January 1, 2004, monitor annually for TTHM and HAA5 if the system uses a chemical disinfectant or oxidant, or obtains finished water from another public water system that uses a chemical disinfectant or oxidant to treat the water. Bottled water systems are not required to monitor for TTHM and HAA5 if the sys-

tem does not use a chlorine-based disinfectant or oxidant and does not obtain finished water from another public water system that uses a chlorine-based disinfectant or oxidant to treat the water.

(A) *Routine monitoring.* Systems shall take at least one sample per year per entry point during the month of warmest water temperature. If the sample, or average of all samples, exceeds either a TTHM or HAA5 MCL, the system shall take at least one sample per quarter per entry point. The system shall return to the sampling frequency of one sample per year per entry point if, after at least 1 year of monitoring, the TTHM running annual average is no greater than 0.060 mg/L and the HAA5 running annual average is no greater than 0.045 mg/L.

(B) *Reduced monitoring.* Systems that use groundwater sources shall monitor for TTHM and HAA5 for at least 1 year prior to qualifying for reduced monitoring. The Department retains the right to require a system that meets the requirements of this clause to resume routine monitoring.

(I) Systems that use groundwater sources shall reduce monitoring to one sample per 3-year cycle per entry point if the annual TTHM average is no greater than 0.040 mg/L and the annual HAA5 average is no greater than 0.030 mg/L for 2 consecutive years or the annual TTHM average is no greater than 0.020 mg/L and the annual HAA5 average is no greater than 0.015 mg/L for 1 year. The sample shall be taken during the month of warmest water temperature. The 3-year cycle shall begin on January 1 following the quarter in which the system qualifies for reduced monitoring.

(II) Systems that use groundwater sources that qualify for reduced monitoring shall remain on reduced monitoring if the TTHM annual average is no greater than 0.060 mg/L and the HAA5 annual average is no greater than 0.045 mg/L. Systems that exceed these levels shall resume routine monitoring as prescribed in clause (A), except that systems that exceed either a TTHM or HAA5 MCL shall increase monitoring to at least one sample per quarter per entry point beginning in the quarter immediately following the quarter in which the system exceeds the TTHM or HAA5 MCL.

(ix) *TTHM and HAA5 Stage 2 DBP Rule.* Beginning October 1, 2013, monitor annually for TTHM and HAA5 if the system uses a chemical disinfectant or oxidant to treat the water, or obtains finished water from another public water system that uses a chemical disinfectant or oxidant to treat the water as follows:

(A) *Routine monitoring.* Systems shall take at least one dual sample set per year per entry point during the peak historical month except that systems meeting the conditions in subsection (d) or (e) shall monitor in accordance with § 109.301(12)(ii) (relating to general monitoring requirements).

(B) *Increased monitoring.* If any sample results exceed either a TTHM or HAA5 MCL, the system shall take at least one dual sample set per quarter (every 90 days) per entry point. The system shall return to the

sampling frequency of one dual sample set per year per entry point if, after at least 1 year of monitoring, each TTHM sample result is no greater than 0.060 mg/L and each HAA5 sample result is no greater than 0.045 mg/L.

(C) *Compliance determinations.* Compliance with the TTHM and HAA5 MCLs is based on the LRAA.

(I) A system required to monitor quarterly shall calculate LRAAs for TTHM and HAA5 using monitoring results collected under this subparagraph and determine that each LRAA does not exceed the MCL. A system that fails to complete 4 consecutive quarters of monitoring shall calculate compliance with the MCL based on the average of the available data from the most recent 4 quarters. A system that takes more than one sample per quarter at a monitoring location shall average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.

(II) A system required to monitor yearly or less frequently shall determine that each sample result is less than the MCL. If any single sample result exceeds the MCL, the system shall comply with the requirements of clause (B). If no sample result exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.

(III) A system required to conduct quarterly monitoring shall make compliance calculations at the end of the 4th calendar quarter that follows the compliance date (or earlier if the LRAA calculated based on fewer than 4 quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters) and at the end of each subsequent calendar quarter. A system required to conduct monitoring at a frequency that is less than quarterly shall make compliance calculations beginning with the first compliance sample taken after the compliance date.

(IV) A system is in violation of the MCL when the LRAA at any location exceeds the MCL for TTHM or HAA5, calculated as specified in subclause (I), or the LRAA calculated based on fewer than 4 quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters. If a system fails to monitor, the system is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA.

(x) Beginning January 1, 2004, monitor daily for chlorite if the system uses chlorine dioxide for disinfection or oxidation. Systems shall take at least one daily sample at the entry point. If a daily sample exceeds the chlorite MCL, the system shall take three additional samples within 24 hours from the same lot, batch, machine, carrier vehicle or point of delivery. The chlorite MCL is based on the average of the required daily sample plus any additional samples.

(xi) Beginning April 28, 2018, a system using chlorine dioxide shall take one sample per day at each entry point. A violation of the chlorine dioxide MRDL occurs when any entry point sample result exceeds the chlorine dioxide MRDL.

(xii) Beginning January 1, 2004, monitor monthly for bromate if the system uses ozone for disinfection or oxidation.

(A) *Routine monitoring.* Systems shall take one sample per month for each entry point that uses ozone while the ozonation system is operating under normal conditions.

(B) *Reduced monitoring.*

(I) Until March 31, 2009, systems shall reduce monitoring for bromate from monthly to quarterly if the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly bromide measurements for 1 year. Systems on reduced monitoring shall continue monthly source water bromide monitoring. If the running annual average source water bromide concentration, computed quarterly, is equal to or exceeds 0.05 mg/L, the system shall revert to routine monitoring as prescribed by clause (A).

(II) Beginning April 1, 2009, a system required to analyze for bromate may reduce monitoring from monthly to quarterly, if each sample result analyzed using methods specified in 40 CFR 141.132(b)(3)(ii)(B) (relating to monitoring requirements) is less than or equal to 0.0025 mg/L based on monthly measurements as prescribed in clause (A) for the most recent 12 months. Systems qualifying for reduced bromate monitoring under subclause (I) may remain on reduced monitoring as long as each sample result analyzed using methods specified in 40 CFR 141.132(b)(3)(ii)(B) from the previous 12 months is less than or equal to 0.0025 mg/L. If any sample result exceeds 0.0025 mg/L, the system shall resume routine monitoring as prescribed under clause (A).

(xiii) Beginning April 28, 2018, a system that provides filtration of surface water or GUDI sources shall comply with the following:

(A) Maintain a residual at the entry point as specified in § 109.202(c)(1)(ii) (relating to State MCLs, MRDLs and treatment technique requirements).

(B) Monitor residual disinfectant concentration at the entry point in accordance with § 109.301(1)(i)(C).

(C) Report the results in accordance with § 109.701(a)(2).

(xiv) Beginning April 28, 2018, a system that uses or obtains finished water from another permitted public water system using surface water or GUDI sources shall comply with the following requirements:

(A) As a minimum, a detectable residual disinfectant concentration of 0.20 mg/L measured as total chlorine, combined chlorine, chlorine dioxide or another level approved by the Department for systems using an alternate oxidizing disinfection treatment shall be maintained at the entry point as demonstrated by monitoring conducted under § 109.301(1) and (2) or (8)(v).

(B) Sampling points with nondetectable residual disinfectant concentrations which have heterotrophic plate count measurements of less than 500/ml are deemed to be in compliance with clause (A).

(C) When the requirements of clause (A) or (B) cannot be achieved, the supplier shall initiate an investigation under the Department's direction to determine the cause, potential health risks and appropriate remedial measures.

(2) Vended water systems shall monitor in accordance with paragraph (1) except that vended water systems qualifying for permit by rule under § 109.1005(b), for each entry point shall:

- (i) Monitor monthly for microbiological contaminants.
- (ii) Monitor annually for total dissolved solids, lead and cadmium.
- (iii) Conduct special monitoring as required by the Department.
- (iv) Beginning April 28, 2018, a system that obtains finished water from another permitted public water system using surface water or GUDI sources shall also monitor in accordance with paragraph (1)(xiv).

(b) *Sampling requirements.*

(1) For bottled water and vended water systems, retail water facilities and bulk water hauling systems, samples taken to determine compliance with subsection (a) shall be taken from each entry point.

(i) For bottled water systems, each entry point means each finished bottled water product. If multiple sources are used for a product and are not blended prior to bottling, the bottled water product for each source shall be considered a different product for monitoring purposes.

(ii) For bulk water hauling systems, retail water facilities and vended water systems, each entry point shall mean a point of delivery to the consumer from each carrier vehicle, machine or dispenser representative of each source.

(2) For the purpose of determining compliance with the monitoring and analytical requirements established under this subchapter, the Department will consider only those samples analyzed by a laboratory accredited by the Department, except that measurements of turbidity, fluoridation operation, residual disinfectant concentration, daily chlorite, temperature and pH may be performed by a person meeting the requirements of § 109.1008(c) (relating to system management responsibilities).

(3) Public water suppliers shall assure that samples for laboratory analysis are properly collected and preserved, are collected in proper containers, do not exceed maximum holding times between collection and analysis and are handled in accordance with guidelines governing quality control which may be established by the Department. A public water supplier who utilizes a certified laboratory for sample collection as well as analysis satisfies the requirements of this subsection.

(4) Compliance monitoring samples for VOCs, as required under subsection (a)(1)(iii), shall be collected by a person properly trained by a laboratory certified by the Department to conduct VOC or vinyl chloride analysis.

(5) Compliance monitoring samples required under subsection (a)(1)(iii) may be composited in accordance with 40 CFR 141.24(g)(7) (relating to organic chemicals, sampling and analytical requirements) except:

(i) Samples from groundwater entry points may not be composited with samples from surface water entry points.

(ii) Samples from one type of bottled water product or vended water product may not be composited with samples from another type of bottled water product or vended water product.

(iii) Samples used in compositing shall be collected in duplicate.

(iv) If a VOC listed under 40 CFR 141.61(a) is detected at an entry point, samples from that entry point may not be composited for subsequent compliance or repeat monitoring requirements.

(v) Samples obtained from an entry point which contains water treated by a community water supplier or nontransient noncommunity water supplier to specifically meet an MCL for a VOC listed under 40 CFR 141.61(a) may not be composited with other entry point samples.

(6) Sampling and analysis shall be performed in accordance with analytical techniques adopted by the EPA under the Federal act or methods approved by the Department.

(c) *Repeat monitoring for microbiological contaminants.*

(1) If a sample collected in accordance with subsection (a)(1)(i) or (2)(i) is found to be total coliform-positive:

(i) The bottled water system shall collect a set of three additional samples (check) from the same lot or batch of the type of product.

(ii) The vended water, retail water facility or bulk water hauling systems shall collect a set of three additional samples (check) from the same entry point (machine, point of delivery or carrier vehicle).

(2) Samples shall be collected for analysis within 24 hours of being notified of the total coliform-positive sample. The Department may extend this 24-hour collection limit to a maximum of 72 hours if the system adequately demonstrates a logistical problem outside the system's control in having the check samples analyzed within 30 hours of collection. A logistical problem outside the system's control may include a coliform-positive result received over a holiday or weekend in which the services of a Department certified laboratory are not available within the prescribed sample holding time.

(3) At a minimum, the system shall collect one set of check samples for each total coliform-positive routine sample. If a check sample is total coliform-positive, the public water system shall collect additional check samples in the manner specified in this subsection. The system shall continue to collect check samples until either total coliforms are not detected in a set of check samples, or the system determines that an assessment has been triggered under § 109.202(c)(4).

(d) *A bulk water hauling system that serves at least 25 of the same persons year around.* A bulk water hauling system that is determined by the Department to serve at least 25 of the same persons year round shall also comply with the monitoring requirements for community water systems in accordance with § 109.301.

(e) *A bulk water hauling system, vended water system or retail water facility that serves at least 25 of the same persons over 6 months per year.* A bulk water

hauling system, vended water system or retail water facility that is determined by the Department to serve at least 25 of the same persons over 6 months per year shall also comply with the monitoring requirements for nontransient noncommunity water systems in accordance with § 109.301.

(f) *Additional monitoring requirements for surface water and GUDI sources.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with the monitoring requirements under Subchapter L (relating to long-term 2 enhanced surface water treatment rule).

(g) *Additional monitoring requirements for groundwater sources.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with the monitoring requirements under Subchapter M (relating to additional requirements for groundwater sources).

(h) *Compliance determinations.* Compliance with MCLs, MRDLs and treatment techniques shall be determined in accordance with §§ 109.202 and 109.301.

(i) *Special monitoring requirements.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with § 109.302 (relating to special monitoring requirements).

Authority

The provisions of this § 109.1003 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.1003 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; corrected June 2, 1995, effective February 4, 1995, 25 Pa.B. 2180; amended April 23, 1999, effective April 24, 1999, 29 Pa.B. 2231; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383490) to (383498).

Cross References

This section cited in 25 Pa. Code § 109.1008 (relating to system management responsibilities).

§ 109.1004. Public notification.

(a) *General public notification requirements.* A bottled water supplier shall give public notification in accordance with this section. A bulk water hauler, vended water supplier or retail water supplier shall give public notification in accordance with Subchapter D (relating to public notification). For the purpose of establishing a bulk hauling, vended or retail water supplier's responsibilities under Subchapter D, a bulk water supplier shall comply with the public notification requirements specified for a community water system and a vended or retail water supplier shall comply with the public notification requirements specified for a noncommunity water system.

(1) A bottled water supplier who knows that a primary MCL or an MRDL has been exceeded or treatment technique performance standard has been vio-

lated or has reason to believe that circumstances exist which may adversely affect the quality of drinking water, including, but not limited to, source contamination, spills, accidents, natural disasters or breakdowns in treatment, shall report the circumstances to the Department within 1 hour of discovery of the problem.

(2) If the Department determines, based upon information provided by the bottled water supplier or other information available to the Department, that the circumstances present an imminent hazard to the public health, the water supplier shall issue a water supply warning approved by the Department and, if applicable, initiate a program for product recall approved by the Department under this subsection. The water supplier shall be responsible for disseminating the notice in a manner designed to inform users who may be affected by the problem.

(i) Within 4 hours of the Department's determination that an imminent hazard is present, the water supplier shall provide the notice to newspapers, radio and television media serving the affected public, or directly notify affected users in a manner approved by the Department. The water supplier shall also notify key public officials as designated in the system's emergency response plan.

(ii) If the notice provided under subparagraph (i) does not ensure that the affected public is adequately notified, the Department may require the water supplier to further disseminate the notice in an appropriate manner which may include direct mailings, publication in newspapers or other paid advertising, or postings.

(iii) A water supply warning shall be followed by further notices designed to inform the public on a continuing basis as to the expected duration of the hazard, progress towards solving the problem, and measures that should be taken by users to reduce their risk. These notices shall be given at intervals and in a manner directed by the Department as long as the threat to public health continues.

(iv) The water supply warning shall continue until the Department is satisfied that no significant threat to the public health remains and approves a notice canceling the warning. The water supplier is responsible for disseminating the cancellation of the water supply warning in a manner similar to the issuance of the warning.

(b) *Description and content of notice.* Notice given under this section shall be written in a manner reasonably designed to fully inform the users of the system. When appropriate or as designated by the Department, additional notice in a foreign language shall be given.

(1) The notice shall be conspicuous and may not use technical language, small print or other methods which would frustrate the purpose of the notice.

(2) The notice shall disclose material facts regarding the subject, including the nature of the problem and, when appropriate, a clear statement that an MCL or MRDL has been violated and preventive measures that should be taken by the public.

(3) Notices shall include a balanced explanation of the significance or seriousness to the public health of the subject of the notice including potential adverse health effects, the population at risk, a clear explanation of steps taken by the supplier to correct the problem, necessity for seeking alternative supplies, guidance on safeguards and alternatives available to users, and the results of additional sampling. In addition, bottled water system and retail water facility notices shall describe a program for product recall, if applicable.

(4) The notice shall include the telephone number of the owner, operator or designee of the public water system as a source of additional information concerning the notice.

(5) In all notices, when providing the information on potential adverse health effects required by subsection (b)(3), the water supplier shall include language established by the EPA for the contaminant specified in 40 CFR Part 141, Subpart Q, Appendix B (relating to mandatory health effects language) and incorporated by reference, or language established by the Department by regulations or order. The health effects language for fluoride is not incorporated by reference. A public water system shall include the health effects language specified in § 109.411(d)(1) (relating to content of a public notice) in each public notice required for violation of the primary MCL of 2 mg/L for fluoride.

(c) *Notice by the Department.* If a water supplier fails to give notice to the public as required by this section, the Department may perform this notification on behalf of the supplier of water and may assess costs of notification on the responsible water supplier. Issuance of public notice by the Department under the section does not divest a public water supplier of legal responsibility for issuance of public notification otherwise required by the subchapter.

(d) *CCR requirements.* A bulk water supplier that is determined by the Department to serve at least 25 of the same persons year-round shall prepare and deliver a CCR to each bill-paying customer in accordance with § 109.416 (relating to CCR requirements).

Authority

The provisions of this § 109.1004 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of the § 109.1004 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383498) to (383500).

Cross References

This section cited in 25 Pa. Code § 109.1003 (relating to monitoring requirements); 25 Pa. Code § 109.1008 (relating to system management responsibilities).

§ 109.1005. Permit requirements.

(a) *General permit requirement.* A person may not construct or operate a bottled water or vended water system, retail water facility or bulk water hauling system without first having obtained a public water system permit under subsection (b) or (e).

(b) *Special permit by rule requirement for vended water systems.*

(1) A person constructing and operating a vended water system shall obtain a separate and distinct permit under subsection (d) for each water vending machine owned by the same person unless the vended water system satisfies the conditions in this subsection. A separate and distinct permit by rule will be required for each Department region in which the water vending machines are located. The Department retains the right to require a vended water system that meets the requirements of this subsection to obtain a permit, if, in the judgment of the Department, the vended water system cannot be adequately regulated through the standardized specifications and conditions. A vended water system which is released from the obligation to obtain a permit shall comply with the other requirements of this subchapter, including design, construction and operation requirements.

(i) A vended water system in which all water vending machines are located in the same Department region.

(ii) A vended water system which has as its sole source of water, finished water from existing permitted community water systems and uses only NAMA approved water vending machines satisfies the permit requirement of the act.

(2) A vended water system covered under this subsection shall register with the Department on forms provided by the Department. Amendments to the registration shall be filed when a substantial modification is made to the system. Descriptions of modifications shall be filed within 30 days of operation of the modification.

(c) *Special permit by rule requirement for bottled water systems.* A person owning or operating a bottled water system in this Commonwealth permitted under this chapter shall obtain an amended permit before making substantial modifications to the processing and bottling facilities unless the bottled water system satisfies the conditions in paragraphs (1)—(5). The permit-by-rule does not apply to the collection facilities. The Department retains the right to require a bottled water system that meets the requirements of paragraphs (1)—(5) to obtain a permit, if, in the judgment of the Department, the bottled water system cannot be adequately regulated through the standardized specifications and conditions. A bottled water system which is released from the obligation to obtain a permit shall comply with the other requirements of this subchapter, including design, construction and operation requirements. The following are the conditions for a permit-by-rule:

(1) The bottled water system has as its sole source of water permitted groundwater sources which are not under the direct influence of surface water as determined through the Department's *Guidance for Surface Water Identification* protocol or finished water from a Department approved community water system.

(2) The water quality of the sources does not exceed the Food and Drug Administration quality standards for primary (that is, health-related) chemical

and radiological contaminants specified in 21 CFR 165.110 (relating to bottled water) as determined under sampling conducted under subsection (e)(4)(ii) and requires treatment no greater than disinfection to provide water of a quality that meets the primary MCLs established under Subchapter B (relating to MCLs, MRDLs or treatment techniques).

(3) Proof that the facilities meet the standards of the Food and Drug Administration in 21 CFR Parts 110, 129 and 165 (relating to current good manufacturing practice in manufacturing, packing, or holding human food; processing and bottling of bottled drinking water; and beverages) and the *IBWA Model Bottled Water Code* as determined by an onsite evaluation conducted by a Nationally recognized, independent, not-for-profit third-party organization such as NSF or other organization acceptable to the Department. The onsite evaluation shall be conducted annually. The proof shall consist of the report issued by the organization which shall be submitted to the Department within 30 days following the completion of the onsite evaluation. To be acceptable to the Department, the organization shall:

- (i) Be accredited by ANSI as a third-party inspection/evaluation organization.
- (ii) Have well developed, documented policies, procedures and contracts to support Department enforcement actions for meeting compliance objectives.

(4) A bottled water system intending to operate under this subsection shall submit written notification to the Department with documentation that the system complies with paragraphs (1)—(3).

(5) A bottled water system operating under this subsection shall file descriptions of substantial modifications made to the system to the Department within 30 days of operation of the modification. The description shall include documentation that the modification meets the following requirements as applicable:

- (i) Compliance with the product water-contact materials and treatment chemical additives toxicological requirements of § 109.606 (relating to chemicals, materials and equipment) or alternatively, the Food and Drug Administration standards in 21 CFR Part 129.

(ii) Validated treatment technologies for the reduction of contaminants. Validated treatment technologies are those that have been permitted by the Department under this chapter at the bottled water system operating under the permit by rule or certified to an applicable ANSI/NSF standard by NSF or other certification organization acceptable to the Department or verified under the EPA Environmental Technology Verification Program. To be acceptable to the Department, a certification organization other than NSF shall be accredited by ANSI as a third-party certification organization and meet the requirements under § 109.606(d) as applicable to the appropriate ANSI/NSF standard for the treatment technology.

(6) The Department will publish a notice in the *Pennsylvania Bulletin* of its determination that a bottled water system has complied with paragraphs (1)—(4) and is operating under the permit by rule. The Department will publish a notice in the *Pennsylvania Bulletin* of descriptions submitted under paragraph (5) of substantial modifications made by a bottled water system operating under the permit-by-rule.

(d) *Permit amendments.* A person may not substantially modify a bottled water or vended water system, retail water facility or bulk water hauling system operated under a public water system permit without obtaining a permit amendment from the Department or otherwise complying with subsection (f).

(e) *Permit applications.* An application for a public water system permit for a bottled water or vended water system, retail water facility or bulk water hauling system shall be submitted in writing on forms provided by the Department and shall be accompanied by plans, specifications, engineer's report, water quality analyses and other data, information or documentation reasonably necessary to enable the Department to determine compliance with the act and this chapter. The Department will make available to the applicant the *Public Water Supply Manual*, available from the Bureau of Water Standards and Facility Regulation, Post Office Box 8467, Harrisburg, Pennsylvania 17105-8467 which contains acceptable design standards and technical guidance. Water quality analyses shall be conducted by a laboratory certified under this chapter. An application for a public water system permit for a bottled water or vended water system, retail water facility or bulk water hauling system shall include:

(1) The signature of the appropriate individual identified in § 109.503(a)(1)(i) (relating to public water system construction permits).

(2) Plans, specifications and engineer's report or modules prepared by or under the supervision of a professional engineer registered to practice in this Commonwealth, or in the state in which the water system is located, except that manufacturer's drawings and specifications for equipment or vending machines may be submitted in lieu of plans and specifications, as prescribed in this section, for the equipment or machines.

(3) The front cover or flyleaf of each set of drawings, and of each copy of the specifications and engineer's report, except for manufacturer's drawings and specifications, shall bear the signature and imprint of the seal of the registered professional engineer. Each drawing shall bear an imprint or a legible facsimile of the seal.

(4) Information describing new sources as follows:

(i) A comprehensive sanitary survey of the physical surroundings of each new source of raw water.

(ii) An evaluation of the quantity and quality of the raw water available from each new source. The evaluation shall include data for each primary and secondary contaminant and other contaminants the Department determines necessary to evaluate potability of the source. When a new source is

finished water from another public water system, the most recent quality data if in compliance with the monitoring requirements of this chapter, obtained from the public water system supplying the finished water may be submitted.

(5) An erosion and sedimentation control plan which meets the requirements in Chapter 102 (relating to erosion and sediment control) when earth-moving activities are involved.

(6) In lieu of compliance with paragraphs (2)—(5), the Department may accept approval of an out-of-State systems' source and facilities by the agency having jurisdiction over drinking water in that state if the supplier submits proof of the approval by the other State agency.

(7) In addition to the information required under paragraphs (1)—(6), an application for a bottled water system permit shall include:

(i) An analysis of the quality of the manufactured water for each bottled water product. The analysis shall include data for each primary and secondary contaminant under § 109.1002 (relating to MCLs, MRDLs or treatment techniques).

(ii) A copy of each label of identification to be affixed to each type of bottled water product and trade name distributed by the public water system.

(iii) Proof that the system is in compliance with the standards of the Food and Drug Administration contained in 21 CFR Part 129.

(A) For out-of-State bottled water systems, the proof shall consist of the report issued by a Nationally recognized organization which inspects bottled water systems for compliance with 21 CFR Part 129, such as NSF, or another organization, state or country which utilizes an inspection protocol as stringent as NSF's protocol.

(B) For in-State bottled water systems, the proof shall consist of an inspection report issued by the Department.

(8) In addition to the information required under paragraphs (1)—(6), an application for a bulk water hauling system shall include:

(i) A detailed description of each water transportation tank, fill connection, outlet valve, hose, pump and other appurtenances including the manner in which they will be protected from contamination.

(ii) A description of the exact location where withdrawals will be made from each source of supply.

(9) In addition to the information required under paragraphs (1)—(6), an application for a vended water system shall include:

(i) A description of the exact location of each water vending machine.

(ii) A copy of the system's operation and maintenance plan detailing machine maintenance schedules.

(iii) A copy of the NAMA certification for each type of machine, if a certification has been issued.

(10) In addition to the information required under paragraphs (1)—(6), an application for a retail water facility shall include:

- (i) A copy of NSF certificates, when applicable, for system components.
- (ii) A copy of product labels, when applicable.

(f) *Permit amendment applications.* A bottled water or vended water system, retail water facility or bulk water hauling system operating under a public water system permit shall obtain a permit amendment before making a substantial modification to the public water system.

(1) A water supplier shall submit an application for a major permit amendment in accordance with subsection (e), if the proposed modification constitutes a major change to the public water system.

(i) For bottled water systems and retail water facilities, typical modifications which may be considered major changes are proposed new sources, additions or deletions of treatment techniques or processes and new types of products.

(ii) For bulk water hauling systems typical modifications which may be considered major changes are proposed new sources, additions or deletions of treatment techniques or processes, pumping stations and storage reservoirs.

(iii) For vended water systems, typical modifications which may be considered major changes are proposed additions or deletions of treatment techniques or processes, new product lines or types of products and the addition to the system of machines not certified by NAMA. For new sources, the supplier shall obtain a separate and distinct permit in accordance with subsection (e) unless the system qualifies for a permit-by-rule under subsection (b).

(2) A water supplier shall submit a written request to the Department for a minor permit amendment if the proposed modification constitutes a relatively minor change to the public water system. A request for a permit amendment under this paragraph shall describe the proposed change in sufficient detail to allow the Department to adequately evaluate the proposal.

(i) For bottled water systems and retail water facilities, typical modifications which can generally be accomplished under this paragraph include:

- (A) Changes in treatment chemicals.
- (B) Construction of storage tanks designed to standard specifications.
- (C) Installation of replacement equipment.
- (D) Changes in legal status, such as transfers of ownership, incorporation or mergers.

(ii) For bulk water hauling systems, typical modifications which can generally be accomplished under this paragraph include:

- (A) Changes in treatment chemicals.

(B) Replacement of tank or reservoir linings or similar materials in contact with the water supply.

(C) Additions and modifications to water carrier vehicles and standpipes designed to standard specifications.

(D) Transmission mains.

(E) Changes in legal status, such as transfers of ownership, incorporation or mergers.

(iii) For vended water systems, typical modifications which can generally be accomplished under this paragraph include changes in treatment chemicals, repair or replacement of machines, and the addition of new NAMA certified machines to a permitted vended water system.

(3) The Department determines whether a particular modification requires a permit amendment under subsection (f)(1) or a permit amendment under subsection (f)(2). The Department's determination will include consideration of the magnitude and complexity of the proposed change and the compliance history of the public water system.

(g) *Emergency permits.* In emergency circumstances, the Department may issue permits for construction, operation or modification to a bottled water or bulk water hauling system, which the Department determines may be necessary to assure that potable drinking water is available to the public.

(1) Emergency permits shall be limited in duration and may be conditioned on additional monitoring, reporting and the implementation of appropriate emergency response measures. The Department may revoke an emergency permit if it finds the water system is not complying with drinking water standards or the terms or conditions of the permit. An authorization for construction, operation or modifications obtained under an emergency permit will not extend beyond the expiration of the emergency permit unless the public water system receives a permit or permit amendment under subsection (e) or (f) for the construction, operation or modification initiated during the emergency.

(2) State and Federal agencies conducting emergency response bulk water hauling operations need not obtain a permit under this subchapter, if a Department-approved source is utilized and adequate monitoring specified by the Department is conducted to assure compliance with the microbiological MCL specified in § 109.1002.

(h) *Department's review.* Applications for public water system permits and permit amendments for bottled water and vended water systems, retail water facilities and bulk water hauling systems will be reviewed in accordance with the following procedures:

(1) Applications will be reviewed in accordance with accepted engineering practices. The approval of plans, specifications and engineer's reports by the Department is limited to the sanitary features of design and other features of public health significance.

(2) The Department will not accept an application for review until the application is determined to be complete. A complete application is one which includes the information specified in this chapter and other information necessary for the Department to ensure compliance with this chapter.

(3) As a condition of receiving a public water system permit, a bottled water system shall comply with the standards of the Food and Drug Administration contained in 21 CFR Part 129. Evidence shall be presented demonstrating compliance with subsection (e)(7)(iii).

(4) In reviewing a permit application under this chapter, the Department may consider the following:

(i) Adherence to standards of the Department in Subchapter F (relating to design and construction standards) and § 109.1006 (relating to design and construction standards).

(ii) Compliance by the proposed project with applicable statutes administered by the Commonwealth, river basin commissions created by interstate compact or Federal environmental statutes or regulations.

(i) *Permit fees.*

(1) An application for a new permit or major permit amendment under subsection (f)(1) for a bottled water or vended water system, retail water facility or bulk water hauling system shall be accompanied by a check in the amount of \$750 payable to the “Commonwealth of Pennsylvania,” except that:

(i) An application from an out-of-State bottled water system submitting proof of out-of-State approval under subsection (e)(6) shall be accompanied by a fee of \$100.

(ii) An application from a bottled water system, retail water facility or bulk water hauling system purchasing finished water, as its sole source of water, from a public water system operating under a permit issued under this chapter, and a vended water system permitted by rule, shall submit a fee of \$300.

(2) A fee is not required for an emergency permit under subsection (g) or a minor permit amendment under subsection (f)(2).

Source

The provisions of this § 109.1005 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended October 7, 1994, effective October 8, 1994, 24 Pa.B. 5175; amended April 23, 1999, effective April 24, 1999, 29 Pa.B. 2231; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895. Immediately preceding text appears at serial pages (254836) to (254838), (266295) to (266296) and (254841) to (254843).

Cross References

This section cited in 25 Pa. Code § 109.1003 (relating to monitoring requirements); and 25 Pa. Code § 109.1306 (relating to information describing 4-log treatment and compliance monitoring).

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§ 109.1006. Design and construction standards.

(a) *Application of standards.* Standards in this section apply to design and construction or modification of bottled water and vended water systems, retail water facilities and bulk water hauling systems regardless of whether a Department permit or permit amendment is required. The standards apply to new facilities and facility modifications unless otherwise specifically indicated.

(b) *Acceptable design.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall be designed to provide an adequate quality of water to the public. The design shall ensure that the system will, upon completion, be capable of providing water that complies with the primary and secondary MCLs, MRDLs and treatment techniques established in § 109.1002 (relating to MCLs, MRDLs or treatment techniques). The Department may approve control techniques, such as nonremoval processes, which abate the problems associated with a secondary contaminant, and achieve the objective of the secondary MCL.

(1) Designs of bottled water and vended water systems, retail water facilities and bulk water hauling systems shall conform to accepted standards of engineering and design in the water supply, bottled water, retail water or bulk water hauling industry, as applicable.

(2) Designs of bottled water and vended water systems, retail water facilities and bulk water hauling systems shall be in accordance with Subchapter F (relating to design and construction standards) except that § 109.607 (relating to pressures) does not apply.

Source

The provisions of this § 109.1006 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895. Immediately preceding text appears at serial pages (254843) to (254844).

Cross References

This section cited in 25 Pa. Code § 109.1005 (relating to permit requirements).

§ 109.1007. Labeling requirements for bottled water systems, vended water systems and retail water facilities.

(a) *General labeling requirements.* Containers of bottled water distributed in this Commonwealth by bottled water systems, retail water facilities or, when appropriate, vended water systems, shall have labels which are designed to remain affixed to the container during use and which include the following information as required by this section. Labels with the following information on the caps of bottled water containers designed for reuse by the bottler are deemed to meet this requirement if the Department-issued identification number and the manufacture date, lot or batch number are on the bottle:

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(1) The name and address of the water supplier together with the product trade name.

(2) The water source. When finished water is the source, the name of the public water system shall appear on the label.

(3) The Department identification number issued to the bottled or vended water system or retail water facility.

(4) The manufacture date, or a lot or batch number. The manufacturing date, or lot or batch number shall identify a specific set of primary containers or units of the same size, type and style, produced under conditions as nearly uniform as possible. A batch or lot may not extend for longer than 7 days.

(5) Labeling for mineral water shall include the words “mineral water.” Mineral water which exceeds the MCL for total dissolved solids shall include a statement on the label that the product exceeds the MCL for total dissolved solids.

(6) Labeling for artificially-fluoridated water shall include the words “fluoridated water.”

(b) *Corporate name and trade name.* A bottled water system, vended water system or retail water facility whose corporate name contains the words “Spring,” “Well,” “Artesian,” “Mineral” or “Natural” or a derivative of those words, shall label each bottle with the trade name in typeface of at least equal size to the typeface of the corporate name.

(c) *Special vending machine label.* The name and address of the water supplier together with the Department identification number shall be provided in a conspicuous location on each machine. When water is prebottled from the water vending machine and made available on the shelf for sale, each container shall be labeled in accordance with subsections (a) and (b).

(d) *Special retail water facility label.* When water is prebottled from the retail water facility and made available on the shelf for sale, each container shall be labeled in accordance with subsections (a) and (b).

Authority

The provisions of this § 109.1007 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.1007 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended April 23, 1999, effective April 24, 1999, 29 Pa.B. 2231. Immediately preceding text appears at serial pages (207296) to (207297).

Cross References

This section cited in 25 Pa. Code § 109.1002 (relating to MCLs, MRDLs or treatment techniques); and 25 Pa. Code § 109.1008 (relating to system management responsibilities).

109-150.22

§ 109.1008. System management responsibilities.

(a) *Reporting and recordkeeping requirements for bottled water and vended water systems, retail water facilities and bulk water hauling systems.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with the reporting requirements in § 109.701(a) and (d) (relating to reporting and recordkeeping).

(1) In addition to the requirements in § 109.701(a) and (d), bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with the following requirements:

(i) Annual product monitoring as required under § 109.1003 (relating to monitoring requirements) shall be reported to the Department by December 31 of each year.

(ii) Each bottled water system shall, by December 31 of each year, submit to the Department proof that the system is in compliance with the standards of the Food and Drug Administration in 21 CFR Part 129 (relating to processing and bottling of bottled drinking water) as required by § 109.1009(b) (relating to system operational requirements). Proof shall consist of the report issued by a Nationally-recognized organization which inspects bottled water systems for compliance with 21 CFR Part 129, such as NSF, or another organization, state or country which utilizes an inspection protocol as stringent as NSF's protocols.

(iii) A monthly operational report shall be prepared on forms provided by the Department or in a form acceptable to the Department. The report shall be maintained on file by the operator for at least 2 years and submitted upon request of the Department. The report shall include at least the following:

- (A) The water produced daily.
- (B) The chemicals added daily.
- (C) The physical and chemical determinations taken daily.
- (D) The maintenance performed.
- (E) The operational problems and how they have been corrected.

(iv) By March 31, an Annual Water Supply Report for the previous calendar year shall be submitted on forms provided by the Department or in a form acceptable to the Department. This report shall include at least the following:

- (A) Information related to water produced or hauled for the year.
- (B) A summary of sanitary surveys conducted by the water supplier, including, when applicable, updates to the operation and maintenance plan and cross-connection control program.
- (C) Updates to the plan for product recall required under subsection (e).

(2) The bottled water, vended water, retail water or bulk water supplier shall retain on the premises of the public water system or at a convenient location near the premises all records in accordance with the schedule in § 109.701(d).

(3) For bottled water systems and, if applicable, vended water systems and retail water facilities, new or additional proprietary labels shall be reported to the Department in writing, along with copies of the labels, within 10 days following production or distribution of the new or additional label product. The new or additional proprietary labels may be submitted to the Department prior to the product production if the water supplier desires initial Department review. The new or additional proprietary labels shall comply with § 109.1007 (relating to labeling requirements for bottled water systems, vended water systems and retail water facilities).

(4) In addition to the requirements of this subsection, bottled water and vended water systems, retail water facilities and bulk water hauling systems using surface water or GUDI sources shall also comply with the reporting and recordkeeping requirements of Subchapter L (relating to long-term 2 enhanced surface water treatment rule).

(5) In addition to the requirements of this subsection, bottled water and vended water systems, retail water facilities and bulk water hauling systems using groundwater sources, including purchased groundwater, shall also comply with the reporting and recordkeeping requirements of Subchapter M (relating to additional requirements for groundwater sources).

(b) *Operation and maintenance plan requirements.* Bottled water, vended water, retail water and bulk water suppliers shall develop an operation and maintenance plan for each system. The operation and maintenance plan shall conform to the guidelines contained in Part III of the Department's *Public Water Supply Manual* which is available from the Bureau of Safe Drinking Water, Post Office Box 8467, Harrisburg, Pennsylvania 17105-8467. The water supplier shall implement the operation and maintenance plan in accordance with this chapter, and if appropriate in accordance with accepted practices of the bottled water, vended water, retail water facility or bulk water hauling industry. The plan shall be reviewed and updated as necessary to reflect changes in the operation or maintenance of the water system. The plan shall be bound and placed in locations which are readily accessible to the water system's personnel, and shall be presented upon request to the Department.

(c) *Operator requirements.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall have competent personnel qualified to operate and maintain the system's facilities.

(d) *Annual system evaluation requirements.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall conduct an evaluation of the water system at least annually that includes the activities listed in paragraphs (1)—(4). A bottled water, vended water, bulk water hauling system

or retail water facility obtaining finished water from a permitted public water system is not required to perform the activities in paragraphs (1) and (2) if the Department determines that there are no potential problems necessitating inspection and evaluation of the source.

(1) Watershed surveillance consisting of an inspection of portions of the drainage area necessary to identify and evaluate actual and probable sources of contamination.

(2) Evaluation of source construction and protection and, when appropriate, withdrawal and transmission facilities.

(3) Treatment facilities inspection consisting of an evaluation of the effectiveness of the operation and maintenance procedures and the condition and operability of permitted facilities.

(4) Evaluation of finished water storage facilities.

(e) *Emergency response requirements.*

(1) A bottled water, vended water, retail water or bulk water supplier who knows or has reason to believe that circumstances exist which may adversely affect the quality of drinking water supplied by the system, shall notify the Department immediately under § 109.1004 (relating to public notification).

(2) The bottled water, vended water, retail water or bulk water supplier shall develop a plan for product recall under emergency circumstances, and submit the plan to the Department for approval. The plan shall:

(i) Identify detailed procedures for implementing product recalls, including emergency communications and notifications.

(ii) Be kept on file in a readily accessible location by the bottled water, vended water, retail water or bulk water supplier.

(iii) Be reviewed and updated at least annually. A copy of the update shall be included in the annual water supply report to the Department under this section.

(f) *Cross-connection control program.* At the direction of the Department, the bottled water, vended water, retail water or bulk water supplier shall develop and implement a comprehensive control program for the elimination of existing cross-connections or the effective containment of sources of contamination, and prevention of future cross-connections. A description of the program, including the following information, shall be submitted to the Department for approval:

(1) A description of the methods and procedures to be used.

(2) An implementation schedule for the program.

(3) A description of the methods and devices which will be used to protect the water system.

(g) *Level 1 and Level 2 assessments.* Bottled water systems, vended water systems, retail water facilities and bulk water hauling systems shall comply with the requirements of § 109.705(b) (relating to system evaluations and assessments). Bottled water systems, vended water systems, retail water facilities and bulk water hauling systems may use a Nationally-recognized organization which

inspects bottled water systems for compliance with 21 CFR Part 129, such as NSF, or another organization, state or country which utilizes an inspection protocol as stringent as NSF's protocols to conduct the Level 2 assessment.

(h) *Seasonal systems.* A bottled water system, vended water system, retail water facility or bulk water hauling system that operates as a seasonal system shall comply with the requirements of § 109.715 (relating to seasonal systems).

(i) *Significant deficiencies.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with § 109.705(d) and (e).

(j) *Stage 2 Disinfectants/Disinfection Byproducts Rule monitoring plan and operational evaluation levels.* A bulk water hauling system, vended water system or retail water facility that is determined by the Department to meet the definition of a community or nontransient noncommunity public water system and that uses a chemical disinfectant or that obtains finished water from another public water system that uses a chemical disinfectant or oxidant shall comply with § 109.701(g)(2).

Authority

The provisions of this § 109.1008 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-7 and 510-20).

Source

The provisions of this § 109.1008 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended April 23, 1999, effective April 24, 1999, 29 Pa.B. 2231; amended December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended September 23, 2016, effective September 24, 2016, 46 Pa.B. 6005; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383509) to (383512).

Cross References

This section cited in 25 Pa. Code § 109.1003 (relating to monitoring requirements); and 25 Pa. Code § 109.1009 (relating to system operational requirements).

§ 109.1009. System operational requirements.

(a) *General facilities operation.* Facilities of bottled water and vended water systems, retail water facilities and bulk water hauling systems approved by written permit from the Department shall be operated in a manner consistent with the terms and conditions of the permit to achieve the level of treatment for which the facilities were designed.

(b) *Special bottled water system requirements.* Bottled water systems shall be operated in accordance with the standards of the Food and Drug Administration in 21 CFR Part 129 (relating to processing and bottling of bottled drinking water). Proof of this determination shall be submitted to the Department annually under § 109.1008(a)(1)(ii) (relating to system management responsibilities).

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(c) *Disinfectant residual requirements.* A disinfectant residual acceptable to the Department shall be maintained at the entry point of the bottled water or vended water system, retail water facility or bulk water hauling system sufficient to assure compliance with the microbiological MCL specified in § 109.1002 (relating to MCLs, MRDLs or treatment techniques). The Department will determine the acceptable residual of the disinfectant considering factors such as type and form of disinfectant, temperature and pH of the water, and other characteristics of the water system.

(d) *Disinfection of facilities following construction, modification or repair.* After repairing, constructing or modifying a bottled water, vended water, retail water or bulk water hauling facility and before the facility is placed in service, it shall be properly cleaned and disinfected. Cleaning shall be in accordance with 21 CFR 129.80(c) and (d) (relating to processes and controls) and disinfection shall be with 50 ppm chlorine for 1 minute at 75°F or the equivalent.

(e) *Dedicated equipment.* Bottled water, vended water, retail water and bulk water may not be transported, stored or processed through equipment or lines used for any nonfood product. Bottled water, vended water, retail water and bulk water transported, stored or processed through equipment used for a food product other than water shall comply with the following cleaning and disinfection procedures:

(1) When foods other than milk or dairy products have been transported, stored, processed or bottled, each time before water is transported, stored, processed or bottled through the same lines or equipment, product contact surfaces shall be thoroughly cleaned and disinfected in accordance with subsection (d).

(2) When milk or other dairy products are transported, stored or processed or bottled through the same lines or equipment as bottled water, vended water, retail water and bulk water, the feed line used to convey water to the filler shall be dedicated to water only. Each time before water is transported, stored or processed or bottled, other product contact surfaces shall be disassembled and cleaned in accordance with subsection (d).

(f) *Special operational requirements for bottled water systems and retail water facilities.*

(1) Bottled water systems and retail water facilities using ozone as a final disinfectant shall maintain an ozone residual of 0.1—0.4 ppm in the bottle immediately after filling.

(2) When ozone is used as a disinfectant for bottled water or retail water, gaskets, o-rings and similar flexible material shall be made of silicone rubber, teflon or other ozone-resistant material. These flexible parts shall be replaced when they show evidence of surface deterioration.

(g) *Special operational requirements for water vending machine systems.*

(1) Each vending machine shall be cleaned, serviced and sanitized in accordance with the manufacturer's service manuals, but at least once every 2

weeks. A record of all cleaning and maintenance operations for each machine shall be kept by the operator with a copy retained in the interior of the machine.

(2) A notice to consumers listing the industry's recommendations for the care, cleaning and type of container suitable for use with the water vending machine shall be posted at each water vending machine.

(h) *Special operational requirements for bulk water hauling systems.*

(1) Transportation tanks or containers shall be sealed at all times except when being cleaned, filled or when water is being delivered.

(2) Hoses, pumps, connections and fittings shall be sanitized prior to delivering water using a disinfectant solution containing at least 50 ppm of chlorine at 75°F for 1 minute or the equivalent.

(3) Hoses, pumps, connections and fittings used for loading and delivering potable water shall be stored, capped or covered and used so as to be protected from contamination at all times.

(4) A record of cleaning and sanitizing activities conducted on the interior of the transportation tank or transfer equipment shall be maintained with the vehicle and shall be available to the Department upon request.

Source

The provisions of this § 109.1009 adopted May 15, 1992, effective May 16, 1992, 22 Pa.B. 2621; amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895. Immediately preceding text appears at serial pages (254848) to (254849) and (207301) to (207302).

Cross References

This section cited in 25 Pa. Code § 109.1008 (relating to system management responsibilities).

Subchapter K. LEAD AND COPPER

Sec.

109.1101. Scope.

109.1102. Action levels and treatment technique requirements.

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Source

The provisions of this Subchapter K adopted December 23, 1994, effective December 24, 1994, 24 Pa.B. 6404, unless otherwise noted.

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Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.304 (relating to analytical requirements); 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); and 25 Pa. Code § 109.801 (relating to certification requirement).

§ 109.1101. Scope.

(a) This subchapter establishes treatment technique requirements that include requirements for corrosion control treatment, lead service line replacement and public education. These requirements are triggered, in some cases, by samples collected at consumers' taps which exceed a lead or copper action level.

(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 and fewer than or equal to 50,000 persons. A small water system serves 3,300 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.

Cross References

This section cited in 25 Pa. Code § 109.301 (relating to general monitoring requirements).

§ 109.1102. Action levels and treatment technique requirements.

(a) *Action levels for lead and copper.*

(1) The lead action level is 0.015 mg/L.

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

(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.

(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.

(b) *Treatment technique requirement for corrosion control.*

(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

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).

(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.

(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.

(4) *Source water treatment.* 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.

(i) A system which exceeds either the lead or copper action level shall conduct initial source water monitoring in accordance with § 109.1103(a)(3). The water supplier shall use the results of this monitoring along with the results of lead and copper tap and water quality parameter 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).

(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.

(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.

(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).

(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.

Source

The provisions of this § 109.1102 amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 17, 2010, effective December 18, 2010, 40 Pa.B. 7212. Immediately preceding text appears at serial pages (347186), (290611) to (290612) and (347187).

Cross References

This section cited in 25 Pa. Code § 109.810 (relating to reporting and notification requirements); 25 Pa. Code § 109.901 (relating to requirements for a variance); 25 Pa. Code § 109.903 (relating to requirements for an exemption); 25 Pa. Code § 109.1103 (relating to monitoring requirements); 25 Pa. Code § 109.1104 (relating to public education and notification); 25 Pa. Code § 109.1105 (relating to permit requirements); 25 Pa. Code § 109.1107 (relating to system management responsibilities); and 25 Pa. Code § 109.1108 (relating to fees).

§ 109.1103. Monitoring requirements.

(a) *Initial monitoring.*

(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:

<i>System size</i>	<i>1st monitoring period begins on</i>
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).

<i>System size (# of people served)</i>	<i># of Sample Sites</i>
> 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

(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.

<i>System size (# of people served)</i>	<i># of Sample Sites</i>
> 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.

(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.

(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).

(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.

(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).

(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.

<i>System size (# of people served)</i>	<i># of Sample Sites</i>
> 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.

<i>System size (# of people served)</i>	<i># of Sample Sites</i>
> 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).

(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.

(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 multi-family 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 nonfirst-draw 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.

(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.

(i) *Analytical methods.* Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica and temperature shall be conducted in accordance with 40 CFR 141.89 (relating to analytical methods) which is incorporated by reference. The Department will only consider lead and copper samples analyzed by a laboratory certified by the Department. Measurements for water quality parameters may be performed by a person meeting the operator certification requirements of § 109.1107(c).

(j) *Invalidation of lead or copper tap water samples.* A sample invalidated under this paragraph 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. 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.

(iii) The sample container was damaged in transit.

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

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

(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 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 period, whichever occurs later.

(ii) Replacement samples taken after the end of the applicable monitoring period shall not be used to meet the monitoring requirements of a subsequent monitoring period.

(iii) Replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(k) *Monitoring waivers for small systems.* A small system that meets the criteria of this subsection may apply to the Department to reduce the frequency of monitoring for lead and copper 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.

(1) *Materials criteria.* The system shall demonstrate that its distribution system, service lines and all drinking water plumbing, including plumbing conveying drinking water 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, 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 standard established under 42 U.S.C.A. § 300g-6(e) (relating to plumbing fittings and fixtures).

(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 or copper service lines.

(2) *Monitoring criteria for waiver issuance.* The system shall have completed at least one 6-month round of routine 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). 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.

(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.

(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. 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 waived in accordance with subsection (e)(1)(iii) at the reduced number of sites identified in subsection (e) at least once every 9 years and provide the materials certification specified in paragraph (1) for the contaminants 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), 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.

(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 (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.

(ii) A system with a copper waiver no longer satisfies the materials criteria of subsection (k)(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.

(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:

(i) If the system exceeds the lead or copper, or both, action level, the system shall implement corrosion control treatment 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, 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).

Authority

The provisions of this § 109.1103 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.1103 amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended August 13, 2004, effective August 14, 2004, 34 Pa.B. 4435; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 17, 2010, effective December 18, 2010, 40 Pa.B. 7212; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (355073) to (355089).

Cross References

This section cited in 25 Pa. Code § 109.1 (relating to definitions); 25 Pa. Code § 109.1102 (relating to action levels and treatment technique requirements); 25 Pa. Code § 109.1104 (relating to public education and notification); and 25 Pa. Code § 109.1107 (relating to system management responsibilities).

§ 109.1104. Public education and notification.

(a) *Public education program.* The water supplier for a 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 requirements), which is incorporated by reference, in all of the printed and broadcast 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. If appropriate or as designated by the Department, public education materials must be bilingual or multilingual. 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.

(i) *Content of written materials.* Community water suppliers and non-transient 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.

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

(2) *Delivery.*

(i) *Community water system requirements.* Within 60 days after the end of the monitoring 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 required to conduct monitoring annually or less frequently, 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.

(A) The water supplier shall deliver printed materials meeting the content requirements of paragraph (1) to all bill paying customers.

(B) The water supplier shall deliver education materials meeting the content requirements of paragraph (1) to the local board or department of public health that has jurisdiction over the water system's service area, along with an informational notice that encourages distribution to all the

potentially affected consumers. The water supplier shall contact the local board or department of public health directly by phone or in person. The local board or department of public health may provide a specific list of additional community based organizations serving target populations which may include organizations outside the service area of the water system. If 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 shall deliver education materials meeting the content requirements of paragraph (1) to the organizations listed in subclauses (I)—(VI) 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:

- (I) Public and private schools or local school boards, or both.
- (II) Women, Infants, and Children or Head Start Programs whenever available.
- (III) Public and private hospitals and medical clinics.
- (IV) Pediatricians.
- (V) Family planning clinics.
- (VI) Local welfare agencies.

(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.

(E) The water supplier shall provide information on or in each water bill at least quarterly. 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 levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT WATER SYSTEM NAME] (or visit [INSERT WEB SITE ADDRESS]).”

(F) The water supplier shall post education materials meeting the content requirements of paragraph (1) on the water system’s web site if the system serves a population greater than 100,000 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.

(H) In addition to the requirements of clauses (A)—(F), community water suppliers shall implement at least three activities from the categories listed in subclauses (I)—(IX). The educational content and selection of these activities shall 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 multifamily homes and institutions.
- (IX) Other methods approved by the Department.

(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 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 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 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 required to conduct monitoring annually or less frequently, 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.

(A) The water supplier 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 and distribute informational pamphlets or brochures, or both, on lead in drinking water to each person routinely served by the nontransient noncommunity water system. Systems may use electronic transmission in lieu 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.

(iii) *Extension of the 60-day delivery deadline.* Water systems may request 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.

(3) *Discontinuation of 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 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.

(b) *Notification of results.* Water systems shall deliver a consumer tap notice of lead 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 results of lead tap water monitoring for the tap that was sampled.

(ii) An explanation of the health effects of lead.

(iii) A list of steps consumers can take to reduce exposure to lead in drinking water.

(iv) Contact information for the water system.

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

(2) *Timing.* Water systems shall provide the consumer notice within 30 days after the system learns 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. The system shall provide notice to all persons served by the tap that was sampled, including consumers who do not receive water bills.

(c) *Public notification requirements.* A water supplier 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.

(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).

Source

The provisions of this § 109.1104 amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended December 17, 2010, effective December 18, 2010, 40 Pa.B. 7212. Immediately preceding text appears at serial pages (345378), (290633) to (290634) and (345379).

Cross References

This section cited in 25 Pa. Code § 109.1103 (relating to monitoring requirements); and 25 Pa. Code § 109.1107 (relating to system management responsibilities).

§ 109.1105. Permit requirements.

(a) *General permit requirements.* A person may not construct, substantially modify or operate corrosion control treatment 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 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 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.

(1) *Community water system minor permit amendments.* The 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 shall 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.

(2) *Nontransient noncommunity water system permits.* The 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.

(c) *Operation permits.* Except for nontransient noncommunity water systems complying with subsection (b)(2), 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 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) and the Department will issue an amended operation permit designating the performance requirements as specified in § 109.1102(b)(5).

Source

The provisions of this 109.1105 amended July 20, 2001, effective July 21, 2001, 31 Pa.B. 3895; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119. Immediately preceding text appears at serial pages (290635) to (290637).

Cross References

This section cited in 25 Pa. Code § 109.503 (relating to public water system construction permits); 25 Pa. Code § 109.1102 (relating to action levels and treatment technique requirements); 25 Pa. Code § 109.1106 (relating to design standards); and 25 Pa. Code § 109.1108 (relating to fees).

§ 109.1106. Design standards.

Corrosion control treatment 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 minimum alkalinity measured in all distribution samples of 20 mg/l.

§ 109.1107. System management responsibilities.

(a) *Reporting and recordkeeping.* Systems shall comply with the following requirements 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).

(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.

(i) *Lead and copper tap monitoring results.* The following minimum information is required when reporting lead and copper tap monitoring 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 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 lead and copper tap monitoring.

(I) The sample location.

(J) The 90th percentile result.

(K) Whether an action level has been exceeded.

(L) 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.
- (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.
- (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.

(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.

(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).

(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.

(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, which shall be kept for at least 12 years.

(ii) A copy of a current sample site location plan, which shall be kept for the life of the facility.

(iii) Copies of 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 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 correspondence with the Department relating to permitting, construction and operation of corrosion control treatment, including source water treatment, if applicable, which shall be kept for at least 12 years.

(vi) Plans, specifications and permits for water system facilities, which shall be kept for the life of the facility.

(b) *Operation and maintenance plan.*

(1) A community water system which completes construction or modification of corrosion control treatment 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.

(2) A nontransient noncommunity water system which completes construction or modification of corrosion control treatment 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 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 non-community water systems which are required to construct or modify corrosion control treatment 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 line 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).

Authority

The provisions of this § 109.1107 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.1107 amended August 9, 2002, effective August 10, 2002, 32 Pa.B. 3894; amended May 22, 2009, effective May 23, 2009, 39 Pa.B. 2661; corrected August 29, 2009, effective August 1, 2009, 39 Pa.B. 5119; amended December 17, 2010, effective December 18, 2010, 40 Pa.B. 7212; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (355096) to (355100) and (383517).

Cross References

This section cited in 25 Pa. Code § 109.1102 (relating to action levels and treatment technique requirements); 25 Pa. Code § 109.1103 (relating to monitoring requirements); and 25 Pa. Code § 109.1105 (relating to permit requirements).

§ 109.1108. Fees.

A system receiving permitting and related services from the Department under § 109.1105 (relating to permit requirements) for corrosion control treatment facilities shall pay the applicable fees in this section by a check in the amount specified in this section to the "Commonwealth of Pennsylvania."

(1) An application for a construction permit or major permit amendment under § 109.1105(b) shall be accompanied by payment for the applicable fee as follows:

<i>System size</i>	<i>Fee</i>
Small	\$ 250
Medium	\$ 500
Large	\$1,750

(2) A system not required to submit an application for a construction permit or major permit amendment under § 109.1105(b) shall submit payment for the applicable fee with its request for Department designation of optimal corrosion control treatment performance requirements in accordance with § 109.1102(b)(2) (relating to action levels and treatment technique requirements):

<i>System size</i>	<i>Fee</i>
Small	\$ 125
Medium	\$ 375
Large	\$1,250

Cross References

This section cited in 25 Pa. Code § 109.503 (relating to public water system construction permits).

Subchapter L. LONG-TERM 2 ENHANCED SURFACE WATER TREATMENT RULE

Sec.

- 109.1201. Scope.
- 109.1202. Monitoring requirements.
- 109.1203. Bin classification and treatment technique requirements.
- 109.1204. Requirements for microbial toolbox components.
- 109.1205. Grandfathering previously collected data.
- 109.1206. Reporting and recordkeeping requirements.

Authority

The provisions of this Subchapter L adopted under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20), unless otherwise noted.

Source

The provisions of this Subchapter L adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.304 (relating to analytical requirements) 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.507 (relating to permits for innovative technology); 25 Pa. Code § 109.602 (relating to acceptable design); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.801 (relating to certification requirement); 25 Pa. Code § 109.1002 (relating to MCLs, MRDLs or treatment techniques); 25 Pa. Code § 109.1003 (relating to monitoring requirements); 25 Pa. Code § 109.1008 (relating to management responsibilities).

§ 109.1201. Scope.

(a) *Scope.* This subchapter establishes or extends treatment technique requirements in lieu of maximum contaminant levels for *Cryptosporidium*. These requirements are in addition to requirements for filtration and disinfection.

(b) *Applicability.* This subchapter applies to public water systems supplied by a surface water source and public water systems supplied by a groundwater source under the direct influence of surface water. Systems that are part of a combined distribution system shall comply with the requirements of this subchapter based on the population of the largest system in the combined distribution system.

Source

The provisions of this § 109.1201 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.301 (relating to general monitoring requirements).

§ 109.1202. Monitoring requirements.

(a) *Initial round of source water monitoring.* A system shall conduct the following monitoring on the schedule in subsection (c) unless it meets the monitoring exemption criteria in subsection (d):

(1) Filtered systems serving at least 10,000 people shall sample their source water for *Cryptosporidium*, *E. coli* and turbidity at least monthly for 24 months.

(2) Unfiltered systems serving at least 10,000 people shall sample their source water for *Cryptosporidium* at least monthly for 24 months.

(3) Filtered systems serving less than 10,000 people shall sample their source water for *E. coli* at least once every 2 weeks for 12 months. A filtered system serving less than 10,000 people may avoid *E. coli* monitoring if the system notifies the Department that it will monitor for *Cryptosporidium* as described in paragraph (4). The system shall notify the Department no later

than 3 months prior to the date the system is otherwise required to start *E. coli* monitoring under subsection (c).

(4) Filtered systems serving less than 10,000 people shall sample their source water for *Cryptosporidium* at least twice per month for 12 months or at least monthly for 24 months if they meet one of the following subparagraphs, based on monitoring conducted under paragraph (3):

(i) For systems using lake/reservoir sources, the annual mean *E. coli* concentration is greater than 100 *E. coli*/100 mL.

(ii) For systems using flowing stream sources, the annual mean *E. coli* concentration is greater than 100 *E. coli*/100 mL.

(iii) The system does not conduct *E. coli* monitoring as described in paragraph (3).

(iv) Systems using groundwater sources under the direct influence of surface water (GUDI) shall comply with this paragraph based on the *E. coli* level that applies to the nearest surface water body. If no surface water body is nearby, the system shall comply based on the requirements that apply to systems using lake/reservoir sources.

(5) For filtered systems serving less than 10,000 people, the Department may approve monitoring for an indicator other than *E. coli* under paragraph (3). The Department also may approve an alternative to the *E. coli* concentration in paragraph (4)(i), (ii) or (iv) to trigger *Cryptosporidium* monitoring. This approval by the Department would be based on EPA-supported research indicating the validity of an alternative to *E. coli*. The Department will provide this approval to the system in writing and will include the basis for the Department's determination that the alternative indicator, trigger level, or both, will provide a more accurate identification of whether a system will exceed the Bin 1 *Cryptosporidium* level in § 109.1203(c) (relating to bin classification and treatment technique requirements).

(6) Unfiltered systems serving less than 10,000 people shall sample their source water for *Cryptosporidium* at least twice per month for 12 months or at least monthly for 24 months.

(7) Systems may sample more frequently than required under this section if the sampling frequency is evenly spaced throughout the monitoring period.

(b) *Second round of source water monitoring.* Systems shall conduct a second round of source water monitoring that meets the requirements for monitoring parameters, frequency, and duration described in subsection (a), unless they meet the monitoring exemption criteria in subsection (d). Systems shall conduct this monitoring on the schedule in subsection (c).

(c) *Source water monitoring schedule.* Systems shall begin the monitoring required in subsections (a) and (b) as follows:

(1) At least 100,000 people:

(i) Begin the first round of source water monitoring no later than the month beginning October 1, 2006.

- (ii) Begin the second round of source water monitoring at least 6 years after submitting the initial bin classification but no later than the month beginning April 1, 2015.
- (2) From 50,000 to 99,999 people:
 - (i) Begin the first round of source water monitoring no later than the month beginning April 1, 2007.
 - (ii) Begin the second round of source water monitoring at least 6 years after submitting the initial bin classification but no later than the month beginning October 1, 2015.
- (3) From 10,000 to 49,999 people:
 - (i) Begin the first round of source water monitoring no later than the month beginning April 1, 2008.
 - (ii) Begin the second round of source water monitoring at least 6 years after submitting the initial bin classification but no later than the month beginning October 1, 2016.
- (4) Less than 10,000 people and monitor for E coli:
 - (i) Begin the first round of source water monitoring no later than the month beginning October 1, 2008.
 - (ii) Begin the second round of source water monitoring at least 6 years after submitting the initial bin classification but no later than the month beginning October 1, 2017.
- (5) Less than 10,000 and monitor for *Cryptosporidium*:
 - (i) Begin the first round of source water monitoring no later than the month beginning April 1, 2010.
 - (ii) Begin the second round of source water monitoring at least 6 years after submitting the initial bin classification but no later than the month beginning April 1, 2019.
- (d) *Source water monitoring avoidance.*
 - (1) *5.5 log treatment.* A filtered system is not required to conduct source water monitoring under this subchapter if the system will provide a total of at least 5.5-log of treatment for *Cryptosporidium*, equivalent to meeting the treatment requirements of Bin 4 in § 109.1203.
 - (2) *Notification.* If a system chooses to provide the level of treatment in paragraph (1), as applicable, rather than start source water monitoring, the system shall notify the Department in writing no later than the date the system is otherwise required to submit a sampling schedule for monitoring under subsections (h)—(j). Alternatively, a system may choose to stop sampling at any point after it has initiated monitoring if it notifies the Department in writing that it will provide this level of treatment. Systems shall install and operate technologies to provide this level of treatment by the applicable treatment compliance date in § 109.1203(k)—(o).
- (e) *Plants operating only part of the year.* Public water systems supplied by a surface water source and public water systems supplied by a groundwater

source under the direct influence of surface water that operate for only part of the year shall conduct source water monitoring in accordance with this subchapter, but with the following modifications:

(1) Systems shall sample their source water only during the months that the plant operates unless the Department specifies another monitoring period based on plant operating practices.

(2) Systems with plants that operate less than 6 months per year and that monitor for *Cryptosporidium* shall collect at least six *Cryptosporidium* samples per year during each of 2 years of monitoring. Samples must be evenly spaced throughout the period the plant operates or is anticipated to operate.

(f) *New sources.*

(1) A system that intends to use a new source of surface water or GUDI after the system is required to begin monitoring under subsection (c) shall monitor the new source on a schedule the Department approves. Any source that has not been monitored according to the requirements of this subchapter will be considered to be a new source. Source water monitoring for new sources must meet the requirements of this subchapter. The system shall also meet the bin classification and *Cryptosporidium* treatment requirements of § 109.1203(a)—(j), as applicable, for the new source on a schedule approved by the Department. Sources that have not been monitored according to the requirements of this subchapter will be considered to be Bin 4 until monitoring is adequately completed. No later than the applicable *Cryptosporidium* compliance dates specified in § 109.1203(k), systems wishing to use sources that have not been monitored shall meet the Bin 4 treatment requirements of § 109.1203(a)—(j) unless otherwise indicated by the Department.

(2) The requirements of this subsection apply to public water systems supplied by a surface water source or groundwater source under the direct influence of surface water that begin operation after the monitoring start date applicable to the system's size under subsection (c).

(3) The system shall begin a second round of source water monitoring no later than 6 years following initial bin classification under § 109.1203 or determination of the *Cryptosporidium* level under § 109.1203(i) and (j), as applicable.

(g) *Monitoring violations.* Failure to collect any source water sample required under this section in accordance with the sampling schedule, sampling location, analytical method, approved laboratory and reporting requirements of this subsection, §§ 109.304 and 109.1206(a)—(e) (relating to analytical requirements; and reporting and recordkeeping requirements) is a monitoring violation.

(h) *Source water sampling schedules.* Systems required to conduct source water monitoring under subsections (a)—(g) shall submit a sampling schedule that specifies the calendar dates when the system will collect each required sample.

- (1) Systems shall submit sampling schedules no later than 3 months prior to the applicable date listed in subsection (c) for each round of required monitoring.
- (2) A system must comply with the following:
 - (i) A system serving at least 10,000 people shall submit its sampling schedule for the initial round of source water monitoring under subsection (a) to the EPA electronically at <https://intranet.epa.gov/lt2/>.
 - (ii) If a system is unable to submit the sampling schedule electronically, the system may use an alternative approach for submitting the sampling schedule that the EPA approves.
- (3) A system serving less than 10,000 people shall submit its sampling schedules for the initial round of source water monitoring under subsection (a) to the Department.
- (4) Systems shall submit sampling schedules for the second round of source water monitoring under subsection (b) to the Department.
- (5) If the EPA or the Department does not respond to a system regarding its sampling schedule, the system shall sample at the reported schedule.
 - (i) *Source water sample collection period.* Systems shall collect samples within 2 days before or 2 days after the dates indicated in their sampling schedule (that is, within a 5 day period around the schedule date) unless one of the conditions of paragraph (1) or (2) applies.
 - (1) *Extreme sample collection conditions.* If an extreme condition or situation exists that may pose danger to the sample collector, or that cannot be avoided and causes the system to be unable to sample in the scheduled 5-day period, the system shall sample as close to the scheduled date as is feasible unless the Department approves an alternative sampling date. The system shall submit an explanation for the delayed sampling date to the Department concurrent with the shipment of the sample to the laboratory.
 - (2) *Replacement samples.* The requirements for replacement samples are as follows:
 - (i) If a system is unable to report a valid analytical result for a scheduled sampling date due to equipment failure, loss of or damage to the sample, failure to comply with the analytical method requirements, including the quality control requirements in § 109.304, or the failure of an approved laboratory to analyze the sample, then the system shall collect a replacement sample.
 - (ii) The system shall collect the replacement sample not later than 21 days after receiving information that an analytical result cannot be reported for the scheduled date unless the system demonstrates that collecting a replacement sample within this time frame is not feasible or the Department approves an alternative resampling date. The system shall submit an explanation for the delayed sampling date to the Department concurrent with the shipment of the sample to the laboratory.

(j) *Missed samples.* Systems that fail to meet the criteria of subsection (i) for any source water sample required under subsections (a)—(g) shall revise their sampling schedules to add dates for collecting all missed samples. Systems shall submit the revised schedule to the Department for approval prior to when the system begins collecting the missed samples.

(k) *Source water sampling locations.* Systems required to conduct source water monitoring under subsections (a)—(g) shall collect samples for each plant that treats a surface water or GUDI source. When multiple plants draw water from the same influent, such as the same pipe or intake, the Department may approve one set of monitoring results to be used to satisfy the requirements of subsections (a)—(g) for all plants.

(l) *Chemical treatment prior to sampling location.* Systems shall collect source water samples prior to chemical treatment, such as coagulants, oxidants and disinfectants.

(m) *Source water sample location for plants that recycle.* Systems that recycle filter backwash water shall collect source water samples prior to the point of filter backwash water addition.

(n) *Bank filtration.*

(1) Systems that receive *Cryptosporidium* treatment credit for bank filtration to meet existing treatment technique requirements of § 109.202(c) (relating to State MCLs, MRDLs and treatment technique requirements), as applicable, shall collect source water samples in the surface water prior to bank filtration.

(2) Systems that use bank filtration as pretreatment to a filtration plant shall collect source water samples from the well (that is, after bank filtration). Use of bank filtration during monitoring must be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive treatment credit for the bank filtration under § 109.1204(f) (relating to requirements for microbial toolbox components).

(o) *Multiple sources.* Systems with plants that use multiple water sources, including multiple surface water sources and blended surface water and groundwater sources, shall collect samples as specified in paragraph (1) or (2). The use of multiple sources during monitoring must be consistent with routine operational practice. Sources not adequately evaluated during the monitoring period will be considered new sources and the requirements under subsection (f) will apply. Systems may begin monitoring a new source as soon as a sampling schedule and plan have been approved by the Department.

(1) If a sampling tap is available where the sources are combined prior to treatment, systems shall collect samples from the tap.

(2) If a sampling tap where the sources are combined prior to treatment is not available, systems shall collect samples at each source near the intake on the same day and shall follow either subparagraph (i) or (ii) for sample analysis.

(i) Systems may composite samples from each source into one sample prior to analysis. The volume of sample from each source must be weighted according to the proportion of the source in the total plant flow at the time the sample is collected.

(ii) Systems may analyze samples from each source separately and calculate a weighted average of the analysis results for each sampling date. The weighted average must be calculated by multiplying the analysis result for each source by the fraction the source contributed to total plant flow at the time the sample was collected and then summing these values.

(p) *Additional requirements.* A system shall submit a description of its sampling locations to the Department at the same time as the sampling schedule required under subsections (h)—(j). This description must address the position of the sampling location in relation to the system's water sources and treatment processes, including pretreatment, points of chemical treatment and filter backwash recycle. If the Department does not respond to a system regarding sampling locations, the system shall sample at the reported locations.

Authority

The provisions of this § 109.1202 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.1202 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (347191) to (347192), (374677) to (374678) and (347195) to (347197).

Cross References

This section cited in 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.418 (relating to special notice for failure to conduct source water *Cryptosporidium* monitoring or failure to determine bin classification); 25 Pa. Code § 109.503 (relating to public water system construction permits); 25 Pa. Code § 109.1203 (relating to bin classification and treatment technique requirements); 25 Pa. Code § 109.1204 (relating to requirements for microbial toolbox components); 25 Pa. Code § 109.1205 (relating to grandfathering previously collected data); 25 Pa. Code § 109.1206 (relating to reporting and recordkeeping requirements); and 25 Pa. Code § 109.1203 (relating to bin classification and treatment technique requirements).

§ 109.1203. Bin classification and treatment technique requirements.

(a) *Bin classification.* Following completion of the initial round of source water monitoring required under § 109.1202(a) (relating to monitoring requirements), filtered systems shall calculate an initial *Cryptosporidium* bin concentration for each plant for which monitoring was required. Calculation of the bin concentration must use the *Cryptosporidium* results reported under § 109.1202(a) and must follow the procedures in subsection (b)(1)—(5).

(b) *Procedures for calculating bin classifications.*

(1) For systems that collect a total of at least 48 samples, the bin concentration is equal to the arithmetic mean of all sample concentrations.

(2) For systems that collect a total of at least 24 samples, but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which *Cryptosporidium* samples were collected.

(3) For systems that serve less than 10,000 people and monitor for *Cryptosporidium* for only 1 year (that is, collect 24 samples in 12 months), the bin concentration is equal to the arithmetic mean of all sample concentrations.

(4) For systems with plants operating only part of the year that monitor less than 12 months per year under § 109.1202(e), the bin concentration is equal to the highest arithmetic mean of all sample concentrations during any year of *Cryptosporidium* monitoring.

(5) If the monthly *Cryptosporidium* sampling frequency varies, systems shall first calculate a monthly average for each month of monitoring. Systems shall then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification in paragraphs (1)—(4).

(c) *Cryptosporidium bin concentration thresholds.* Systems required to monitor for *Cryptosporidium* under § 109.1202 shall use *Cryptosporidium* bin concentration calculated under subsections (a) and (b) to determine their initial bin classification as follows:

(1) With a *Cryptosporidium* bin concentration of less than 0.075 oocysts/L, the bin classification is Bin 1.

(2) With a *Cryptosporidium* bin concentration of 0.075 oocysts/L or higher, but less than 1.0 oocysts/L, the bin classification is Bin 2.

(3) With a *Cryptosporidium* bin concentration of 1.0 oocysts/L or higher but less than 3.0 oocysts/L, the bin classification is Bin 3.

(4) With a *Cryptosporidium* bin concentration of 3.0 oocysts/L or higher, the bin classification is Bin 4.

(5) If serving less than 10,000 people and not required to monitor for *Cryptosporidium* under § 109.1202(a)(4), the bin classification is Bin 1.

(d) *Cryptosporidium bin concentration recalculation requirements.* Following completion of the second round of source water monitoring required under § 109.1202(b), filtered systems shall recalculate their *Cryptosporidium* bin concentration using the *Cryptosporidium* results reported under § 109.1202(b) and following the procedures in subsection (b). Systems shall then redetermine their bin classification using the bin concentrations subsection (c).

(e) *Filtered system additional Cryptosporidium treatment requirements.* Filtered systems shall provide the level of additional treatment for *Cryptosporidium* specified in this subsection based on their bin classification as determined under subsections (a)—(c) and according to the schedule in subsections (k)—(o). The treatments required under paragraphs (1)—(4) are in addition to existing treatment technique requirements contained in § 109.202(c) (relating to State MCLs, MRDLs and treatment technique requirements), which still apply. Systems using multiple sources shall establish their bin classification based on the highest bin source in use by the facility.

(1) *Bin 1.* If the system bin classification is Bin 1, the system shall provide additional *Cryptosporidium* treatment as follows:

- (i) Conventional filtration treatment (including softening), slow sand or diatomaceous earth filtration must provide no additional treatment.
- (ii) Direct filtration treatment must provide no additional treatment.
- (iii) Alternative filtration technologies must provide no additional treatment.

(2) *Bin 2.* If the system bin classification is Bin 2, the system shall provide additional *Cryptosporidium* treatment as follows:

- (i) Conventional filtration treatment (including softening), slow sand or diatomaceous earth filtration must provide 1-log additional treatment.
- (ii) Direct filtration treatment must provide 1.5 log additional treatment.
- (iii) Alternative filtration technologies must provide additional treatment as determined by the Department such that the total *Cryptosporidium* removal and inactivation is at least 4.0 log.

(3) *Bin 3.* If the system bin classification is Bin 3, the system shall provide additional *Cryptosporidium* treatment as follows:

- (i) Conventional filtration treatment (including softening), slow sand or diatomaceous earth filtration must provide 2-log additional treatment.
- (ii) Direct filtration treatment must provide 2.5 log additional treatment.

- (iii) Alternative filtration technologies must provide additional treatment as determined by the Department so that the total *Cryptosporidium* removal and inactivation is at least 5.0 log.
- (4) *Bin 4*. If the system bin classification is Bin 4, the system shall provide additional *Cryptosporidium* treatment as follows:
 - (i) Conventional filtration treatment (including softening), slow sand or diatomaceous earth filtration must provide 2.5-log additional treatment.
 - (ii) Direct filtration treatment must provide 3 log additional treatment.
 - (iii) Alternative filtration technologies must provide additional treatment as determined by the Department so that the total *Cryptosporidium* removal and inactivation is at least 5.5 log.
- (f) *Treatment and management options for filtered systems, microbial toolbox*.
 - (1) Filtered systems shall use one or more of the treatment and management options listed in § 109.1204 (relating to requirements for microbial toolbox components), termed the microbial toolbox, to comply with the additional *Cryptosporidium* treatment required in subsection (e).
 - (2) Systems using sources classified in Bin 3 and Bin 4 shall achieve at least 1-log of the additional *Cryptosporidium* treatment required under § 109.1204(a) using either one or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone or UV, as described in § 109.1204(b), (c) and (n)—(q) (relating to requirements for microbial toolbox components).
- (g) *Failure to meet treatment credit*. Failure by a system in any month to achieve treatment credit by meeting criteria in § 109.1204(b), (c) and (n)—(q) for microbial toolbox options that is at least equal to the level of treatment required in subsection (e) is a violation of the treatment technique requirement.
- (h) *Increased watershed contamination*. If the Department determines during a sanitary survey or an equivalent source water assessment that after a system completed the monitoring conducted under § 109.1202(a) or (b), significant changes occurred in the system's watershed that could lead to increased contamination of the source water by *Cryptosporidium*, the system shall take actions specified by the Department to address the contamination. These actions may include additional source water monitoring or implementing microbial toolbox options listed in § 109.1204, or both.
 - (i) *Unfiltered systems determination of Cryptosporidium bin level, initial round*. Following completion of the initial source water monitoring required under § 109.1202(a), unfiltered systems shall calculate their bin classification using the methods listed in subsections (b) and (c).
 - (j) *Unfiltered systems determination of Cryptosporidium bin level, second round*. Following completion of the second round of source water monitoring required under § 109.1202(b), unfiltered systems shall calculate their bin classification using the methods listed in subsections (b) and (c).

(k) *Schedule for compliance with Cryptosporidium treatment requirements.* Following initial bin classification under subsection (c), filtered systems shall provide the level of additional treatment for *Cryptosporidium* required under subsections (e)—(h) according to the schedule in subsection (m). The treatments required under subsections (e)—(h) are in addition to existing treatment technique requirements contained in § 109.202(c), which still apply.

(l) *Treatment technique requirements for unfiltered systems.* Following initial determination of the *Cryptosporidium* level under subsection (i), unfiltered systems shall meet all applicable treatment technique requirements of § 109.202(c) and provide the additional level of treatment for *Cryptosporidium* required under subsections (e)—(h) on a schedule approved by the Department but no later than the schedule in subsection (m).

(m) *Cryptosporidium treatment compliance dates.* *Cryptosporidium* treatment compliance dates are as follows:

(1) Systems that serve at least 100,000 people shall comply with *Cryptosporidium* treatment requirements by April 1, 2012.

(2) Systems that serve from 50,000 to 99,999 people shall comply with *Cryptosporidium* treatment requirements by October 1, 2012.

(3) Systems that serve from 10,000 to 49,999 people shall comply with *Cryptosporidium* treatment requirements by October 1, 2013.

(4) Systems that serve less than 10,000 people shall comply with *Cryptosporidium* treatment requirements by October 1, 2014.

(5) On a case by case basis within an agreed upon time frame, the Department may allow up to an additional 2 years for complying with the treatment requirement for systems making capital improvements.

(n) *Change in Cryptosporidium level for filtered system.* If the bin classification for a filtered system increases following the second round of source water monitoring, as determined under subsection (d), the system shall provide the level of treatment for *Cryptosporidium* required under subsections (e)—(h) on a schedule the Department approves.

(o) *Change in Cryptosporidium level for unfiltered system.* If the *Cryptosporidium* bin level for an unfiltered system increases following the second round of monitoring, as determined under subsection (j), the system shall provide the additional level of *Cryptosporidium* treatment under subsections (e)—(h) on a schedule the Department approves.

Source

The provisions of this § 109.1203 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery notice); 25 Pa. Code § 109.418 (relating to special notice for failure to conduct source water *Cryptosporidium*

monitoring or failure to determine bin classification); 25 Pa. Code § 109.605 (relating to minimum treatment design standards); 25 Pa. Code § 109.901 (relating to requirements for a variance); 25 Pa. Code § 109.903 (relating to requirements for an exemption); 25 Pa. Code § 109.1202 (relating to monitoring requirements); 25 Pa. Code § 109.1204 (relating to requirements for microbial toolbox components) 25 Pa. Code § 109.1206 (relating to recordkeeping requirements); and Appendix C to Subchapter L.

§ 109.1204. Requirements for microbial toolbox components.

(a) A system will receive the treatment credits listed in Appendix B to Subchapter L. Microbial Toolbox Summary Table: Options, Treatment Credits and Criteria, by meeting the conditions for microbial toolbox components described in subsections (b)—(q). A system shall apply these treatment credits to meet the treatment technique requirements listed in section § 109.1203 (relating to bin classification and treatment technique requirements).

(b) *Watershed control program.* Filtered systems receive 0.5-log *Cryptosporidium* treatment credit for implementing a watershed control program that meets the requirements of this subsection. This credit may not be used to maintain the additional log removal credits specified in § 109.1203. This credit may only be applied in addition to the toolbox options used to meet the minimum log removal and may apply in lieu of a toolbox option for which credit has been temporarily revoked. Unfiltered systems are not eligible for this credit.

(1) Systems that intend to apply for the watershed control program credit shall notify the Department of this intent at least 2 years prior to the treatment compliance date applicable to the system in § 109.1203(k)—(o).

(2) Systems shall submit to the Department a proposed watershed control plan at least 1 year before the applicable treatment compliance date in § 109.1203(k)—(o). The Department will approve the watershed control plan for the system to receive watershed control program treatment credit. The watershed control plan must include the following elements:

(i) Identification of an “area of influence” outside of which the likelihood of *Cryptosporidium* or fecal contamination affecting the treatment plant intake is not significant. This is the area to be evaluated in future watershed surveys under paragraph (4)(ii).

(ii) Identification of both potential and actual sources of *Cryptosporidium* contamination and an assessment of the relative impact of these sources on the system’s source water quality.

(iii) An analysis of the effectiveness and feasibility of control measures that could reduce *Cryptosporidium* loading from sources of contamination to the system’s source water.

(iv) A statement of goals and specific actions the system will undertake to reduce source water *Cryptosporidium* levels. The plan must explain how the actions are expected to contribute to specific goals, identify watershed partners and their roles, identify resource requirements and commitments,

and include a schedule for plan implementation with deadlines for completing specific actions identified in the plan.

(3) Systems with existing watershed control programs (that is, programs in place on January 5, 2006) are eligible to seek this credit. Their watershed control plans must meet the criteria in paragraph (2) and must specify ongoing and future actions that will reduce source water *Cryptosporidium* levels.

(4) *Systems shall complete the following actions to maintain the 0.5-log credit:*

(i) Submit an annual watershed control program status report to the Department. The annual watershed control program status report must describe the system's implementation of the approved plan and assess the adequacy of the plan to meet its goals. The report must explain how the system is addressing any shortcomings in plan implementation, including those previously identified by the Department or as the result of the watershed survey conducted under subparagraph (ii). The report must also describe significant changes that have occurred in the watershed since the last watershed sanitary survey. If a system determines during implementation that making a significant change to its approved watershed control program is necessary, the system shall notify the Department prior to making any changes. If a change is likely to reduce the level of source water protection, the system shall also list in its notification the actions the system will take to mitigate this effect.

(ii) Undergo a watershed sanitary survey every 3 years for community water systems and every 5 years for noncommunity water systems and submit the survey report to the Department. The survey must be conducted according to Department guidelines and by persons the Department approves.

(A) The watershed sanitary survey must meet the following criteria:

(I) Encompass the region identified in the Department-approved watershed control plan as the area of influence.

(II) Assess the implementation of actions to reduce source water *Cryptosporidium* levels.

(III) Identify any significant new sources of *Cryptosporidium*.

(B) If the Department determines that significant changes may have occurred in the watershed since the previous watershed sanitary survey, systems shall undergo another watershed sanitary survey by a date the Department requires, which may be earlier than the regular date in this subparagraph.

(iii) The system shall make the watershed control plan, annual status reports, and watershed sanitary survey reports available to the public upon request. These documents must be in a plain language style and include criteria by which to evaluate the success of the program in achieving plan goals. The Department may approve systems to withhold from the public portions

of the annual status report, watershed control plan, and watershed sanitary survey based on water supply security considerations.

(5) If the Department determines that a system is not carrying out the approved watershed control plan, the Department may withdraw the watershed control program treatment credit.

(c) *Alternative source.*

(1) A system may conduct source water monitoring that reflects a different intake location (either in the same source or for an alternate source) or a different procedure for the timing or level of withdrawal from the source (alternative source monitoring). If the Department approves, a system may determine its bin classification under § 109.1203 based on the alternative source monitoring results.

(2) If systems conduct alternative source monitoring under paragraph (1), systems shall also monitor their current plant intake concurrently as described in § 109.1202 (relating to monitoring requirements).

(3) Alternative source monitoring under paragraph (1) must meet the requirements for source monitoring to determine bin classification, as described in § 109.1202 and § 109.1206 (relating to reporting and recordkeeping requirements). Systems shall report the alternative source monitoring results to the Department, along with supporting information documenting the operating conditions under which the samples were collected.

(4) If a system determines its bin classification under § 109.1203 using alternative source monitoring results that reflect a different intake location or a different procedure for managing the timing or level of withdrawal from the source, the system shall relocate the intake or permanently adopt the withdrawal procedure, as applicable, no later than the applicable treatment compliance date in § 109.1203(k)—(o).

(d) *Presedimentation.* Systems will receive 0.5-log *Cryptosporidium* treatment credit for a presedimentation basin during any month the process meets the criteria in this subsection.

(1) The presedimentation basin must be in continuous operation and must treat the entire plant flow taken from a surface water or GUDI source.

(2) The system shall continuously add a coagulant to the presedimentation basin.

(3) The presedimentation basin must achieve the performance criteria as follows:

(i) Demonstrates at least 0.5-log mean reduction of influent turbidity. This reduction must be determined using daily turbidity measurements in the presedimentation process influent and effluent and must be calculated as follows: \log_{10} (monthly mean of daily influent turbidity) - \log_{10} (monthly mean of daily effluent turbidity).

(ii) Comply with Department-approved performance criteria that demonstrate at least 0.5-log mean removal of micron-sized particulate material through the presedimentation process.

(e) *2-stage lime softening*. Systems receive an additional 0.5-log *Cryptosporidium* treatment credit for a 2-stage lime softening plant if chemical addition and hardness precipitation occur in two separate and sequential softening stages prior to filtration. Both softening stages must treat the entire plant flow taken from a surface water or GUDI source.

(f) *Bank filtration*. Systems receive *Cryptosporidium* treatment credit for bank filtration that serves as pretreatment to a filtration plant by meeting the criteria in this subsection. Systems using bank filtration when they begin source water monitoring under § 109.1202(a) shall collect samples as described in § 109.1202(n) and are not eligible for this credit.

(1) Wells with a groundwater flow path of at least 25 feet receive 0.5-log treatment credit. Wells with a groundwater flow path of at least 50 feet receive 1.0-log treatment credit. The groundwater flow path must be determined as specified in paragraph (4).

(2) Only wells in granular aquifers are eligible for treatment credit. Granular aquifers are those comprised of sand, clay, silt, rock fragments, pebbles or larger particles and minor cement. A system shall characterize the aquifer at the well site to determine aquifer properties. Systems shall extract a core from the aquifer and demonstrate that in at least 90% of the core length, grains less than 1.0 mm in diameter constitute at least 10% of the core material.

(3) Only horizontal and vertical wells are eligible for treatment credit.

(4) For vertical wells, the groundwater flow path is the measured distance from the edge of the surface water body under high flow conditions (determined by the 100 year floodplain elevation boundary or by the floodway, as defined in Federal Emergency Management Agency flood hazard maps) to the well screen. For horizontal wells, the groundwater flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.

(5) Systems shall monitor each wellhead for turbidity at least once every 4 hours while the bank filtration process is in operation. If monthly average turbidity levels, based on daily maximum values in the well, exceed 1 NTU, the system shall report this result to the Department and conduct an assessment within 30 days to determine the cause of the high turbidity levels in the well. If the Department determines that microbial removal has been compromised, the Department may revoke treatment credit until the system implements corrective actions approved by the Department to remediate the problem.

(6) Springs and infiltration galleries are not eligible for treatment credit under this section, but are eligible for credit under subsection (i).

(7) The Department may approve *Cryptosporidium* treatment credit for bank filtration based on a demonstration of performance study that meets the

criteria in this paragraph. This treatment credit may be greater than 1.0-log and may be awarded to bank filtration that does not meet the criteria in paragraphs (1)—(5).

(i) The study must follow a Department-approved protocol and must involve the collection of data on the removal of *Cryptosporidium* or a surrogate for *Cryptosporidium* and related hydrogeologic and water quality parameters during the full range of operating conditions.

(ii) The study must include sampling both from the production well and from monitoring wells that are screened and located along the shortest flow path between the surface water source and the production well.

(g) *Combined filter performance.* Systems using conventional filtration treatment or direct filtration treatment receive an additional 0.5-log *Cryptosporidium* treatment credit during any month the system meets the criteria in this subsection. Combined filter effluent (CFE) turbidity must be less than or equal to 0.15 NTU in at least 95% of the measurements. Turbidity must be measured as described in § 109.304(c) (relating to analytical requirements).

(h) *Individual filter performance.* Systems using conventional filtration treatment or direct filtration treatment will receive 0.5-log *Cryptosporidium* treatment credit, which can be in addition to the 0.5-log credit under subsection (g), during any month the system meets the criteria in this subsection. Compliance with these criteria must be based on individual filter turbidity monitoring as described in § 109.301(1)(iv) (relating to general monitoring requirements), as applicable.

(1) The filtered water turbidity for each individual filter must be less than or equal to 0.15 NTU in at least 95% of the measurements recorded each month.

(2) An individual filter may not have a measured turbidity greater than 0.3 NTU in two consecutive measurements taken 15 minutes apart.

(3) A system that has received treatment credit for individual filter performance and fails to meet the requirements of paragraph (1) or (2) during any month does not receive a treatment technique violation under § 109.1203(g) if the Department determines the following:

(i) The failure was due to unusual and short-term circumstances that could not reasonably be prevented through optimizing treatment plant design, operation, and maintenance.

(ii) The system has experienced no more than two of these failures in any calendar year.

(i) *Demonstration of performance.* The Department may approve *Cryptosporidium* treatment credit for drinking water treatment processes based on a demonstration of performance study that meets the criteria in this subsection. This treatment credit may be greater than or less than the prescribed treatment credits in § 109.1203(e)—(h) or subsection (d)—(f) and subsections (n)—(q) and may be awarded to treatment processes that do not meet the criteria for the prescribed credits.

(1) Systems cannot receive the prescribed treatment credit for any toolbox option in subsections (d)—(f) or (n)—(q) if that toolbox option is included in a demonstration of performance study for which treatment credit is awarded under this paragraph.

(2) The demonstration of performance study must follow a Department-approved protocol and must demonstrate the level of *Cryptosporidium* reduction the treatment process will achieve under the full range of expected operating conditions for the system.

(3) Approval by the Department will be in writing and may include monitoring and treatment performance criteria that the system shall demonstrate and report on an ongoing basis to remain eligible for the treatment credit. The Department may designate the criteria when necessary to verify that the conditions under which the demonstration of performance credit was approved are maintained during routine operation.

(j) *Bag and cartridge filters.* Systems receive *Cryptosporidium* treatment credit of up to 2.0-log for individual bag or cartridge filters and up to 2.5-log for bag or cartridge filters operated in series by meeting the criteria in paragraphs (1)—(10). To be eligible for this credit, systems shall report the results of challenge testing that meet the requirements of paragraphs (2)—(9) to the Department. The filters must treat the entire plant flow taken from a surface water or groundwater source under the direct influence of surface water source.

(1) The *Cryptosporidium* treatment credit awarded to bag or cartridge filters will be based on the removal efficiency demonstrated during challenge testing that is conducted according to the criteria in paragraphs (2)—(9). A factor of safety equal to 1-log for individual bag or cartridge filters and 0.5-log for bag or cartridge filters in series must be applied to challenge testing results to determine removal credit. Systems may use results from challenge testing conducted prior to January 5, 2006, if the prior testing was consistent with the criteria specified in paragraphs (2)—(9).

(2) Challenge testing must be performed on full-scale bag or cartridge filters, and the associated filter housing or pressure vessel, that are identical in material and construction to the filters and housings the system will use for removal of *Cryptosporidium*. Bag or cartridge filters must be challenge tested in the same configuration that the system will use, either as individual filters or as a series configuration of filters.

(3) Challenge testing must be conducted using *Cryptosporidium* or a surrogate that is removed no more efficiently than *Cryptosporidium*. The microorganism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate must be determined using a method capable of discretely quantifying the specific microorganism or surrogate used in the test; gross measurements such as turbidity may not be used.

(4) The maximum feed water concentration that can be used during a challenge test must be based on the detection limit of the challenge particulate in the filtrate (that is, filtrate detection limit) and must be calculated using the following equation:

$$\text{Maximum Feed Concentration} = 1 \times 10^4 \times (\text{Filtrate Detection Limit})$$

(5) Challenge testing must be conducted at the maximum design flow rate for the filter as specified by the manufacturer.

(6) Each filter evaluated must be tested for a duration sufficient to reach 100% of the terminal pressure drop, which establishes the maximum pressure drop under which the filter may be used to comply with this subchapter.

(7) Removal efficiency of a filter must be determined from the results of the challenge test and expressed in terms of log removal values using the following equation:

$$\text{LRV} = \text{LOG}_{10}(C_f) - \text{LOG}_{10}(C_p)$$

Where: LRV = log removal value demonstrated during challenge testing; C_f = the feed concentration measured during the challenge test; and C_p = the filtrate concentration measured during the challenge test. In applying this equation, the same units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, then the term C_p must be set equal to the detection limit.

(8) Each filter tested must be challenged with the challenge particulate during three periods over the filtration cycle: within 2 hours of start-up of a new filter; when the pressure drop is between 45 and 55% of the terminal pressure drop; and at the end of the cycle after the pressure drop has reached 100% of the terminal pressure drop. An LRV must be calculated for each of these challenge periods for each filter tested. The LRV for the filter ($\text{LRV}_{\text{filter}}$) must be assigned the value of the minimum LRV observed during the three challenge periods for that filter.

(9) If less than 20 filters are tested, the overall removal efficiency for the filter product line must be set equal to the lowest $\text{LRV}_{\text{filter}}$ among the filters tested. If 20 or more filters are tested, the overall removal efficiency for the filter product line must be set equal to the 10th percentile of the set of $\text{LRV}_{\text{filter}}$ values for the various filters tested. The percentile is defined by $(i/(n+1))$ where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

(10) If a previously tested filter is modified in a manner that could change the removal efficiency of the filter product line, challenge testing to demonstrate the removal efficiency of the modified filter must be conducted and submitted to the Department.

(k) *Membrane filtration.*

(1) *Cryptosporidium treatment credit.* Systems receive *Cryptosporidium* treatment credit for membrane filtration that meets the criteria of this paragraph. Membrane cartridge filters that meet the definition of membrane filtration in § 109.1 (relating to definitions) are eligible for this credit. The level of treatment credit a system receives is equal to the lower of the values determined under the following:

(i) The removal efficiency demonstrated during challenge testing conducted under the conditions in paragraph (2).

(ii) The maximum removal efficiency that can be verified through direct integrity testing used with the membrane filtration process under the conditions in paragraph (3).

(2) *Challenge testing.* The membrane used by the system shall undergo challenge testing to evaluate removal efficiency, and the system shall report the results of challenge testing to the Department. Challenge testing must be conducted according to the criteria in subparagraphs (i)—(vii). Systems may use data from challenge testing conducted prior to January 5, 2006, if the prior testing was consistent with the criteria in subparagraphs (i)—(vii).

(i) Challenge testing must be conducted on either a full-scale membrane module, identical in material and construction to the membrane modules used in the system's treatment facility, or a smaller-scale membrane module, identical in material and similar in construction to the full-scale module. A module is defined as the smallest component of a membrane unit in which a specific membrane surface area is housed in a device with a filtrate outlet structure.

(ii) Challenge testing must be conducted using *Cryptosporidium* oocysts or a surrogate that is removed no more efficiently than *Cryptosporidium* oocysts. The organism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate, in both the feed and filtrate water, must be determined using a method capable of discretely quantifying the specific challenge particulate used in the test; gross measurements such as turbidity may not be used.

(iii) The maximum feed water concentration that can be used during a challenge test is based on the detection limit of the challenge particulate in the filtrate and must be determined according to the following equation:

$$\begin{aligned} \text{Maximum Feed Concentration} = \\ 3.16 \times 10^6 \times (\text{Filtrate Detection Limit}) \end{aligned}$$

(iv) Challenge testing must be conducted under representative hydraulic conditions at the maximum design flux and maximum design process recovery specified by the manufacturer for the membrane module. Flux is defined as the throughput of a pressure driven membrane process expressed as flow per unit of membrane area. Recovery is defined as the volumetric % of feed

water that is converted to filtrate over the course of an operating cycle uninterrupted by events such as chemical cleaning or a solids removal process (that is, backwashing).

(v) Removal efficiency of a membrane module must be calculated from the challenge test results and expressed as a log removal value according to the following equation:

$$\text{LRV} = \text{LOG}_{10}(\text{C}_f) - \text{LOG}_{10}(\text{C}_p)$$

Where: LRV = log removal value demonstrated during the challenge test; C_f = the feed concentration measured during the challenge test; and C_p = the filtrate concentration measured during the challenge test. Equivalent units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term C_p is set equal to the detection limit for the purpose of calculating the LRV. An LRV must be calculated for each membrane module evaluated during the challenge test.

(vi) The removal efficiency of a membrane filtration process demonstrated during challenge testing must be expressed as a log removal value ($\text{LRV}_{\text{C-Test}}$). If less than 20 modules are tested, then $\text{LRV}_{\text{C-Test}}$ is equal to the lowest of the representative LRVs among the modules tested. If 20 or more modules are tested, then $\text{LRV}_{\text{C-Test}}$ is equal to the 10th percentile of the representative LRVs among the modules tested. The percentile is defined by $(i/(n+1))$ where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

(vii) The challenge test must establish a quality control release value (QCRV) for a nondestructive performance test that demonstrates the *Cryptosporidium* removal capability of the membrane filtration module. This performance test must be applied to each production membrane module used by the system that was not directly challenge tested in order to verify *Cryptosporidium* removal capability. Production modules that do not meet the established QCRV are not eligible for the treatment credit demonstrated during the challenge test.

(viii) If a previously tested membrane is modified in a manner that could change the removal efficiency of the membrane or the applicability of the nondestructive performance test and associated QCRV, additional challenge testing to demonstrate the removal efficiency of, and determine a new QCRV for, the modified membrane must be conducted and submitted to the Department.

(3) *Direct integrity testing.* Systems shall conduct direct integrity testing in a manner that demonstrates a removal efficiency equal to or greater than the removal credit awarded to the membrane filtration process and meets the requirements described in subparagraphs (i)—(vi). A direct integrity test is

defined as a physical test applied to a membrane unit to identify and isolate integrity breaches (that is, one or more leaks that could result in contamination of the filtrate).

(i) The direct integrity test must be independently applied to each membrane unit in service. A membrane unit is defined as a group of membrane modules that share common valving that allows the unit to be isolated from the rest of the system for the purpose of integrity testing or other maintenance.

(ii) The direct integrity method must have a resolution of 3 micrometers or less, where resolution is defined as the size of the smallest integrity breach that contributes to a response from the direct integrity test.

(iii) The direct integrity test must have a sensitivity sufficient to verify the log treatment credit awarded to the membrane filtration process by the Department, where sensitivity is defined as the maximum log removal value that can be reliably verified by a direct integrity test. Sensitivity must be determined using the approach in either clause (A) or (B) as applicable to the type of direct integrity test the system uses.

(A) For direct integrity tests that use an applied pressure or vacuum, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = \text{LOG}_{10} (Q_p / (\text{VCF} \times Q_{\text{breach}}))$$

Where: LRV_{DIT} = the sensitivity of the direct integrity test; Q_p = total design filtrate flow from the membrane unit; Q_{breach} = flow of water from an integrity breach associated with the smallest integrity test response that can be reliably measured, and VCF = volumetric concentration factor. The volumetric concentration factor is the ratio of the suspended solids concentration on the high pressure side of the membrane relative to that in the feed water.

(B) For direct integrity tests that use a particulate or molecular marker, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = \text{LOG}_{10}(C_f) - \text{LOG}_{10}(C_p)$$

Where: LRV_{DIT} = the sensitivity of the direct integrity test; C_f = the typical feed concentration of the marker used in the test; and C_p = the filtrate concentration of the marker from an integral membrane unit.

(iv) Systems shall establish a control limit within the sensitivity limits of the direct integrity test that is indicative of an integral membrane unit capable of meeting the removal credit awarded by the Department.

(v) If the result of a direct integrity test exceeds the control limit established under subparagraph (iv), the system shall remove the membrane unit from service. Systems shall conduct a direct integrity test to verify any repairs, and may return the membrane unit to service only if the direct integrity test is within the established control limit.

(vi) Systems shall conduct direct integrity testing on each membrane unit at a frequency of at least once each day that the membrane unit is in operation. The Department may approve less frequent testing, based on demonstrated process reliability, the use of multiple barriers effective for *Cryptosporidium*, or reliable process safeguards.

(4) *Indirect integrity monitoring.* Systems shall conduct continuous indirect integrity monitoring on each membrane unit according to the criteria in subparagraphs (i)—(v). Indirect integrity monitoring is defined as monitoring some aspect of filtrate water quality that is indicative of the removal of particulate matter. A system that implements continuous direct integrity testing of membrane units in accordance with the criteria in subparagraphs (i)—(v) is not subject to the requirements for continuous indirect integrity monitoring. Systems shall submit a monthly report to the Department summarizing all continuous indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken in each case.

(i) Unless the Department approves an alternative parameter, continuous indirect integrity monitoring must include continuous filtrate turbidity monitoring.

(ii) Continuous monitoring must be conducted at least once every 15 minutes.

(iii) Continuous monitoring must be separately conducted on each membrane unit.

(iv) If indirect integrity monitoring includes turbidity and if the filtrate turbidity readings are above 0.15 NTU for a period greater than 15 minutes (that is, two consecutive 15-minute readings above 0.15 NTU), direct integrity testing must immediately be performed on the associated membrane unit as specified in paragraph (3)(i)—(v).

(v) If indirect integrity monitoring includes a Department-approved alternative parameter and if the alternative parameter exceeds a Department-approved control limit for a period greater than 15 minutes, direct integrity testing shall immediately be performed on the associated membrane units as specified in paragraph (3)(i)—(v).

(l) *Second stage filtration.* Systems receive 0.5-log *Cryptosporidium* treatment credit for a separate second stage of filtration that consists of sand, dual media, GAC or other fine grain media following granular media filtration if approved by the Department. To be eligible for this credit, the first stage of filtration must be preceded by a coagulation step and both filtration stages must treat the entire plant flow taken from a surface water or GUDI source. A cap, such as GAC, on a single stage of filtration is not eligible for this credit. The Department will approve the treatment credit based on an assessment of the design characteristics of the filtration process.

(m) *Slow sand filtration (as secondary filter).* Systems are eligible to receive 2.5-log *Cryptosporidium* treatment credit for a slow sand filtration process that

follows a separate stage of filtration if both filtration stages treat entire plant flow taken from a surface water or GUDI source and no disinfectant residual is present in the influent water to the slow sand filtration process. The Department will approve the treatment credit based on an assessment of the design characteristics of the filtration process. This subsection does not apply to treatment credit awarded to slow sand filtration used as a primary filtration process.

(n) *Inactivation toolbox components.* Calculation of CT values.

(1) Systems with treatment credit for chlorine dioxide or ozone under subsection (o) or (p) must calculate CT at least once each day, with both C and T measured during peak hourly flow as specified in § 109.304(c) and 40 CFR 141.74(b)(3) (relating to analytical and monitoring requirements).

(2) Systems with several disinfection segments in sequence may calculate CT for each segment, where a disinfection segment is defined as a treatment unit process with a measurable disinfectant residual level and a liquid volume. Under this approach, systems shall add the *Cryptosporidium* CT values in each segment to determine the total CT for the treatment plant.

(o) *Chlorine dioxide.* Systems are eligible to receive the *Cryptosporidium* treatment credit listed in Table 1, CT Values (mg * min/L) for *Cryptosporidium* Inactivation by Chlorine Dioxide, contained in Appendix A to Subchapter L by meeting the corresponding chlorine dioxide CT value for the applicable water temperature, as described in subsection (n).

(p) *Ozone.* Systems receive the *Cryptosporidium* treatment credit listed in Table 2, CT Values (mg * min/L) for *Cryptosporidium* Inactivation by Ozone, contained in Appendix A to Subchapter L, by meeting the corresponding ozone CT values for the applicable water temperature, as described in subsection (n).

(q) *Ultraviolet light.* Systems receive *Cryptosporidium*, *Giardia lamblia* and virus treatment credits for ultraviolet (UV) light reactors by achieving the corresponding UV dose values shown in Table 3, UV Dose for *Cryptosporidium*, *Giardia lamblia* and Virus Inactivation, contained in Appendix A to Subchapter L, as described in paragraph (1). Systems shall validate and monitor UV reactors as described in paragraphs (2) and (3) to demonstrate that they are achieving a particular UV dose value for treatment credit.

(1) *UV dose table.* The treatment credits listed in Table 3 are for UV light at a wavelength of 254 nm as produced by a low pressure mercury vapor lamp. To receive treatment credit for other lamp types, systems shall demonstrate an equivalent germicidal dose through reactor validation testing, as described in paragraph (2). The UV dose values in this table are applicable only to post-filter applications of UV in filtered systems.

(2) *Reactor validation testing.* Systems shall use UV reactors that have undergone validation testing, conducted by a party acceptable to the Department, to determine the operating conditions under which the reactor delivers the UV dose required in paragraph (1) (that is, validated operating conditions).

These operating conditions must include flow rate, UV intensity as measured by a UV sensor and UV lamp status.

(i) When determining validated operating conditions, systems shall account for the following factors:

(A) UV absorbance of the water.

(B) Lamp fouling and aging.

(C) Measurement uncertainty of on-line sensors.

(D) UV dose distributions arising from the velocity profiles through the reactor.

(E) Failure of UV lamps or other critical system components.

(F) Inlet and outlet piping or channel configurations of the UV reactor.

(ii) Validation testing must include the following: Full scale testing of a reactor that conforms uniformly to the UV reactors used by the system and inactivation of a test microorganism whose dose response characteristics have been quantified with a low pressure mercury vapor lamp.

(iii) The Department may accept alternative validation testing approaches, if these approaches are first approved by the EPA.

(3) *Reactor monitoring.*

(i) Systems shall monitor their UV reactors to determine if the reactors are operating within validated conditions, as determined under paragraph (2). This monitoring must include UV intensity as measured by a UV sensor, flow rate, lamp status, and other parameters the Department designates based on UV reactor operation. Systems shall verify the calibration of UV sensors and shall recalibrate sensors in accordance with a protocol the Department approves.

(ii) To receive treatment credit for UV light, systems shall treat at least 95% of the water delivered to the public during each month by UV reactors operating within validated conditions for the required UV dose, as described in paragraphs (1) and (2). Systems shall demonstrate compliance with this condition by the monitoring required under subparagraph (i).

Source

The provisions of this § 109.1204 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.605 (relating to minimum treatment design standards); 25 Pa. Code § 109.1202 (relating to monitoring requirements) 25 Pa. Code § 109.1203 (relating to bin classification and treatment technique requirements); 25 Pa. Code § 109.1206 (relating to reporting and recordkeeping requirements); and Appendix B to Subchapter L.

§ 109.1205. Grandfathering Previously Collected Data.

A system may comply with the initial source water monitoring requirements of § 109.1202 (relating to monitoring requirements) by grandfathering previously collected data. The system shall meet the grandfathering requirements established by EPA under the National Primary Drinking Water Regulations in 40 CFR 141.707 (relating to grandfathering previously collected data) which are incorporated by reference.

Source

The provisions of this § 109.1205 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

§ 109.1206. Reporting and recordkeeping requirements.

(a) *Source water reporting time frame.* Systems shall report results from the source water monitoring required under § 109.1202 (relating to monitoring requirements) no later than 10 days after the end of the first month following the month when the sample is collected.

(b) *Methods for reporting initial source water monitoring results to EPA.* Systems serving at least 10,000 people shall report as follows:

(1) All systems serving at least 10,000 people shall report the results from the initial source water monitoring required under § 109.1202(a) to the EPA electronically at <https://intranet.epa.gov/lt2/>.

(2) If a system is unable to report monitoring results electronically, the system may use an alternative approach for reporting monitoring results the EPA approves.

(c) *Methods for reporting initial source water monitoring results to the Department.* Systems serving less than 10,000 people shall report results from the initial source water monitoring required under § 109.1202(a) to the Department using a method approved by the Department.

(d) *Methods for reporting second round of source water monitoring results to the Department.* All systems shall report results from the second round of source water monitoring required under § 109.1202(b) to the Department using a method approved by the Department.

(e) *Source water reporting data elements.* Systems shall report the applicable information in paragraphs (1) and (2) for the source water monitoring required under § 109.1202.

(1) *Cryptosporidium data elements.* Systems shall report data elements in subparagraphs (i)—(vii) for each *Cryptosporidium* analysis. Systems shall report, in a form acceptable to the Department, data elements in subparagraphs (viii)—(x) as applicable.

(i) PWS ID.

(ii) Source ID.

(iii) Sample collection date.

- (iv) Sample type (field or matrix spike).
 - (v) Sample volume filtered (L), to nearest 1/4 L.
 - (vi) Indicate whether 100% of filtered volume was examined.
 - (vii) Number of oocysts counted.
 - (viii) For matrix spike samples, systems shall also report the sample volume spiked and estimated number of oocysts spiked. These data are not required for field samples.
 - (ix) For samples in which less than 10 L is filtered or less than 100% of the sample volume is examined, systems shall also report the number of filters used and the packed pellet volume.
 - (x) For samples in which less than 100% of sample volume is examined, systems shall also report the volume of resuspended concentrate and volume of this resuspension processed through immunomagnetic separation.
- (2) *E. coli data elements.* Systems shall report, in a form acceptable to the Department, the following data elements for each *E. coli* analysis:
- (i) PWS ID.
 - (ii) Source ID.
 - (iii) Sample collection date.
 - (iv) Analytical method number.
 - (v) Method type.
 - (vi) Source type (flowing stream, lake/reservoir, GUDI).
 - (vii) *E. coli*/100 mL.
 - (viii) Turbidity, if monitoring is required under § 109.1202.
- (f) *Sampling schedule reporting.* Systems shall report sampling schedules under § 109.1202 (h)—(j) and source water monitoring results under subsections (a)—(e) unless they notify the Department that they will not conduct source water monitoring due to meeting the criteria of § 109.1202(d).
- (g) *Bin classification reporting.* Systems shall report their *Cryptosporidium* bin classification as follows:
- (1) Systems shall report their initial bin classification under § 109.1203(c) (relating to bin classification and treatment technique requirements) to the Department for approval no later than 6 months after the system is required to complete initial source water monitoring based on the schedule in § 109.1202(c).
 - (2) Systems shall report their bin classification under § 109.1203(c) to the Department for approval no later than 6 months after the system is required to complete the second round of source water monitoring based on the schedule in § 109.1202(c).
 - (3) The bin classification report to the Department will include a summary of source water monitoring data and the calculation procedure used to determine bin classification.
 - (4) Failure to comply with the conditions of this subsection is a violation of the treatment technique requirement.

(h) *Microbial toolbox reporting requirements.* Systems are required to report items specified in § 109.1204 (relating to requirements for microbial toolbox components) for all toolbox components for which they are requesting treatment credit. Systems must report to the State in accordance with Appendix C to Subchapter L. Microbial Toolbox Reporting Requirements in a form acceptable to the Department. Systems using treatment options other than conventional, direct, slow sand or diatomaceous earth filtration for bin 1 sources shall also report, in a form acceptable to the Department, the items specified in § 109.1204 for the treatment options used.

(i) *Reporting significant change in disinfection practices.* Prior to making a significant change in disinfection practice, systems shall report disinfection profiles and benchmarks to the Department as established by the EPA under the National Primary Drinking Water regulations in 40 CFR 141.708 and 141.709 (relating to requirements when making a significant change in disinfection practice; and developing the disinfection profile and benchmark), which are incorporated by reference in § 109.204 (relating to disinfection profiling and benchmarking).

(j) *Source water monitoring recordkeeping requirements.* Systems shall keep results from the initial round of source water monitoring under § 109.1202(a) and the second round of source water monitoring under § 109.1202(b) until 3 years after bin classification under § 109.1203 (b) and (c).

(k) *Notification retention.* Systems shall keep any notification to the Department that they will not conduct source water monitoring due to meeting the criteria of § 109.1202(d) for 3 years.

(l) *Results retention.* Systems shall keep the results of treatment monitoring associated with microbial toolbox options under § 109.1204, as applicable, for 3 years.

Source

The provisions of this § 109.1206 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.418 (relating to special notice for failure to conduct source water *Cryptosporidium* monitoring or failure to determine bin classification); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.1202 (relating to monitoring requirements); and 25 Pa. Code § 109.1204 (relating to requirements for microbial toolbox components).

Subchapter M. ADDITIONAL REQUIREMENTS FOR GROUNDWATER SOURCES

Sec.

109.1301. Scope.

109.1302. Treatment technique requirements.

109.1303. Triggered monitoring requirements for groundwater sources.

109.1304. Assessment source water monitoring.

109.1305. Compliance monitoring.

109.1306. Information describing 4-log treatment and compliance monitoring.

109.1307. System management responsibilities.

Authority

The provisions of this Subchapter M adopted under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20), unless otherwise noted.

Source

The provisions of this Subchapter M adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This subchapter cited in 25 Pa. Code § 109.5 (relating to organization of chapter); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.304 (relating to analytical requirements); 25 Pa. Code § 109.407 (relating to general public notification requirements); 25 Pa. Code § 109.409 (relating to Tier 2 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.410 (relating to Tier 3 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.507 (relating to permits for innovative technology); 25 Pa. Code § 109.602 (relating to acceptable design); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.801 (relating to certification requirement); 25 Pa. Code § 109.810 (relating to reporting and notification requirements); 25 Pa. Code § 109.1002 (relating to MCLs, MRDLs or treatment techniques); 25 Pa. Code § 109.1003 (relating to monitoring requirements); and 25 Pa. Code § 109.1008 (relating to system management responsibilities).

§ 109.1301. Scope.

Beginning December 1, 2009, this subchapter applies to all public water systems that use groundwater excluding those systems that combine all of their groundwater with either surface water or with groundwater under the direct influence of surface water prior to treatment under § 109.202(c)(1) (relating to State MCLs, MRDLs, and treatment technique requirements). For the purpose of this subchapter, “groundwater system” is defined as any public water system meeting this applicability statement including systems obtaining finished groundwater from another supplier.

Source

The provisions of this § 109.1301 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.1303 (relating to triggered monitoring requirements for groundwater sources); and 25 Pa. Code § 109.1307 (relating to system management responsibilities).

§ 109.1302. Treatment technique requirements.

(a) *Community groundwater systems.* Community groundwater systems are required to provide continuous disinfection under § 109.202(c)(3) (relating to State MCLs, MRDLs and treatment technique requirements) and in addition shall:

(1) Comply with triggered monitoring requirements under § 109.1303 (relating to triggered monitoring requirements for groundwater sources) until beginning compliance monitoring under paragraph (5).

(2) Maintain at each groundwater entry point a residual disinfectant concentration no less than 0.40 mg/L expressed as free chlorine or its equivalent as approved by the Department, or other minimum residual approved by the Department as demonstrated under § 109.1306 (relating to information describing 4-log treatment and compliance monitoring) to provide 4-log treatment of viruses.

(3) Demonstrate how at least 4-log treatment of viruses will be provided by submitting information as required under § 109.1306 (relating to information describing 4-log treatment and compliance monitoring) when directed by the Department or no later than:

- (i) October 1, 2010, for systems serving more than 500 persons.
- (ii) October 1, 2011, for systems serving 100 to 500 persons.
- (iii) October 1, 2012, for systems serving less than 100 persons.

(4) Provide at least 4-log treatment of viruses prior to the first customer when directed by the Department or no later than:

- (i) April 1, 2011, for systems serving more than 500 persons.
- (ii) April 1, 2012, for systems serving 100 to 500 persons.
- (iii) April 1, 2013, for systems serving less than 100 persons.
- (iv) A Department-approved alternative compliance schedule.

(5) Conduct compliance monitoring as described in § 109.1305 (relating to compliance monitoring) when directed by the Department following notification of approval by the Department that at least 4-log treatment of viruses has been demonstrated for a groundwater source or sources.

(6) Provide at least 4-log treatment of viruses for new sources permitted after December 1, 2009, and conduct compliance monitoring as described in § 109.1305 beginning the first day the source is put into service.

(b) *Noncommunity groundwater systems including bottled water and vended water systems, retail water facilities and bulk water hauling systems.*

(1) Noncommunity groundwater systems may demonstrate at least 4-log treatment of viruses is provided prior to the first customer by submitting information as required under § 109.1306. Systems demonstrating at least 4-log treatment of viruses under this paragraph shall:

(i) Comply with compliance monitoring requirements under § 109.1305 when directed by the Department following notification of approval by the Department that at least 4-log treatment of viruses has been demonstrated for a groundwater source or sources.

(ii) Comply with triggered monitoring requirements under § 109.1303 until beginning compliance monitoring under subparagraph (i).

(2) Noncommunity groundwater systems not demonstrating at least 4-log treatment to the Department shall:

(i) Comply with triggered monitoring requirements under § 109.1303.

(ii) Comply with the requirements of assessment source water monitoring as described in § 109.1304 (relating to assessment source water monitoring) if the Department determines a groundwater source is at risk to fecal contamination. The Department will consider any factors that identify sources at risk to fecal contamination, including one or more of the following:

(A) Sensitivity of the source aquifer to fecal contamination.

(B) Proximity to sources of fecal contamination.

(C) Microbiological sampling history.

(c) *Groundwater systems with significant deficiencies or source water E. coli contamination.*

(1) A groundwater system with a significant deficiency or an *E. coli*-positive groundwater source sample collected under § 109.505(a)(3), § 109.1303(a) or § 109.1304(a) (relating to requirements for noncommunity water systems; triggered monitoring requirements for groundwater sources; and assessment source water monitoring) shall correct all significant deficiencies and, if directed by the Department, shall implement one or more of the following corrective actions:

(i) Provide an alternative source of water.

(ii) Eliminate the source of contamination.

(iii) Submit information required under § 109.1306 and provide treatment that reliably achieves at least 4-log treatment of viruses before the first customer for the groundwater source or sources and comply with compliance monitoring requirements under § 109.1305.

(2) A groundwater system with a significant deficiency or an *E. coli*-positive groundwater source sample collected under § 109.1303(a) or § 109.1304(a) will receive one of the following forms of notification:

(i) Written notice from the Department of a significant deficiency.

(ii) Notification from a laboratory under § 109.810(b) (relating to reporting and notification requirements) that a groundwater source sample collected under § 109.1303(a) or § 109.1304(a) was found to be *E. coli*-positive.

(iii) Direction from the Department that an *E. coli* positive sample collected under § 109.1303(a) requires corrective action.

(3) Within 30 days of receiving initial notification under paragraph (2), the groundwater system shall consult with the Department regarding the appropriate corrective action unless the Department directs the groundwater system to implement a specific corrective action.

(4) Within 120 days of receiving initial notification under paragraph (2), or earlier if directed by the Department, the groundwater system shall correct all significant deficiencies if applicable and shall either:

(i) Have completed corrective action in accordance with applicable Department plan review processes or other Department guidance or direction, if any, including Department-specified interim measures.

(ii) Be in compliance with a Department-approved corrective action plan and schedule subject to the following conditions:

(A) The groundwater system shall request and obtain approval from the Department for any subsequent modifications to a Department-approved corrective action plan and schedule.

(B) If the Department specifies interim measures for protection of the public health pending Department approval of the corrective action plan and schedule or pending completion of the corrective action plan, the system shall comply with these interim measures as well as with any schedule specified by the Department.

Authority

The provisions of this § 109.1302 amended under section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4); and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

Source

The provisions of this § 109.1302 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279; amended April 27, 2018, effective April 28, 2018, 48 Pa.B. 2509. Immediately preceding text appears at serial pages (383524) to (383526).

Cross References

This section cited in 25 Pa. Code § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements); 25 Pa. Code § 109.301 (relating to general monitoring requirements); 25 Pa. Code § 109.417 (relating to special notice for significant deficiencies by noncommunity water systems); 25 Pa. Code § 109.505 (relating to requirements for non-community water systems); 25 Pa. Code § 109.611 (relating to disinfection); 25 Pa. Code § 109.705 (relating to system evaluations and assessments); 25 Pa. Code § 109.710 (relating to disinfectant residual in the distribution system); 25 Pa. Code § 109.901 (relating to requirements for a variance); 25 Pa. Code § 109.903 (relating to requirements for an exemption); 25 Pa. Code § 109.1303 (relating to triggered monitoring requirements for groundwater sources); 25 Pa. Code § 109.1304 (relating to assessment source water monitoring); 25 Pa. Code § 109.1306 (relating to information describing 4-log treatment and compliance monitoring); and 25 Pa. Code § 109.1307 (relating to system management responsibilities).

§ 109.1303. Triggered monitoring requirements for groundwater sources.

(a) Groundwater systems not required to conduct compliance monitoring under § 109.1302 (relating to treatment technique requirements), of one or more

groundwater sources shall collect a source water sample within 24 hours of notification of a total coliform-positive routine sample collected under § 109.301(3)(i) (relating to general monitoring requirements) and have it analyzed for the presence of *E. coli*. The system shall collect a sample from each groundwater source that is not provided with Department-approved 4-log treatment of viruses and is connected to the distribution system from which the total coliform-positive sample was collected.

(b) The Department may extend the 24-hour time limit under subsection (a) to a maximum of 72 hours if the system adequately demonstrates a logistical problem outside the system's control in having the source sample or samples analyzed within 30 hours of collection. A logistical problem outside the system's control may include a coliform-positive sample result received over a holiday or weekend in which the services of a Department-accredited laboratory are not available within the prescribed sample holding time.

(c) Systems that obtain written approval from the Department prior to receiving notification of a total coliform-positive routine sample collected under § 109.301(3)(i) may conduct monitoring under subsection (a) at one or more sources within the groundwater system that are representative of multiple sources used by that system. The Department will consider any factors that identify sources as representative of multiple sources including one or more of the following:

- (1) The sources draw water from the same hydrogeologic setting.
- (2) Multiple distribution systems where no interconnection exists are supplied by separate sources.

(d) A groundwater source sample required under subsection (a) shall be collected at a location prior to any treatment.

(e) A public water system obtaining finished groundwater from another public water system shall notify the supplying system or systems within 24 hours of being notified of a total coliform-positive sample collected under § 109.301(3)(i).

(f) Prior to expiration of the 24-hour deadline under subsection (a), source water monitoring requirements are not required when one of the following apply:

- (1) The Department determines and notifies the public water system that a total coliform-positive routine sample collected under § 109.301(3)(i) is caused by a distribution system deficiency.
- (2) The total coliform-positive result has been invalidated by the Department under § 109.301(3)(iii).

(g) The following apply to an invalidation of an *E. coli* sample for groundwater source sampling:

- (1) The Department may invalidate an *E. coli*-positive groundwater source sample collected under this section if:
 - (i) The system provides the Department with written notice from the laboratory that improper sample analysis occurred.

(ii) The Department determines and documents in writing that there is substantial evidence that the *E. coli*-positive groundwater source sample is not related to source water quality.

(2) If the Department invalidates an *E. coli*-positive groundwater source sample, the groundwater system shall collect a replacement source water sample under subsection (a) within 24 hours of being notified by the Department of its invalidation decision and have the replacement sample analyzed for *E. coli*. The Department may extend the 24-hour time limit on a case-by-case basis to 72 hours.

(h) For an *E. coli*-positive source water sample collected under subsection (a) that is not invalidated under subsection (g):

(1) The Department may require a groundwater system to perform a corrective action as described under § 109.1302(c) (relating to treatment technique requirements).

(2) If the Department does not require corrective action under § 109.1302(c), the system shall collect five additional source water samples from the same source within 24 hours of being notified of the *E. coli*-positive sample. If one of the additional samples collected under this paragraph is *E. coli*-positive, the groundwater system shall perform a corrective action as described under § 109.1302(c).

(3) The system shall comply with Tier 1 public notification requirements under § 109.408 (relating to Tier 1 category, timing and delivery of notice).

(i) Systems providing water to another public water system receiving notification under subsection (e) shall comply with subsection (a).

Source

The provisions of this § 109.1303 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery notice); 25 Pa. Code § 109.701 (relating to reporting and recordkeeping); 25 Pa. Code § 109.1302 (relating to treatment technique requirements); 25 Pa. Code § 109.1304 (relating to assessment source water monitoring); and 25 Pa. Code § 109.1307 (relating to system management responsibilities).

§ 109.1304. Assessment source water monitoring.

(a) To enable the Department to determine if a groundwater system is using a groundwater source with fecal contamination, the Department may require a groundwater system to conduct monitoring for *E. coli*. If directed by the Department to conduct monitoring under this section, a water supplier shall:

(1) Collect a total of 12 samples from each groundwater source.

(i) The system may obtain written approval from the Department to conduct monitoring at one or more sources within the groundwater system that are representative of multiple sources used by the system. The Depart-

ment will consider any factors that identify sources as representative of multiple sources drawing water from the same hydrogeologic setting.

(ii) For sources providing water to the public 12 months out of the year, groundwater systems shall collect one sample during each month.

(iii) For sources providing water to the public for less than 12 months out of the year, groundwater systems shall collect 12 samples evenly distributed over the operational period.

(iv) Samples collected under § 109.1303(a) (relating to triggered monitoring requirement for groundwater sources) may be used to satisfy the requirements of this subsection, if approved by the Department.

(v) If a groundwater system obtains an *E. coli*-positive groundwater source sample, the groundwater system shall perform a corrective action as described under § 109.1302(c) (relating to treatment technique requirements).

(vi) The groundwater system may discontinue assessment source water monitoring if the system demonstrates they provide at least 4-log treatment of viruses under § 109.1302(b)(1) or if directed by the Department.

(2) Collect groundwater source samples at a location prior to any treatment of the groundwater source.

(b) The following apply to an invalidation of an *E. coli* sample for groundwater source sampling:

(1) A groundwater system may obtain a Department invalidation of an *E. coli*-positive groundwater source sample collected under this section as follows:

(i) The system provides the Department with written notice from the laboratory that improper sample analysis occurred.

(ii) The Department determines and documents in writing that there is substantial evidence that the *E. coli*-positive groundwater source sample is not related to source water quality.

(2) If the Department invalidates an *E. coli*-positive groundwater source sample, the groundwater system shall collect a replacement source water sample under subsection (a) within 24 hours of being notified by the Department of its invalidation decision and have the replacement sample analyzed for *E. coli*. The Department may extend the 24-hour time limit on a case-by-case basis to 72 hours.

Source

The provisions of this § 109.1304 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice); 25 Pa. Code § 109.1302 (relating to treatment technique requirements); and 25 Pa. Code § 109.1307 (relating to system management responsibilities).

§ 109.1305. Compliance monitoring.

(a) *Chemical disinfection.* Groundwater systems demonstrating at least 4-log treatment of viruses using chemical disinfection shall monitor for and maintain the Department-approved residual disinfection concentration every day the system serves the public from the groundwater source.

(1) A groundwater system serving greater than 3,300 people shall:

(i) Continuously monitor the residual disinfectant concentration at the entry point or other location approved by the Department and record the results at least every 15 minutes each day that water from the groundwater source is served to the public.

(ii) Maintain the Department-approved minimum residual disinfectant concentration every day the public water system serves water from the groundwater source to the public.

(iii) Conduct grab sampling every 4 hours until the continuous monitoring equipment is returned to service if there is a failure in the continuous monitoring equipment. The system shall resume continuous residual disinfectant monitoring within 14 days.

(2) A groundwater system serving 3,300 or fewer people shall comply with one of the following subparagraphs:

(i) The groundwater system shall maintain the Department-approved minimum residual disinfectant concentration every day the public water system serves water from the groundwater source to the public. The groundwater system shall take a daily grab sample at the entry point or other location approved by the Department during the hour of peak flow or at any other time specified by the Department. If any daily grab sample measurement falls below the Department-approved minimum residual disinfectant concentration, the groundwater system shall take follow up samples every 4 hours until the residual disinfectant concentration is restored to the Department-approved minimum level.

(ii) Monitor the disinfectant residual concentration continuously and meet the requirements of paragraph (1).

(b) *Alternative treatment.* Groundwater systems demonstrating at least 4-log treatment of viruses using a Department-approved alternative treatment method, including a combination of treatment methods shall:

(1) Monitor the alternative treatment in accordance with all Department-approved monitoring requirements.

(2) Operate the alternative treatment in accordance with all compliance requirements that the Department determines to be necessary to achieve at least 4-log treatment of viruses.

Source

The provisions of this § 109.1305 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.1302 (relating to treatment technique requirements); 25 Pa. Code § 109.1306 (relating to information describing 4-log treatment and compliance monitoring); and 25 Pa. Code § 109.1307 (relating to system management responsibilities).

§ 109.1306. Information describing 4-log treatment and compliance monitoring.

(a) Community water systems, noncommunity water systems which hold a valid operation permit under § 109.504 (relating to public water system operation permits) and bottled water and vended water systems, retail water facilities and bulk water hauling systems which hold a valid permit under § 109.1005 (relating to permit requirements) demonstrating at least 4-log treatment of viruses under § 109.1302 (relating to treatment technique requirements) shall submit information in writing on forms provided by the Department and may include plans, specifications, engineer's report, water quality analyses and other data, information or documentation reasonably necessary to enable the Department to evaluate:

- (1) Treatment effectiveness.
- (2) The methodology the system will use to comply with § 109.1305 (relating to compliance monitoring).

(b) A noncommunity water system not covered under subsection (a) demonstrating at least 4-log treatment of viruses under § 109.1302 (relating to treatment technique requirements) shall:

- (1) File an amendment to the system description as described under § 109.505(a)(2)(ii) (relating to requirements for noncommunity water systems).
- (2) Submit an application for a noncommunity water system 4-log treatment of groundwater sources permit. The application shall be submitted in writing on forms provided by the Department.

(3) Submit plans, specifications, engineer's report, water quality analyses and other data, information or documentation reasonably necessary to enable the Department to determine compliance with the act and this chapter. The Department will make available to the applicant the *Public Water Supply Manual*, available from the Bureau of Water Standards and Facility Regulation, Post Office Box 8774, Harrisburg, Pennsylvania 17105 which contains acceptable design standards and technical guidance. Water quality analyses shall be conducted by a laboratory accredited under this chapter.

(c) Plans, specifications and engineer's reports must comply with the following:

- (1) The drawings, specifications and engineer's report shall be prepared by or under the supervision of a professional engineer registered to practice in this Commonwealth or in the state in which the public water system is located.

(2) The front cover or flyleaf of each set of drawings, of each copy of the engineer's report, and of each copy of specifications must bear the signature and imprint of the seal of the registered engineer. Drawings must bear an imprint or a legible facsimile of the seal.

Source

The provisions of this § 109.1306 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.505 (relating to requirements for non-community water systems); 25 Pa. Code § 109.1302 (relating to treatment technique requirements); and 25 Pa. Code § 109.1307 (relating to system management responsibilities).

§ 109.1307. System management responsibilities.

(a) *Reporting.* Groundwater systems shall comply with the following requirements and otherwise comply with § 109.701 (relating to reporting and record-keeping):

(1) A groundwater system conducting compliance monitoring under § 109.1305 (relating to compliance monitoring):

(i) Shall report to the Department, for each entry point or other Department-approved monitoring location:

(A) The date, time and lowest value each day the residual disinfectant concentration remains equal to or greater than the Department-required minimum value established under § 109.1306 (relating to information describing 4-log treatment and compliance monitoring).

(B) The initial date, time and value for each occurrence that the residual disinfectant concentration is less than the Department-required minimum, and the subsequent date, time and value that the residual disinfectant concentration is equal to or greater than the required minimum.

(C) Each date the entry point is not in operation.

(ii) That experiences a breakdown in treatment shall notify the Department within 1 hour after the water system learns of the violation or the situation and provide public notice in accordance with § 109.408 (relating to Tier 1 public notice—categories, timing and delivery). A breakdown in treatment occurs whenever the system fails to meet, for greater than 4 continuous hours, any Department-specified requirements relating to:

(A) Minimum residual disinfectant concentration.

(B) Alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within 4 hours.

(2) After completing any corrective action under § 109.1302(c) (relating to treatment technique requirements), a groundwater system shall notify the Department within 30 days of completion of the corrective action.

(b) *Recordkeeping.* Groundwater systems shall comply with § 109.701 and maintain the following information in its records:

(1) *Corrective actions.* Documentation shall be kept for at least 10 years.

(2) *Notice to the public as required under Subchapter D (relating to public notification).* Documentation shall be kept for at least 3 years.

(3) *Records of invalidation of E. coli-positive groundwater source samples under §§ 109.1303 (g) and 109.1304 (b).* Documentation shall be kept for at least 5 years.

(4) *Records of notification to other public water systems.* For a public water system obtaining groundwater from another public water system, documentation of notification to the supplier of total-coliform positive samples that are not invalidated under § 109.301(3)(iii) (relating to general monitoring requirements). Documentation shall be kept for at least 5 years.

(5) *Compliance monitoring.* For systems, including suppliers providing water to another public water system, that are required to perform compliance monitoring under § 109.1305 (relating to compliance monitoring):

(i) Documentation of the records of the Department-specified minimum disinfectant residual shall be kept for at least 10 years.

(ii) Documentation of the records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the Department-prescribed minimum residual disinfectant concentration for more than 4 hours, shall be kept for at least 5 years.

(iii) Documentation of the records of the Department-specified compliance requirements specified by the Department for Department-approved alternative treatment and records of the date and duration of any failure to meet alternative treatment operating requirements for more than 4 hours, shall be kept for at least 5 years.

Source

The provisions of this § 109.1307 adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Cross References

This section cited in 25 Pa. Code § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice); and 25 Pa. Code § 109.701 (relating to reporting and recordkeeping).

Appendix A to Subchapter L. Long-Term 2 Enhanced Surface Water Treatment Rule.

Table 1. CT VALUES (MG•MIN/L) FOR *Cryptosporidium* INACTIVATION BY CHLORINE DIOXIDE¹

Log Credit	Water Temperature, ° C										
	<=0.5	1	2	3	5	7	10	15	20	25	30
(i) 0.25	159	153	140	128	107	90	69	45	29	19	12
(ii) 0.5	319	305	279	256	214	180	138	89	58	38	24
(iii) 1.0	637	610	558	511	429	360	277	179	116	75	49
(iv) 1.5	956	915	838	767	643	539	415	268	174	113	73
(v) 2.0	1275	1220	1117	1023	858	719	553	357	232	150	98
(vi) 2.5	1594	1525	1396	1278	1072	899	691	447	289	188	122
(vii) 3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

¹ Systems may use the equation to determine log credit between the indicated values: Log credit = (0.001506 × (1.09116)^{Temp}) × CT.

Table 2. CT VALUES (MG•MIN/L) FOR *Cryptosporidium* INACTIVATION BY OZONE¹

Log Credit	Water Temperature, ° C										
	<=0.5	1	2	3	5	7	10	15	20	25	30
(i) 0.25	6.0	5.8	5.2	4.8	4.0	3.3	2.5	1.6	1.0	0.6	0.39
(ii) 0.5	12	12	10	9.5	7.9	6.5	4.9	3.1	2.0	1.2	0.78
(iii) 1.0	24	23	21	19	16	13	9.9	6.2	3.9	2.5	1.6
(iv) 1.5	36	35	31	29	24	20	15	9.3	5.9	3.7	2.4

Log Credit	Water Temperature, ° C										
	48	46	42	38	32	26	20	12	7.8	4.9	3.1
(v) 2.0	48	46	42	38	32	26	20	12	7.8	4.9	3.1
(vi) 2.5	60	58	52	48	40	33	25	16	9.8	6.2	3.9
(vii) 3.0	72	69	63	57	47	39	30	19	12	7.4	4.7

¹ Systems may use the equation to determine log credit between the indicated values: Log credit = $(0.0397 \times (1.09757)^{\text{Temp}}) \times \text{CT}$.

Table 3. UV DOSE TABLE FOR *Cryptosporidium*, *Giardia lamblia*, AND VIRUS INACTIVATION CREDIT

Log Credit	<i>Cryptosporidium</i> UV dose (mJ/cm ²)	<i>Giardia lamblia</i> UV dose (mJ/cm ²)	Virus UV dose (mJ/cm ²)
(i) 0.5	1.6	1.5	39
(ii) 1.0	2.5	2.1	58
(iii) 1.5	3.9	3.0	79
(iv) 2.0	5.8	5.2	100
(v) 2.5	8.5	7.7	121
(vi) 3.0	12	11	143
(vii) 3.5	15	15	163
(viii) 4.0	22	22	186

Source

The provisions of this Appendix A adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

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Appendix B to Subchapter L. Long-Term 2 Enhanced Surface Water Treatment Rule.

MICROBIAL TOOLBOX SUMMARY TABLE: OPTIONS, TREATMENT CREDITS AND CRITERIA

<i>Toolbox Option</i>	<i>Cryptosporidium treatment credit with design and implementation criteria</i>
Source Protection and Management Toolbox Options	
(1) Watershed control program . . .	0.5-log credit for State-approved program comprising required elements, annual program status report to State, and regular watershed survey. Unfiltered systems are not eligible for credit. Specific criteria are in § 109.1204(b).
(2) Alternative source/intake management	No prescribed credit. Systems may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies. Specific criteria are in § 109.1204(c).
Pre Filtration Toolbox Options	
(3) Presedimentation basin with coagulation	0.5-log credit during any month that presedimentation basins achieve a monthly mean reduction of 0.5-log or greater in turbidity or alternative State-approved performance criteria. To be eligible, basins must be operated continuously with coagulant addition and all plant flow must pass through basins. Specific criteria are in § 109.1204(d).
(4) Two-stage lime softening . . .	0.5-log credit for two-stage softening where chemical addition and hardness precipitation occur in both stages. All plant flow must pass through both stages. Single-stage softening is credited as equivalent to conventional treatment. Specific criteria are in § 109.1204(e).

<i>Toolbox Option</i>	<i>Cryptosporidium treatment credit with design and implementation criteria</i>
(5) Bank filtration	0.5-log credit for 25-foot setback; 1.0-log credit for 50-foot setback; aquifer must be unconsolidated sand containing at least 10 percent fines; average turbidity in wells must be less than 1 NTU. Systems using wells followed by filtration when conducting source water monitoring must sample the well to determine bin classification and are not eligible for additional credit. Specific criteria are in § 109.1204(f).
Treatment Performance Toolbox Options	
(6) Combined filter performance	0.5-log credit for combined filter effluent turbidity less than or equal to 0.15 NTU in at least 95 percent of measurements each month. Specific criteria are in § 109.1204(g).
(7) Individual filter performance	0.5-log credit (in addition to 0.5-log combined filter performance credit) if individual filter effluent turbidity is less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter and is never greater than 0.3 NTU in two consecutive measurements in any filter. Specific criteria are in § 109.1204(h).
(8) Demonstration of performance	Credit awarded to unit process or treatment train based on a demonstration to the State with a State-approved protocol. Specific criteria are in § 109.1204(i).
Additional Filtration Toolbox Options	
(9) Bag or cartridge filters (individual filters)	Up to 2-log credit based on the removal efficiency demonstrated during challenge testing with a 1.0-log factor of safety. Specific criteria are in § 109.1204(j).

<i>Toolbox Option</i>	<i>Cryptosporidium treatment credit with design and implementation criteria</i>
(10) Bag or cartridge filters (in series)	Up to 2.5-log credit based on the removal efficiency demonstrated during challenge testing with a 0.5-log factor of safety. Specific criteria are in § 109.1204(j).
(11) Membrane filtration	Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing. Specific criteria are in § 109.1204(k).
(12) Second stage filtration	0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation prior to first filter. Specific criteria are in § 109.1204(l).
(13) Slow sand filters	2.5-log credit as a secondary filtration step; 3.0-log credit as a primary filtration process. No prior chlorination for either option. Specific criteria are in § 109.1204(m).
Inactivation Toolbox Options	
(14) Chlorine dioxide	Log credit based on measured CT in relation to CT table. Specific criteria in § 109.1204(o).
(15) Ozone	Log credit based on measured CT in relation to CT table. Specific criteria in § 109.1204(p).
(16) UV	Log credit based on validated UV dose in relation to UV dose table; reactor validation testing required to establish UV dose and associated operating conditions. Specific criteria in § 109.1204(q).

Source

The provisions of this Appendix B adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

Appendix C to Subchapter L. Long-Term 2 Enhanced Surface Water Treatment Rule.

MICROBIAL TOOLBOX REPORTING REQUIREMENTS

<i>Toolbox option</i>	<i>Systems must submit the following information</i>	<i>On the following schedule</i>
(1) Watershed control program (WCP).	(i) Notice of intention to develop a new or continue an existing watershed control program. (ii) Watershed control plan (iii) Annual watershed control program status report (iv) Watershed sanitary survey report	No later than two years before the applicable treatment compliance date in § 109.1203 No later than one year before the applicable treatment compliance date in § 109.1203 Every 12 months, beginning one year after the applicable treatment compliance date in § 109.1203 For community water systems, every three years beginning three years after the applicable treatment compliance date in § 109.1203. For noncommunity water systems, every five years beginning five years after the applicable treatment compliance date in § 109.1203.
(2) Alternative source/intake management.	Verification that system has relocated the intake or adopted the intake withdrawal procedure reflected in monitoring results.	No later than the applicable treatment compliance date in § 109.1203.

<i>Toolbox option</i>	<i>Systems must submit the following information</i>	<i>On the following schedule</i>
(3) Presedimentation . . .	Monthly verification of the following: (i) Continuous basin operation (ii) Treatment of 100% of the flow (iii) Continuous addition of a coagulant (iv) At least 0.5-log mean reduction of influent turbidity or compliance with alternative State-approved performance criteria.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.
(4) Two-stage lime softening	Monthly verification of the following: (i) Chemical addition and hardness precipitation occurred in two separate and sequential softening stages prior to filtration (ii) Both stages treated 100% of the plant flow.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.
(5) Bank filtration	(i) Initial demonstration of the following: (A) Unconsolidated, predominantly sandy aquifer (B) Setback distance of at least 25 ft. (0.5-log credit) or 50 ft. (1.0-log credit). (ii) If monthly average of daily max turbidity is greater than 1 NTU then system must report result and submit an assessment of the cause.	No later than the applicable treatment compliance date in § 109.1203. Report within 30 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.

<i>Toolbox option</i>	<i>Systems must submit the following information</i>	<i>On the following schedule</i>
(6) Combined filter performance.	Monthly verification of combined filter effluent (CFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of the 4 hour CFE measurements taken each month.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.
(7) Individual filter performance.	Monthly verification of the following: (i) Individual filter effluent (IFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter (ii) No individual filter greater than 0.3 NTU in two consecutive readings 15 minutes apart.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.
(8) Demonstration of performance.	(i) Results from testing following a State approved protocol. (ii) As required by the State, monthly verification of operation within conditions of State approval for demonstration of performance credit.	No later than the applicable treatment compliance date in § 109.1203. Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.

<i>Toolbox option</i>	<i>Systems must submit the following information</i>	<i>On the following schedule</i>
(9) Bag filters and cartridge filters.	<p>(i) Demonstration that the following criteria are met: (A) Process meets the definition of bag or cartridge filtration; (B) Removal efficiency established through challenge testing that meets criteria in this subpart.</p> <p>(ii) Monthly verification that 100% of plant flow was filtered.</p>	<p>No later than the applicable treatment compliance date in § 109.1203.</p> <p>Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.</p>
(10) Membrane filtration	(i) Results of verification testing demonstrating the following: (A) Removal efficiency established through challenge testing that meets criteria in this subpart; (B) Integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline.	No later than the applicable treatment compliance date in § 109.1203.

<i>Toolbox option</i>	<i>Systems must submit the following information</i>	<i>On the following schedule</i>
	(ii) Monthly report summarizing the following: (A) All direct integrity tests above the control limit; (B) If applicable, any turbidity or alternative state-approved indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.
(11) Second stage filtration	Monthly verification that 100% of flow was filtered through both stages and that first stage was preceded by coagulation step.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.
(12) Slow sand filtration (as secondary filter).	Monthly verification that both a slow sand filter and a preceding separate stage of filtration treated 100% of flow from subpart H sources.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.
(13) Chlorine dioxide ..	Summary of CT values for each day as described in § 141.720.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.

<i>Toolbox option</i>	<i>Systems must submit the following information</i>	<i>On the following schedule</i>
(14) Ozone	Summary of CT values for each day as described in § 141.720.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.
(15) UV	(i) Validation test results demonstrating operating conditions that achieve required UV dose. (ii) Monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose as specified in § 141.720(d).	No later than the applicable treatment compliance date in § 109.1203. Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 109.1203.

Source

The provisions of this Appendix C adopted December 24, 2009, effective December 26, 2009, 39 Pa.B. 7279.

[Next page is 110-1.]