RULES AND REGULATIONS

Title 25—ENVIRONMENTAL PROTECTION

ENVIRONMENTAL QUALITY BOARD

[25 PA. CODE CH. 109]

Safe Drinking Water; General Update and Fees

The Environmental Quality Board (Board) amends Chapter 109 (relating to safe drinking water) to read as set forth in Annex A. This final-form rulemaking has three parts:

• Incorporate the remaining general update provisions that were separated from the proposed Revised Total Coliform Rule (RTCR) as directed by the Board on April 21, 2015, including revisions to treatment technique requirements for pathogens, clarifications to permitting requirements, and new requirements for alarms, shutdown capabilities and system service.

• Amend existing permit fees and add new annual fees to supplement Commonwealth costs and fill the funding gap ($7.5 million).

• Establish the regulatory basis for issuing general permits, clarify that noncommunity water systems (NCWS) require a permit or approval from the Department of Environmental Protection (Department) prior to construction and operation, and address concerns regarding gaps in the monitoring, reporting and tracking of back-up sources of supply.

Collectively, this final-form rulemaking will provide for the increased protection of public health by every public water system (PWS) in this Commonwealth, and ensure that the Department has adequate funding to enforce the applicable drinking water laws, meet State and Federal minimum program elements, and retain primacy (primary enforcement authority).

Safe drinking water is vital to maintaining healthy and sustainable communities. Proactively avoiding incidents such as waterborne disease outbreaks can prevent loss of life, reduce the incidents of illness and reduce health care costs. Proper investment in PWS infrastructure and operations helps ensure a continuous supply of safe drinking water, enables communities to plan and build future capacity for economic growth, and ensures their long-term sustainability.

One or more of these amendments will apply to all 8,521 PWSs in this Commonwealth.

This final-form rulemaking was adopted by the Board at its meeting of April 17, 2018.

A. *Effective Date*

This final-form rulemaking is effective upon publication in the *Pennsylvania Bulletin*. Based on advisory committee and public comments, this final-form rulemaking includes the following deferred implementation dates:

• The amended turbidity treatment technique requirements for membrane filtration are required 1 year after the effective date of this final-form rulemaking to allow additional time to achieve compliance.

• The amended turbidity monitoring requirements are required 1 year after the effective date of this final-form rulemaking.

• The amended monitoring requirements for reserve sources and entry points are required 1 year after the effective date of this final-form rulemaking.

• The new comprehensive monitoring plan requirements are required 1 year after the effective date of this final-form rulemaking.

• The new alarm and shutdown capability requirements are required 1 year after the effective date of this final-form rulemaking unless an alternate compliance schedule is approved in writing by the Department.

• The new system service requirements are required from 1 to 3 years after the effective date of this final-form rulemaking, based on system population.

• The new annual fees are required beginning January 1, 2019, to allow additional time for PWSs, boards and authorities to include the new fees in their 2019 budgets. Budgets for 2018 are already completed.

B. *Contact Persons*

For further information, contact Lisa D. Daniels, Director, Bureau of Safe Drinking Water, P.O. Box 8467, Rachel Carson State Office Building, Harrisburg, PA 17105-8467, (717) 787-9633; or William Cumings, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the Pennsylvania AT&T Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users).

C. *Statutory Authority*

This final-form rulemaking is being made under the authority of section 4(a) of the Pennsylvania Safe Drinking Water Act (SDWA) (35 P.S. § 721.4(a)), which authorizes the Board ". . .to adopt such rules and regulations of the department, governing the provision of drinking water to the public, as it deems necessary for the implementation of the provisions of [the SDWA]." With respect to the fees in §§ 109.1401—109.1409, section 4(c) of the SDWA authorizes and directs the Board to "establish fees for permit applications, laboratory certification and other services." This final-form rulemaking is also being made under the authority of section 1920-A(b) of The Administrative Code of 1929 (71 P.S. § 510-20(b)), which authorizes the Board to promulgate rules and regulations necessary for the performance of the work of the Department.

D. *Background and Purpose*

The General Assembly found in section 2 of the SDWA (35 P.S. § 721.2) that it is "in the public interest for the Commonwealth to assume primary enforcement responsibility under the Federal Safe Drinking Water Act." When the SDWA was passed, the purpose was to create a drinking water program to allow the Commonwealth to obtain legal primacy over the Federal program in this Commonwealth.

The Department is the agency that was delegated authority to implement the Safe Drinking Water Program (Program), including the Program elements necessary for the Commonwealth to assume and maintain primary (in other words, lead) administration and enforcement authority under the Federal Safe Drinking Water Act (42 U.S.C.A. §§ 300f—300j-27). See section 5(a) of the SDWA (35 P.S. § 721.5(a)). The Department, through the Bureau of Safe Drinking Water, provides services to over 8,500

PWSs serving 11.3 million citizens to ensure compliance with the SDWA and the Federal Safe Drinking Water Act. The Board adopted this final-form rulemaking to ensure the continued implementation of critical Program activities under applicable Federal and State law requirements.

Part I. General update provisions

This final-form rulemaking incorporates the remaining general update provisions that the Board previously determined should be proposed in a separate rulemaking. These general updates:

• Clarify the source water assessment, source water protection area and source water protection program elements and requirements.

• Amend the treatment technique requirements for pathogenic bacteria, viruses and protozoan cysts by adding specific turbidity performance requirements for membrane filtration.

• Amend the disinfection profiling and benchmarking requirements to clarify that all PWSs using filtered surface water or groundwater under the direct influence of surface water (GUDI) shall consult with the Department prior to making significant changes to disinfection practices to ensure adequate Giardia inactivation is maintained.

• Amend and clarify the monitoring, calibration, recording and reporting requirements for the measurement of turbidity.

• Amend the permit requirements to clarify the components that must be included in a permit application for a new source, including a source water assessment, a pre-drilling plan, an evaluation of water quantity and quality, and a hydrogeologic report.

• Amend the design and construction standards to require PWSs using surface water or GUDI sources to be equipped with alarm and shutdown capabilities. These provisions are required for a plant that is not staffed continuously while the plant is in operation.

• Clarify that treatment technologies shall be certified for efficacy through an approved third party.

• Update the system management requirements for community water systems (CWS) to strengthen system service and resiliency by requiring completion of an uninterrupted system service plan (USSP) which focuses on utilizing auxiliary power or a combination of alternate provisions such as finished water storage and interconnections.

• Clarify system management responsibilities relating to source water assessments and sanitary surveys.

• Amend the corrective action time frames in response to a significant deficiency for PWSs using groundwater and surface water sources to be consistent.

• Delete the provision that allows a PWS to avoid the requirement for a corrective action by collecting five additional source water samples after an *E. coli*-positive triggered source water sample.

Amendments to source water assessment and protection programs

The source water assessment and protection amendments will not only protect public health, but should also help to maintain, reduce or avoid drinking water treatment costs. Source water protection represents the first barrier to drinking water contamination. A vulnerable drinking water source puts a water utility and the community it serves at risk and at a disadvantage in planning and building future capacity for economic growth. Contamination of a CWS source is costly for the water supplier and the public. For example, it is estimated that the total cost of the May 2000 Walkerton, Ontario, *E. coli* contamination incident was $64.5 million. Livernois, J. (2001), "The Economic Costs of the Walkerton Water Crisis." In addition to increased monitoring and treatment costs for the water system, a contaminated source may result in costs associated with containment or remediation, legal proceedings, adverse public health and environmental effects, reduced consumer confidence, diminished property values and costs to replace the contaminated source.

A case study in Texas showed that water suppliers in source water areas with chemical contaminants paid $25 more per million gallons to treat drinking water than suppliers in areas without chemical contaminant detections. Dearmont, D., McCarl, B.A. and Tolman, D.A. (1998), "Costs of Water Treatment Due to Diminished Water Quality: A Case Study in Texas," *Water Resources Research*, 34(4), 849—853. A study by The Trust for Public Land showed that for every 4% increase in source water turbidity (an indicator of water quality degradation from sediment, algae and microbial pathogens), treatment costs increase by 1%. The Trust for Public Land (2002), "The Cost of Not Protecting Source Waters." A study by the Legislative Budget and Finance Committee stated that "reducing pollution inputs from pipes and land-based sources can reduce locality costs to treat drinking water sources to safe standards." Legislative Budget and Finance Committee (2013), "A Cost Effective Alternative Approach to Meeting Pennsylvania's Chesapeake Bay Nutrient Reduction Targets." According to the Legislative Budget and Finance Committee study, a study by the Brookings Institute suggested that a 1% decrease in sediment loading will lead to a 0.05% reduction in water treatment costs. Source water assessments can support and enhance emergency response, improve land use planning and municipal decisions, complement sustainable infrastructure initiatives, and help prioritize and coordinate actions by Federal and Commonwealth agencies to better protect public health and safety.

Amendments to surface water treatment requirements

The United States Environmental Protection Agency (EPA) describes turbidity as "a measure of the cloudiness of water. It is used to indicate water quality and filtration effectiveness (such as whether disease-causing organisms are present). Higher turbidity levels are often associated with higher levels of disease-causing microorganisms such as viruses, parasites and some bacteria. These organisms can cause symptoms such as nausea, cramps, diarrhea, and associated headaches." National Primary Drinking Water Regulations, EPA 816-F-09-004 (May 2009). This final-form rulemaking will ensure that PWSs consistently produce water that meets turbidity standards to help ensure the delivery of safe and potable water to all users.

The proposed rulemaking was intended to reduce the public health risks related to waterborne pathogens and waterborne disease outbreaks. Costs related to waterborne disease outbreaks are extremely high. For example, the total medical costs and productivity losses associated with the 1993 waterborne outbreak of cryptosporidiosis in Milwaukee, WI, was $96.2 million—$31.7 million in medical costs and $64.6 million in productivity losses. The average total cost per person with mild, moderate and severe illness was $116, $475 and $7,808. Corso, P.S., et al. (2003), "Cost of Illness in the 1993 Waterborne

Cryptosporidium Outbreak, Milwaukee, Wisconsin," *Emerging Infectious Diseases*, 9(4), 426—431.

When problems such as rapid changes in source water quality, treatment upsets requiring a filter backwash or other unforeseen circumstances occur at filter plants, an immediate response from water plant operators is needed. This final-form rulemaking is intended to ensure that operators are promptly alerted to major treatment problems or, if an operator is unable to respond, that the plant will automatically shut down when producing inadequately treated water. Therefore, this final-form rulemaking will prevent situations that pose an imminent threat to consumers, reduce PWS costs related to corrective actions and issuing public notice, reduce costs to the community and maintain consumer confidence.

While the Department favors establishing more stringent individual filter effluent (IFE) and combined filter effluent (CFE) turbidity compliance and trigger levels of 0.30 Nephelometric Turbidity Units (NTU) and 1.0 NTU for surface water filtration plants, in response to numerous comments from the Small Water Systems Technical Assistance Center Advisory Board (TAC) and public commentators, the Department is deferring these amendments until the EPA completes its 6-year review of the Federal turbidity requirements established under the Surface Water Treatment Rules. This will allow the Department to consider the EPA's proposed changes before moving forward with proposed amendments to applicable State regulatory requirements. Until that time, the Department encourages filter plant operators to voluntarily meet optimal water quality levels and respond to trends of increasing turbidity as quickly as possible. This can be accomplished through the use of the Department's existing programs, including the Area-Wide Optimization and Filter Plant Performance Evaluation (FPPE) and Partnership for Safe Water programs. Through these programs, the Program has always dedicated significant resources toward compliance assistance/violation prevention at surface water filtration plants.

Revisions to system service and auxiliary power requirements

The amendments to system service and auxiliary power requirements will strengthen system resiliency and ensure that safe and potable water is continuously supplied to consumers and businesses. A continuous and adequate supply of safe drinking water is vital to maintaining healthy and sustainable communities.

PWS sources and treatment facilities in this Commonwealth are susceptible to emergency situations resulting from natural and manmade disasters. Examples of emergencies from recent years include tropical storms, flooding, high winds, ice, snow, industrial chemical plant runoff, pipeline ruptures and transportation corridor spills. These emergencies have resulted in significant impacts to consumers and businesses due to inadequate water quantity or quality, and required water supply warnings and advisories. For example, in 2011, Hurricane Irene and Tropical Storm Lee caused flooding, water line ruptures and power outages resulting in mandatory water restrictions and boil water advisories (BWA) at 32 PWSs in this Commonwealth. In 2012, Hurricane Sandy caused similar problems at 85 CWSs. Most of the impacted systems were small systems where redundancy and back-up systems were lacking. By comparison, systems with redundancy and adequate planning maintained operations until the power was restored with little negative impact to their customers. Countless incidents at individual CWSs have occurred due to localized emergencies with interruptions in potable drinking water service that could have been prevented if adequate preparation and equipment were available.

In addition, numerous wastewater treatment plants were forced to send untreated sewage to waterways in this Commonwealth during these major weather events. PWSs that use these waterways as a source of supply for drinking water were at an increased risk due to extremely elevated turbidity levels and pathogen loading. Effectively treating drinking water during and after emergencies requires increased vigilance and operational control.

Water outages caused by power failures or other emergencies can cause additional adverse effects including:

- Lack of water for basic sanitary purposes, such as handwashing and flushing toilets.

- Increased risk to public health when water systems experience a sharp reduction in supply, which can result in low or no pressure situations within the distribution system. Low pressure can allow intrusion of contaminants into distribution system piping from leaks and backflow from cross connections.

- Dewatering of the distribution system can result in physical damage to pipes when the system is repressurized. This situation is exacerbated due to the Nationwide problem with aging infrastructure.

This final-form rulemaking improves the reliability of service provided to all consumers by requiring the development of a feasible plan to consistently supply an adequate quantity of safe and potable water during emergency situations. More specifically, water suppliers will need to provide onsite auxiliary power sources (specifically, generators) or connection to at least two independent power feeds from separate substations, or develop a plan for alternate provisions, such as interconnections with neighboring water systems or finished water storage capacity. Ideally, water systems will implement a combination of options to improve their redundancy and resiliency.

After significant consideration of comments regarding the proposed rulemaking, the Department has made several revisions in this final-form rulemaking. The Department expanded the alternate provision options even further to include "a combination of alternate provisions," "access to portable generators" and a category of "other" alternate provisions. Within the "other" alternate provisions category, system specific alternate provisions may be proposed to insure uninterrupted system service. Additionally, due to the variety of system specific challenges, the Department included the option to submit a schedule for necessary improvements which have not been completed by the compliance deadlines specified in § 109.708(a) (relating to system service and auxiliary power) for submittal of the USSP. This new approach requires certification of completion of the USSP form created by the Department by the deadlines specified in § 109.708(a). However, if the USSP identifies that deficiencies exist which prevent a continuous supply of safe and potable water as specified in § 109.708(a), and the CWS has not fully addressed those deficiencies by the deadline for USSP submittal, a schedule will need to be submitted within 6 months which includes detailed corrective actions and corresponding completion dates. These significant revisions will help enable the cost for compliance with these provisions to be spread out over a longer

period of time. Additionally, these revisions will provide water suppliers with more flexibility in choosing the approach that best suits their particular water systems and adequate time to implement that plan in the most effective manner.

Part II. New annual fees and amended permit fees

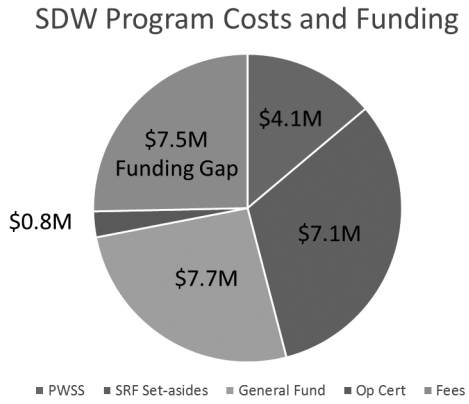
Funding necessary to provide services

The Department is required to adopt and implement a public water supply program under section 5(a) of the SDWA that includes maximum contaminant levels (MCL) or treatment technique requirements establishing drinking water quality standards, monitoring, reporting, recordkeeping and analytical requirements, requirements for public notification, standards for construction, operation and modification to PWSs, emergency procedures, standards for laboratory certification, and compliance and enforcement procedures. These functions and services are required to have an approvable program and maintain primacy from the EPA. Services provided by the Department to maintain compliance with section 5(b) of the SDWA, as well as regulations in Chapter 109 and permits issued, include: monitoring and inspections; maintaining an inventory of PWSs in this Commonwealth; conducting systematic sanitary surveys of PWSs; assuring the availability of laboratories certified to analyze drinking water for all contaminants specified in the drinking water standards; reviewing and approving plans and specifications for the design and construction of new or substantially modified PWSs to deliver water that complies with drinking water standards with sufficient volume and pressure to users of the systems; and issuing orders and taking other actions necessary and appropriate for enforcement of drinking water standards.

The fees in this final-form rulemaking are necessary to ensure adequate funding for the Department to carry out its responsibilities under the SDWA and the Federal Safe Drinking Water Act. This Commonwealth is ranked third in the United States in terms of the number of PWSs, with 8,521 PWSs across this Commonwealth. The Department is responsible for regulating all PWSs in this Commonwealth and ensuring that safe and potable drinking water is continuously supplied to the 11.3 million customers the PWSs serve.

The Department's appropriations from the General Fund for the Program have steadily decreased in recent years while the cost of staff salaries and benefits, as well as other operation costs, have increased. The result has been an overall 25% decrease in staffing for the Program since 2009. As discussed in more detail in the preamble of the proposed rulemaking published at 47 Pa.B. 4986 (August 26, 2017)), these staff reductions have led to a steady decline in the Department's performance of services necessary to ensure compliance with SDWA requirements.

The current funding available to administer the Program from State and Federal sources is $19.7 million, as shown in the following chart. The fees are expected to generate approximately $7.5 million, which will allow the Program to restore staffing levels and reverse the decline in services that has occurred since 2009. The fees will provide nearly 50% of the Commonwealth's share of funding for the Program. The remaining portion of the Commonwealth's share ($7.7 million) is expected to be provided through annual General Fund appropriations. If appropriations from the General Fund do not keep pace with Program costs, a funding gap could remain even with this final-form rulemaking.



Federal sources currently provide approximately $11.2 million to fund the Program, including:

- Public Water System Supervision grant ($4.1 million)—used for personnel costs, lab costs and staff training
- State Revolving Fund Set-asides grant ($7.1 million)—used for personnel costs, capability enhancement programs (training, technical assistance and optimization programs), source water assessment and protection, the Pennsylvania Drinking Water Information System (PADWIS) and assistance grants/contracts

The Commonwealth currently provides approximately $8.5 million to fund the Program through the following sources:

- General Fund appropriations (~$7.7 million)—used for personnel costs
- Operator Certification fees ($0.8 million)—used for Operator Certification Program implementation costs

With the addition of the $7.5 million expected to be generated from this final-form rulemaking, the funds available for the Program should total $27.2 million.

The minimum critical services that the Program must provide to administer the SDWA and its regulations include:

- Conducting surveillance activities, such as sanitary surveys and other inspections.
- Collecting and analyzing drinking water samples.
- Determining compliance with the regulations, a permit or an order.
- Taking appropriate enforcement actions to compel compliance.
- Reviewing applications, plans, reports, feasibility studies and special studies.
- Issuing permits.
- Conducting evaluations, such as FPPEs and other site surveys.
- Tracking, updating and maintaining water supply inventory, sample file and enforcement data in various data management systems.
- Meeting and assuring compliance with all Commonwealth and Federal recordkeeping and reporting requirements.
- Conducting training.
- Providing technical assistance.
- Responding to water supply emergencies.

Failure to provide these fundamental services may result in an increased risk to public health, as well as the loss of approval from the EPA for the Department to serve as the primary enforcement agency for the administration of the Program in this Commonwealth under Federal law.

The Board has the authority and is directed under section 4(c) of the SDWA to establish fees for services that bear a reasonable relationship to the actual cost of providing the services. The Board must also consider the impacts of the proposed fees on small businesses as part of the regulatory analysis required under section 5 of the Regulatory Review Act (71 P.S. § 745.5). Sixty-eight percent of the PWSs in this Commonwealth are considered small businesses.

The fees in this final-form rulemaking will provide the Department with funding necessary to properly administer the SDWA while bearing a reasonable relationship to the actual cost of services provided and in a manner that minimizes the adverse impact on water systems with fewer customers to bear the cost.

The fees will allow the Department to restore sanitarian (field inspector) positions and lower the workload of PWSs/sanitarian to an acceptable level (~100—125 per a workload analysis) as follows:

	Number of PWSs			*Number of Sanitarians*			*Sanitarian Workload (Number of PWSs/Sanitarians)*		
Region	*2009*	*2015*	*2017*	*2009*	*2015*	*With New Fees*	*2009*	*2015*	*With New Fees*
1 SERO	1,062	911	895	9	6	8	118	152	112
2 NERO	2,973	2,559	2,481	23	19	23	129	135	108
3 SCRO	2,596	2,408	2,353	21	13	21	124	185	112
4 NCRO	1,115	941	894	10	6	8	112	157	112
5 SWRO	879	694	667	10	6	7	88	105	95
6 NWRO	1,302	1,205	1,281	11	7	12	118	158	107
Totals	9,927	8,718	8,521	84	57	79	118 Average	153 Average	108 Average

New annual fee and permit fee increases

The amended fees apply to all 8,521 PWSs, which include 1,952 CWSs, 6,397 NCWSs and 172 bottled and vended water systems, retail water facilities and bulk water hauling systems (BVRB). The new annual fees range from $250 to $40,000 for CWSs, $50 to $1,000 for NCWSs and $1,000 to $2,500 for BVRBs. If passed on to their customers, these annual fees would result in an increase in cost ranging from $0.35 to $10 per year, depending on the water system size. Further explanation of the annual fees is provided in Section E under the discussion of § 109.1402 (relating to annual fees). The increased permit fees range from $100 to $10,000 depending on the population served and whether the permit is for major or minor construction. The former permit fees ranged from $125 to $1,750. This final-form rulemaking provides for a review of the fee structure every 3 years to ensure that the fees continue to adequately supplement the cost of maintaining the Program.

As provided in section 14 of the SDWA (35 P.S. § 721.14), all fees will be paid into the State Treasury into a special restricted revenue account in the General Fund known as the Safe Drinking Water Account administered by the Department. The funds may only be used for purposes as authorized under the SDWA.

Comparison to other states annual fees

As described in preamble of the proposed rulemaking, at least 26 states charge annual fees to augment the cost of their drinking water programs. Some states charge a flat fee based on the PWS type and size. Other states charge a fee based on population served or the number of service connections. Annual fees for these 26 states range from $25 to $160,000 and were summarized in the preamble of the proposed rulemaking.

Part III. Amendments

The remaining component of this final-form rulemaking consists of amendments to other sections of Chapter 109 to:

• Establish in § 109.511 (relating to general permits) the regulatory basis for the issuance of general permits for high volume, low risk modifications or activities to streamline the permitting process.

• Clarify in § 109.505(a)(2)(ii) (relating to requirements for noncommunity water systems) that NCWSs that are not required to obtain a permit shall still obtain Department approval of the facilities prior to construction and operation.

• Address in § 109.301(15) (relating to general monitoring requirements) and final-form § 109.718 (relating to comprehensive monitoring plan) (proposed § 109.717) concerns related to gaps in the monitoring, reporting and tracking of back-up water sources, and entry points. Per State regulations in § 109.301 and § 109.303 (relating to sampling requirements) and Federal regulations in 40 CFR 141.23(a), 141.24(f) and (h) and 141.26(a) (relating to inorganic chemical sampling and analytical requirements; organic chemicals, sampling and analytical requirements; and monitoring frequency and compliance requirements for radionuclides in community water systems), all sources and entry points shall be included in routine compliance monitoring to ensure water quality meets safe drinking water standards. Sources and entry points that do not provide water continuously are required to be monitored when used. However, monitoring requirements for back-up sources are not currently tracked, which means verifiable controls are not in place to ensure that all sources and entry points meet safe drinking water standards. Some of these sources have not been used in at least 5 years and, therefore, the Department does not

know the water quality for these sources. In addition, the treatment facilities and other appurtenances associated with these sources may have gone unused as well, and may no longer be in good working order. This final-form rulemaking will ensure that all sources and entry points are monitored at least annually, or when in use. PWSs will also be required to document in a comprehensive monitoring plan how routine compliance monitoring will include all sources and entry points.

Advisory committee review

This final-form rulemaking was presented to TAC on December 7, 2017. Final written comments were received on December 22, 2017. The TAC Board made ten recommendations:

• Five of the recommendations were incorporated into this final-form rulemaking.

• The TAC recommended that electronic submission of Consumer Confidence Reports to the Department be allowed as an environmentally prudent option. The Department continues to investigate options for water suppliers to submit reports electronically, and intends to move forward with promulgating a regulation to implement this recommendation as soon as a system is available to accept electronic submissions.

• The TAC made three recommendations regarding NSF International (NSF) certification requirements under § 109.606 (relating to chemicals, materials and equipment). These recommendations were not incorporated because NSF certification is an existing requirement. NSF certification has been a long-standing requirement to ensure the safety and efficacy of materials and equipment. NSF certification ensures that harmful metals such as cadmium, chromium and lead do not leech from materials and equipment. NSF certification also ensures that water treatment devices can meet manufacturers' claims and effectively treat the water. However, the Department clarifies in this final-form rulemaking that NSF certification requirements apply to materials and equipment that come in contact with the water. In other words, these requirements apply to the wetted parts of materials and equipment, and exclude motors, casings, and the like which do not come into contact with the water. Finally, § 109.606 allows the use of other standards to meet these criteria. For example, the use of materials, such as concrete and stainless steel, which meet American Water Works Association standards would be acceptable to the Department.

• The TAC made recommendations regarding the elimination of the fees and whether the fees bear a reasonable relationship to the cost of services. These recommendations are addressed in Section E, particularly in the discussion regarding § 109.1402.

• Section E includes more information about the TAC Board's recommendations.

Summary of major comments and responses

The Independent Regulatory Review Commission (IRRC) submitted several comments. A summary of the IRRC's major comments and the Board's responses to those comments follow. For more information about the comments received and the Department's responses, refer to the comment and response document for this final-form rulemaking.

Comment: The current state of the Program, which is the cumulative result of numerous decisions made over many years, is cause for serious concern regarding protection of the public health, safety and welfare. The SDWA envisions and directs the Board to establish fees to cover services. IRRC questioned the Department's decision to cut services rather than gradually increase fees as appropriations from the General Fund decreased in recent years. IRRC asked the Board to explain why the statutory directive to establish fees to cover services was not used to sustain the Program. IRRC asked the Board to explain how the Program's budget will be monitored in the future to ensure that revenues are in place to meet SDWA requirements before a budget shortfall exposes the public to the risk of unsafe drinking water.

Response: The Department attempted to increase permit fees and establish new annual fees in 2010 when Program resources and performance first began to decline. A draft proposed rulemaking (Safe Drinking Water Program Fees) was presented to TAC on March 9, 2010, with further discussion on June 18, 2010. The proposed rulemaking was presented to the Board at its November 16, 2010, meeting, where it was approved to move forward as a proposed rulemaking. However, due to circumstances beyond the control of the Department at that time, the draft proposed rulemaking was prohibited from moving forward beyond that point in the regulatory process.

Regarding the Department's protocols that will ensure the proper monitoring of the Program's performance and budget in the future, the 3-year review of fees specified under § 109.1413 (relating to evaluation of fees) will ensure ongoing monitoring and tracking. There are several additional levels of accountability within the Program. At the Federal level, the Department is accountable to the EPA to ensure that the Program meets all primacy and grant conditions and is at least as stringent as the Federal program. The Department provides several updates to the EPA throughout the year including quarterly enforcement updates, semiannual updates on grant commitments and Program performance, and annual and triennial reports on Program implementation. The Department's performance is also tracked by the Governor's Office and the General Assembly through the annual budget process and through the reporting and tracking of annual performance measures. The Department is accountable to the citizens of this Commonwealth through advisory committees, public meetings and publicly-accessible web applications. Currently, the Department provides on the Drinking Water Reporting System web site all compliance monitoring results, violations and enforcement actions, and inspection results for all 8,500 PWSs. See http://www.drinkingwater.state.pa.us/dwrs/HTM/Welcome.html. The fees in this final-form rulemaking will provide the Department with funding necessary to properly administer the SDWA while bearing a reasonable relationship to the actual cost of services provided by the Department and while achieving a reasonable cost to the customers served.

Comment: Public comments opposing the proposed fees, and even those supporting them, challenged the Board's methodology for assessing the fees. The commentators questioned whether fees based on parameters including population served, PWS identification number and system construction bear a reasonable relationship to the actual cost of the services provided by the Department. IRRC recommended that the Board re-evaluate the basis of the fees in the final-form rulemaking, including consideration of the recommendation from the TAC. IRRC asked the Board to explain in the preamble of the final-form rulemaking how the chosen method of assessment of fees bears a reasonable relationship to the actual cost of providing each service, and to explain why the TAC recommendation is not in the public interest if it is not adopted.

Response: The Department retained the assessment of fees by population served. Nearly all aspects of the State and Federal drinking water programs are governed by system size (population). System population is used to determine monitoring requirements (the number of samples and the frequency of monitoring), implementation due dates (many rules phase-in effective dates by system size) and treatment techniques (some treatment techniques only apply to certain system sizes), among other things. System population is used as a surrogate for system complexity—medium and large systems are generally more complex than small systems, with more overall facilities (namely, sources, entry points, interconnections and storage tanks, among others) and types of treatment technologies. Medium and large systems often face additional challenges with maintaining simultaneous compliance, which factor heavily into Department services. For these reasons, it is appropriate to use system population to determine the various fee categories and Department costs. Refer to the discussion regarding § 109.1402 in Section E for more information about the appropriateness of the fees.

Comment: The Board notes that several areas of the proposed rulemaking were more stringent than Federal requirements, and commentators took issue with the increased regulation relative to lack of staff and increased fees. IRRC asked the Board to explain the reasonableness of expanding regulatory requirements which would result in increased demands on the Department's staff and funding during a time when both staff and funding are decreasing.

Response: The Department revised several provisions in response to TAC and public comments. Several provisions that were more stringent were either revised or deleted, including the turbidity requirements under §§ 109.202 and 109.701 (relating to State MCLs, MRDLs and treatment technique requirements; and reporting and recordkeeping), the monitoring and reporting requirements for "back-up" sources and entry points under §§ 109.301 and 109.303, final-form § 109.718 (proposed § 109.717) and § 109.703 (relating to facilities operation), and the system service and auxiliary power requirements under § 109.708. The remaining more stringent provisions are designed to help reduce the occurrence of violations, treatment breakdowns and water supply emergencies, thereby improving system resiliency and reliability and reducing the need for Department staff resources to respond to these emergency situations. Refer to Section E for more information on the revisions to these sections.

Comment: IRRC asked the Board to ensure that the final-form rulemaking and the Regulatory Analysis Form for this final-form rulemaking make clear who is required to comply with the regulations and how the final-form rulemaking affects the various segments of the regulated community. IRRC asked the Board to consider regulatory methods to minimize adverse impacts on small businesses or explain the reasonableness of not considering alternatives.

Response: The various definitions and types of PWSs that shall comply with the SDWA and regulations are not being amended in this final-form rulemaking. The existing State and Federal regulatory definitions and guidance provide more information about the types of water systems. In general, nontransient NCWSs include facilities that serve 25 or more of the same people, but are not residential facilities. This includes schools and places of business with 25 or more employees. Transient NCWSs generally serve a transient population and include restaurants and campgrounds. Finally, the fees for small water systems and businesses were established to bear a reasonable relationship to the actual cost of services provided and in a manner that minimizes the adverse impact on water systems with fewer customers to bear the cost. Refer to Section F and to the responses to Questions 17, 24, 26 and 27 in the Regulatory Analysis Form for this final-form rulemaking for more information about who is required to comply with the regulations, how this final-form rulemaking affects the various segments of the regulated community, the costs for the various segments of the regulated community, including small businesses, and for the consideration of alternative regulatory approaches.

Comment: IRRC strongly encouraged the Department to organize additional stakeholder meetings with representatives from all segments of the regulated community to develop final-form regulations that are clear, reasonable and have the least adverse economic impact while protecting the public health, safety and welfare. IRRC asked the Board to address the reasonableness, economic impact and implementation of revisions made to these sections of the final-form rulemaking in this preamble.

Response: The fees and other proposed amendments were thoroughly discussed with the TAC and other stakeholders through several advisory committee meetings and a public webinar. Advisory committee meetings were announced publicly and are open to the public. As previously mentioned, several general update provisions were either revised or deleted in response to TAC and public comments. In addition, several options were evaluated using all available data to determine the best method of assessing fees to ensure the fees bear a reasonable relationship to the actual cost of services provided by the Department and in a manner that minimizes the adverse impact on water systems with fewer customers to bear the cost. Refer to Sections E and F for more information about the reasonableness, economic impact and implementation of revisions to this final-form rulemaking.

Comment: The Board proposed to reduce acceptable turbidity levels, making the maximum level more stringent than Federal standards. IRRC asked the Board to explain the reasonableness and economic impact of making this requirement more stringent than Federal standards.

Response: The Department deleted these provisions from this final-form rulemaking. Refer to the discussion of the amendments to §§ 109.202 and 109.701 in Section E for more information.

Comment: Proposed § 109.301(11)(ii) stated that "at a minimum, all entry points shall provide water to the public on an annual basis to ensure all sources and entry points are included in routine compliance monitoring." IRRC asked the Board to address in this preamble the economic impact and feasibility of requiring all entry points to provide water to the public, as well as the implementation schedule. IRRC asked the Board to define "entry points" in this final-form rulemaking. IRRC asked the Board to clarify "back-up sources" and define the term in § 109.1 (relating to definitions), and to clarify how interconnections will be affected in the final-form rulemaking.

Response: The Department deleted proposed § 109.301(11)(ii) in response to TAC and public comments. Revisions were made to include the designation "reserve" in § 109.301(15) and final-form § 109.718 (proposed § 109.717), rather than define "back-up sources" in § 109.1, to allow select sources and entry points to remain off-line until needed. Section 109.1 already defines "entry point." "Back-up" source is not used in the regulations, so a definition is not needed. Refer to the discussion of §§ 109.301, 109.303 and 109.703 and final-form § 109.718 (proposed § 109.717) in Section E for more information, including an explanation of how interconnections will be affected.

Comment: IRRC asked the Board to clarify the pre-drilling plan and source water assessment requirements of § 109.503(a)(1) (relating to public water system construction permits) in this final-form rulemaking. IRRC asked the Board to explain the reasonableness of this requirement.

Response: Pre-drilling plans and source approvals are coordinated with other agencies such as the Susquehanna River Basin Commission, the Delaware River Basin Commission (DRBC), and the like. The individual components of a pre-drilling plan and subsequent approvals of potential production well site locations have been required as part of the permitting process since at least 1997. The individual components are listed in § 109.503(a)(1)(iii) and are required to be submitted to the Department as part of a construction permit application. However, with these amendments, the pre-drilling plan will now be required to be submitted to the Department for review and approval prior to drilling the well. Revisions were not made in this final-form rulemaking to § 109.503(a).

Test wells and exploratory activities would be undertaken first to determine potential production well site locations; the Department does encourage these valuable data gathering activities. Potential production well sites would then be addressed by the pre-drilling plan.

The clarifications to existing requirements for preliminary source water assessments in § 109.503(a)(1)(iii)(A) do not involve water quality monitoring and are primarily to determine potential sources of contamination and the susceptibility of the production water source to contamination, not to assess existing water quality in the well. In addition, the Groundwater Monitoring Guidance Manual is used by the Department and multiple agencies to address groundwater sampling/monitoring issues. Refer to the Benefits portion of Section F for more information.

Comment: Regarding the proposed amendments to § 109.606, IRRC suggested that the Board should define "equipment," clarify its intent regarding certification and explain the reasonableness of the expanded certification, including addressing economic impacts.

Response: The Board revised § 109.606 to clarify that chemicals, materials and equipment that come in contact with the water or may affect the quality of the water must be acceptable to the Department. In other words, this section applies to the wetted parts of materials and equipment, and excludes motors, casings, and the like that do not come in contact with the water. The Department believes that this clarification should alleviate the need for a definition for "equipment."

According to NSF, a 2016 survey of members of the Association of State Drinking Water Administrators (ASDWA) found that 48 states have legislation, regulations or policies requiring compliance with NSF standards. NSF International (2016), "Survey of ASDWA Members on the Use of NSF/ANSI Standards" (2016 survey). In this Commonwealth, NSF certification requirements under § 109.606 are long-standing and are intended to ensure the safety and efficacy of chemicals, materials and equipment that come into contact with water. NSF certification ensures that harmful metals such as cadmium, chromium and lead do not leech from materials and equipment. NSF certification also ensures that water treatment devices can meet manufacturer's claims and effectively treat the water. The intent of the revisions to § 109.606 is to clarify that "equipment" has always been included, as evidenced by the fact that "equipment" has always been part of the heading of § 109.606. Under existing Department protocols, water systems shall take all steps necessary to identify and propose the use of NSF-approved equipment. If NSF-certified equipment is not available, the Department, on a case-by-case basis, will allow the use of other equipment, provided the equipment does not pose an increased risk to public health. The Department is not expanding the scope of equipment for which NSF certification requirements apply; therefore, additional costs are not expected to be incurred.

Comment: Regarding §109.1303 (relating to triggered monitoring requirements for groundwater sources) and the proposed deletion of the opportunity to collect five additional *E. coli* source water samples to confirm if there is a problem, IRRC asked the Board to address the reasonableness and economic impacts of eliminating the opportunity for further testing to prevent false positives, if the deletion is maintained in the final-form rulemaking.

Response: The EPA approves analytical methods based on the reliability of a method to have a low risk of samples being false positive or false negative. In the preamble to the proposed Federal Ground Water Rule, the EPA states "that, in the interest of public health, a positive sample by any of the methods listed in Table III-4 should be regarded as a fecal indicator-positive source water sample." See 65 FR 30194 (May 10, 2000). The proposed and final Federal rules along with the Department's revisions to Chapter 109 provide a means for the laboratory or a state to invalidate samples. Although the EPA allowed the five additional samples as a concession regarding the rare event that a sample is false positive, the EPA's commentary in the preamble to this final rule states "that in most cases these five additional samples should capture the fecal contamination event since the samples are taken within 24 hours." See 71 FR 65574 (November 8, 2006). This statement acknowledges that a risk to public health exists because the five additional samples may miss detecting the fecal contamination. In other words, the fecal contamination that was detected in the original sample was a true positive; however, because contamination is neither constant nor immobile, the five additional samples may miss detecting the contamination event. This risk of missing the event is the main rationale for the Department's decision to delete the five additional samples.

Regarding economic impact, water systems will no longer be required to collect the five additional *E. coli* samples, which will result in a potential cost savings. Further, all bottled water systems are already required to provide continuous disinfection. If 4-log treatment is

triggered, additional capital costs will not be incurred—treatment already exists. However, some bottled watersystems will need to modify operational practices using existing treatment and improve associated monitoring and reporting practices, as specified in revised operations permits, to insure adequate 4-log treatment is maintained.

E. *Summary of Revisions to the Proposed Rulemaking*

§ 109.202. State MCLs, MRDLs and treatment technique requirements

Proposed subsection (c)(1)(i)(A)(V) was deleted in response to TAC and public comments and will be considered in a future rulemaking. The Department decided to defer these proposed amendments until after the EPA completes its 6-year review of the Federal turbidity requirements established under the Surface Water Treatment Rules. This will allow the Department to consider the EPA's proposed changes before moving forward with proposed amendments to applicable State regulatory requirements. During the interim, the Department, through its existing programs, including the Area-Wide Optimization, FPPE and Partnership for Safe Water programs, will continue to recommend and encourage filter plant operators to voluntarily meet optimal water quality levels and respond to trends of increasing turbidity as quickly as possible. Through these programs, the Program has always dedicated significant resources toward compliance assistance/violation prevention at surface water filtration plants.

Additionally, the proposed alarm and shutdown capability amendments under § 109.602 (relating to acceptable design) remain in this final-form rulemaking, which are also targeted at surface water filtration plants. The automated plant shut down requirements are intended to prevent poor quality water from reaching customers, which will protect public health, reduce PWS costs related to corrective actions and issuing public notice, reduce costs to the community and maintain consumer confidence. Therefore, the improved alarm and shutdown capabilities that will occur as a result of systems complying with this final-form rulemaking are a very important interim public health protection measure which will be in place while the Department awaits the EPA's future actions on potentially more stringent turbidity provisions.

Section 109.202(c)(1)(i)(C) includes specific treatment technique requirements for membrane filtration. These standards are consistent with the results of pilot testing conducted throughout this Commonwealth, recommendations by the EPA in the Membrane Filtration Guidance Manual (EPA 815-R-06-009, November 2005), as well as recommendations made by equipment manufacturers. These standards were previously applied through special permit conditions. Certified operators have consistently maintained the proposed levels of performance at membrane filter plants throughout this Commonwealth. When deviations from this performance have occurred, follow-up investigations revealed the need for repairs to this treatment barrier.

§ 109.301. General monitoring requirements

Proposed paragraph (11)(ii) was deleted in this final-form rulemaking in response to TAC and public comments. This proposed subparagraph was revised and moved to paragraph (15) and to the comprehensive monitoring plan requirements under final-form § 109.718 (proposed § 109.717).

These revisions are intended to clarify the monitoring requirements for entry points that do not provide water continuously and address concerns related to gaps in the monitoring, reporting and tracking of back-up water sources and entry points. Per State regulations in §§ 109.301 and 109.303 and Federal regulations in 40 CFR 141.23(a), 141.24(f) and (h) and 141.26(a), all sources and entry points shall be included in routine compliance monitoring to ensure water quality meets safe drinking water standards. Currently, sources and entry points that do not provide water continuously are required to be monitored when used. However, monitoring requirements for back-up sources are not currently tracked, which means no verifiable controls are in place to ensure that all sources and entry points meet safe drinking water standards.

These concerns were most recently highlighted by the EPA's Office of Inspector General in the 2010 report "EPA Lacks Internal Controls to Prevent Misuse of Emergency Drinking Water Facilities" (2010 report) (Report No. 11-P-0001). *Note*: The term "emergency" is often used to describe sources other than permanent sources. In this Commonwealth, some of these back-up sources have not been used in at least 5 years and, therefore, the Department does not know the water quality for these sources.

To better understand the scope of the problem in this Commonwealth, the following data was retrieved from PADWIS.

Entry Points				
PWS Type	*Total Number of Entry Points*	*Number of Permanent Entry Points*	*Number of Nonpermanent Entry Points*	*Percentage of Nonpermanent Entry Points*
CWSs	3,330	3,003	327	10%
Others	7,880	7,760	120	2%
Total	11,210	10,763	447	4%

An entry point is the place at which finished water representative of each source enters the distribution system. Routine compliance monitoring is not tracked at nonpermanent entry points. Nonpermanent entry points include the existing categories of seasonal, interim, reserve and emergency entry points.

Based on the data, CWSs provide finished water to consumers through a total of 3,330 entry points, 327 (or 10%) of which are nonpermanent. Therefore, as many as 10% of all entry points may not be included in all required monitoring prior to serving water to consumers.

The numbers are even higher at the individual source level.

Water Supply Sources (Wells, Springs, Surface Water Intakes, and the Like)				
PWS Type	*Total Number of Sources*	*Number of Permanent Sources*	*Number of Nonpermanent Sources*	*Percentage of Nonpermanent Sources*
CWSs	5,252	4,634	618	12%
Others	8,604	8,297	307	4%
Total	13,856	12,931	925	7%

For CWSs, as many as 12% of all sources may not be included in routine compliance monitoring, yet these sources can be used at any time.

The Department also reviewed the monitoring history of the 447 nonpermanent entry points previously mentioned.

Nonpermanent Entry Points			
PWS Type	*Number of Entry Points*	*Number and Percentage of Entry Points with No Monitoring Data (Since 1992)*	*Number of Entry Points with Some Monitoring Data*
CWSs	327	143 (44%)	184 (of these entry points, 47 were sampled in 2016, 37 were sampled during the 2012—2015 monitoring period and the remaining 101 were sampled prior to 2012)
Others	120	7 (6%)	113 (55 entry points have recent data (2016))
Total	447	150 (34%)	

For CWSs, 143 (or 44%) of all nonpermanent entry points have no monitoring data since 1992. Of the 184 entry points with some data, most of the data are 5 to 10 years old.

The use of unmonitored sources and entry points could adversely impact basic water quality, including pH, alkalinity, turbidity, corrosivity and lead solubility, dissolved inorganic carbon and natural organic matter. Water suppliers may have limited information about how these sources or entry points will impact treatment efficacy and distribution system water quality. In addition, back-up or emergency sources may have poor water quality or MCL exceedances. The use of these sources without proper monitoring and verifiable controls could lead to an increased risk to public health.

Finally, treatment facilities and other appurtenances associated with these sources may no longer be in good working order. Back-up sources and entry points with unknown water quality or that have not been used or are no longer in good working order provide a false sense of security in terms of system resiliency and emergency response. While the Department understands that many facilities are not used on a 24/7 basis, these amendments will ensure that all permitted sources and entry points are monitored at least annually, or when in use.

The Department anticipates that select purchased interconnections will be able to retain the "emergency" designation if the following criteria are met. The Department anticipates proposing technical guidance in the near future that addresses these criteria. As previously noted, "emergency" is often used to describe sources other than permanent sources.

• Using the last 3 years of historical water use data, the water supplier can demonstrate that the purchased interconnection has only been used for emergency purposes.

• Emergency use has not occurred more than 14 days per year, excluding use under State or Federal emergency declarations.

• The Department has conducted an annual compliance check using reported water use data.

On a case-by-case basis, the Department may allow the use of the "reserve" designation for select sources and entry points, without conducting routine annual compliance monitoring, if documentation is provided to the Department that supports the use of this designation. Select sources and entry points that meet these criteria will be covered by a special condition in the permit that requires Department notification and completion of compliance monitoring prior to use.

Paragraph (15) is added in this final-form rulemaking to clarify the monitoring requirements for reserve sources and reserve entry points to ensure these facilities are properly monitored prior to and during each use.

§ 109.303. Sampling requirements

Subsection (a)(4) is revised in this final-form rulemaking in response to TAC and public comments. The proposed amendments to clarify the monitoring requirements when sources are blended or alternated prior to the entry point were deleted from this paragraph, revised and added to final-form § 109.718 (proposed § 109.717).

Subsection (i) is revised to delete unnecessary language.

§ 109.503. Public water system construction permits

Subsection (b)(2) is revised in this final-form rulemaking to clarify that a change to a source designation may be considered a minor amendment.

§ 109.602. Acceptable design

Subsections (f) and (g) are revised in this final-form rulemaking in response to TAC and public comments to allow the Department to approve an alternate compliance schedule if the water supplier submits a written request with supporting documentation.

Subsection (i)(2)(iii) is revised in this final-form rulemaking in response to TAC and public comments to change "clearwell water levels" to "water levels to maintain adequate CT for Giardia inactivation." This revision is necessary because not all water systems use the clearwell as a disinfection segment for Giardia inactivation contact time (CT). After consideration of comments,

the Department deleted proposed subsection (i)(2)(iv) to establish alarm and shutdown capabilities for "any other operational parameter determined by the Department as necessary for the system to maintain compliance." Commentators were concerned that this language may be overly broad and lead to inconsistent implementation. With this deletion, the universe of required alarms is reduced, thereby, allowing potential for additional cost savings. The basis for this deletion was the concern that this particular requirement may be too far reaching and cost prohibitive. Rather than include this language, the Department will rely on appropriate water system personnel (for example, properly certified operators and consulting engineers) to carefully evaluate what additional operational parameters may require alarms for the particular filter plant to consistently comply with regulatory requirements. Additionally, if lack of an alarm is linked to risk of treatment breakdown, the Department will address these issues through a system-specific permit or order on a case-by-case basis.

These new requirements are added to define new requirements for alarm and shutdown capabilities. Alarm and shutdown capabilities are intended to prevent unsafe water from reaching customers.

The TAC recommended that the Department should provide accurate cost estimates for compliance with these provisions and evaluate whether 12 months is adequate time for systems to comply given the costs associated overall with the regulatory package and the addition of fees. The TAC expressed concerns that proposed subsection (i)(2)(iv), regarding other operational parameters that the Department may determine necessary for compliance, may be too far reaching and cost prohibitive.

To address the TAC's concerns about costs, the Department conducted additional cost estimate research. The Department estimates that 10% of the 353 filter plants in this Commonwealth will need to install an auto-dialer. The Department estimates that the cost to achieve the automatic alarm and shutdown capabilities ranges from $8,860 to $11,980 per treatment plant, depending on the options chosen, with annual maintenance costs of $600. A detailed discussion of these estimated costs is included in Section F.

Overall, the Department notes that the alarm and shutdown amendments will be cost-effective in comparison to staffing costs incurred by systems that maintain physical staffing of the facility. Several states have regulations that do not allow unattended operation of surface water filtration plants. These revisions provide a reasonable alternative to mandating the presence of a certified operator at all times in all water systems in this Commonwealth.

§ 109.606. Chemicals, materials and equipment

In response to public comments, subsections (a)—(d) are revised in this final-form rulemaking to clarify that chemicals, materials and equipment that come in contact with the water or may affect the quality of the water must be acceptable to the Department. In other words, these requirements apply to the wetted parts of materials and equipment, and exclude motors, casings, and the like, that do not come in contact with the water.

According to NSF, the 2016 survey of ASDWA members found that 48 states have legislation, regulations or policies requiring compliance with NSF standards. In this Commonwealth, NSF certification requirements in § 109.606 have been long-standing and are intended to ensure the safety and efficacy of chemicals, materials and equipment that come into contact with water. NSF certification ensures that harmful metals such as cadmium, chromium and lead do not leech from materials and equipment. NSF certification also ensures that water treatment devices can meet manufacturers' claims and effectively treat the water. The intent of the revisions to § 109.606 is to clarify that "equipment" has always been included, as evidenced by the fact that "equipment" has always been part of the heading of §109.606. Under existing Department protocols, water systems shall take all steps necessary to identify and propose the use of NSF-approved equipment. If NSF-certified equipment is not available, the Department, on a case-by-case basis, will allow the use of other equipment, provided the equipment does not pose an increased risk to public health. The Department is not expanding the scope of equipment for which NSF certification requirements apply. Therefore, additional costs are not expected to be incurred.

Section 109.606 allows the use of other standards to meet these criteria. For example, the use of materials, such as concrete and stainless steel, which meet American Water Works Association standards would be acceptable to the Department.

§ 109.612. POE devices

Subsection (b) is revised in this final-form rulemaking in response to the TAC's recommendation that the Department change "and" to "or."

§ 109.701. Reporting and recordkeeping

In response to comments from the TAC and other commentators, subsection (a)(2)(i)(A)(VIII) and (IX) has been revised in this final-form rulemaking to delete more stringent turbidity performance standards for conventional, direct, slow sand and diatomaceous earth filtration technologies.

Subsection (e)(2) is amended to add a citation to clarify which systems are required to report individual filter turbidity monitoring. The trigger levels specified in subsection (e)(2)(i)—(iv) were proposed to be replaced by lower trigger levels for IFE reporting requirements for all filtration technologies as specified in proposed subparagraphs (v)—(viii). These proposed turbidity reporting requirements have been deleted in this final-form rulemaking. Therefore, existing requirements in subsection (e)(2)(i)—(iv) remain unchanged.

Through the rulemaking process, the TAC commented that the "ramifications of these turbidity reductions include additional reporting, self-assessments and comprehensive performance evaluations, as well as possible public notifications." The TAC recommended that the Department "should provide rationale, science and methodology, cost vs. benefits, public health benefit, etc. and data to support the proposed changes." These comments mirror previous comments regarding significant figures and reducing IFE turbidity standards significantly.

In response to the TAC's comments, the Department explains the following. IFE is a primary compliance monitoring location. As with CFE, IFE turbidity is the surrogate measurement for pathogen breakthrough, primarily the acute pathogen *Cryptosporidium*. Turbidity breakthrough on individual filters often provides an indication of water quality problems before CFE turbidity is significantly impacted. As IFE turbidity increases, risk of particle breakthrough on that particular filter increases; this science is supported by existing regulations and industry experts. Most filter plants in this Commonwealth typically produce IFE water quality <0.10 NTU.

Therefore, exceedances of the proposed lower turbidity levels will occur only when water systems are experiencing significant increases in turbidity from an individual filter. Multiple peer reviewed research papers indicate that as turbidity significantly increases from the baseline levels, the risk of pathogen breakthrough increases. Huck, P.M., et al. (2002), "Effects of Filter Operation on *Cryptosporidium* Removal," *Journal—American Water Works Association*, 94(6), 97—111. Emelko, M.B., Huck, P.M. and Douglas, I.P. (2003), "*Cryptosporidium* and Microsphere Removal During Late In-Cycle Filtration," *Journal—American Water Works Association*, 95(5), 173—182.

The real-world impact to operational practices at filter plants in this Commonwealth under the proposed amendments would have been that water suppliers would take important corrective actions sooner (such as removing the filter from service, consulting with the Department and notifying customers). This was intended to enable suppliers to identify physical integrity issues within an individual filter before CFE water quality is impacted, or before problems within one filter occur in other filters. The Department has documented breakdowns in treatment and the presence of pathogens (such as Giardia or *Cryptosporidium*) in the IFE of water treatment plants in this Commonwealth that complied with the current IFE turbidity standards. This has been documented both with continuous turbidity monitoring and Microscopic Particulate Analysis cartridges. Therefore, strengthening the current IFE turbidity standards was proposed to provide an additional level of protection.

As previously noted, the Department favors establishing more stringent IFE and CFE turbidity compliance and trigger levels for surface water filtration plants. However, in responding to numerous TAC and public comments, the Department is deferring amendments until the EPA completes its 6-year review of the Federal turbidity requirements established under the Surface Water Treatment Rules. This will allow the Department to consider the EPA's proposed changes before moving forward with proposed amendments to applicable State regulatory requirements. Until that time, the Department encourages filter plant operators to voluntarily meet optimal water quality levels and respond to trends of increasing turbidity as quickly as possible. This can be accomplished through the use of the Department's existing programs, including the Area-Wide Optimization and FPPE and Partnership for Safe Water programs. Through these programs, the Program has always dedicated significant resources toward compliance assistance/violation prevention at surface water filtration plants.

Subsection (n) is added in this final-form rulemaking to set forth additional reporting requirements for systems using reserve sources, reserve treatment plants or reserve entry points. These requirements are needed to ensure proper tracking and oversight of these facilities. While these facilities are in use, additional monitoring is required. Timely notification that the facility is no longer in use will allow the Department to modify the monitoring requirements in PADWIS accordingly.

§ 109.703. Facilities operation

Subsection (d) is added in this final-form rulemaking in response to TAC and public comments to specify the requirements for requesting Department approval to use a reserve source, reserve treatment plant or reserve entry point. This revision is necessary to ensure that the use of reserve facilities is properly tracked and monitored prior to each use.

§ 109.706. System map

In response to public comments, subsection (a) is revised in this final-form rulemaking to clarify that the requirement for a system distribution map does not apply to BVRBs.

§ 109.708. System service and auxiliary power

This Commonwealth is susceptible to natural disasters, such as ice storms, tropical storms and hurricanes, which can lead to massive and extended flooding or power outages, or both. As previously noted, this Commonwealth's drinking water sources and treatment facilities are susceptible to emergency situations resulting from natural and manmade disasters. Therefore, all CWSs shall have effective options to provide consistent system service during these emergencies. Despite long-standing efforts to encourage water systems to develop feasible plans for the continuous provision of adequate and safe water quantity and quality during emergency circumstances, many water suppliers are still inadequately prepared. The Department estimates that more than 400 CWSs do not have an up-to-date emergency response plan. This has resulted in significant impacts to consumers in the form of inadequate water quantity or quality, or both, and the resulting consumption advisories.

Flooding events caused by localized heavy rains, hurricanes and tropical storms result in elevated public health risks. Source water turbidity and pathogen loading can increase dramatically during these events. Additionally, when power outages cause interruptions in water system operations, water systems can experience a sharp reduction in supply, which results in low or no pressure within the distribution system. This results in increased risk to public health, because low pressure can allow intrusion of contaminants into distribution system piping from backflow and cross connections. Some customers may also experience inadequate supply of water for basic sanitary purposes, flushing toilets and potable uses.

Several other Mid-Atlantic and Northeastern states are considering promulgating, or have already promulgated, regulations for auxiliary power. New Jersey and New York have existing design standards for auxiliary power. New York requires standby power through incorporation of standards recommended by the Great Lakes—Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (known as the 10 States Standards). New Jersey's requirements are in N.J.S.A. 58:12A-4(c) and N.J.A.C. 7:10-11.6(i). New Jersey recently evaluated its regulations and issued additional guidance and best management practices regarding auxiliary power, available at http://www.nj.gov/dep/watersupply/pdf/guidance-ap.pdf. Connecticut is in the process of updating its regulations to incorporate generator and emergency contingency and response plan requirements, available at http://www.ct.gov/dph/lib/dph/public_health_code/pending_regulations/proposed_regulation--generators.pdf.

The TAC commented that the Department should not be prescribing the methods by which a public water supplier obtains auxiliary power. The TAC further claimed that: the Department has not sufficiently evaluated the cost of providing auxiliary power; secondary power feeds may not be attainable in rural areas or may be extremely cost prohibitive; and the Department has not properly evaluated the total cost for implementing generator power. Also, the TAC stated that systems may avail themselves of the resources from the Pennsylvania Water and Wastewater Agency Response Network (PaWARN) to meet auxiliary power demands. The TAC

recommended that this provision be addressed in emergency response plans and not in regulation.

This final-form rulemaking does not prescribe a specific method by which a system shall comply. Rather, this final-form rulemaking requires that a feasible plan be in place to ensure safe and potable water is continuously supplied to users. The water supplier will determine which option or combination of options it will use to comply. Ideally, suppliers will implement a combination of options to improve their redundancy and resiliency.

This information should be incorporated into emergency response plans, as the TAC suggests. However, despite long-standing efforts to encourage water systems to develop feasible plans for the continuous provision of adequate and safe water quantity and quality during emergency circumstances, many water suppliers are still inadequately prepared. The Department estimates that more than 400 CWSs in this Commonwealth do not have an up-to-date emergency response plan.

Therefore, the Department believes that these revisions are necessary. Wastewater treatment plants have been required to have back-up power supplies for many years. These revisions provide consistency within the drinking water and wastewater industry. It is not feasible to develop these plans under an emergency. Rather, plans must be in place before an emergency occurs. It is only a matter of time before another natural or manmade disaster significantly impacts water systems in this Commonwealth. If these revisions were not adopted, a large number of CWSs would likely not be able to provide a consistent supply of safe and potable water.

In response to the TAC's comment that systems can use the services of PaWARN to comply, the Department fully recognizes the importance of PaWARN and encourages membership in this valuable mutual aid network. For this reason, PaWARN is listed as one critical component of a complete plan to provide uninterrupted system service. In the draft certification form (USSP) which shall be completed to comply with the amendments to § 109.708, PaWARN is listed as one "alternate provision" option (along with finished water storage capacity, interconnections with neighboring water systems and rental agreements for generators). As of December 2017, PaWARN had approximately 104 members, approximately 92 of those members manage CWSs throughout this Commonwealth. This is a very small subset of the 1,952 CWSs in this Commonwealth. PaWARN membership should prove valuable during small scale events.

After significant consideration of comments, the Department made several revisions to the proposed rulemaking. First, the Department expanded the alternate provision options further to include "a combination of alternate provisions," "portable generators" and a category of "other" alternate provisions. Within the "other" alternate provisions category, system specific alternate provisions may be proposed to insure uninterrupted system service. Additionally, due to the variety of system specific challenges, the Department includes in final-form subsection (c) the option to submit a corrective action schedule for necessary improvements that have not been completed by the compliance deadlines specified in subsection (a) for submittal of the USSP. More specifically, this new approach requires certification of completion of the USSP form created by the Department by the deadlines in subsection (a). However, if the USSP identifies that deficiencies exist that prevent a continuous supply of safe and potable water as specified in subsection (a), and the community water supplier has not addressed those deficiencies by the deadline for USSP submittal, a schedule shall be submitted within 6 months which includes detailed corrective actions and corresponding completion dates. These significant revisions will help enable the cost for compliance with these provisions to be spread out over a longer period of time. Additionally, these revisions provide water suppliers with more flexibility in choosing the approach that best suits their particular water system, and adequate time to implement that plan in the most effective manner.

Final-form § 109.718. Comprehensive monitoring plan (proposed § 109.717)

This section is revised in this final-form rulemaking in response to TAC and public comments to defer the compliance date of the new comprehensive monitoring plan requirements until 1 year after the effective date of this final-form rulemaking.

This section was also revised to incorporate recommended changes that allow the use of the designation "reserve" for select sources and entry points if certain conditions are met. Reserve sources and reserve entry points will be identified in the water system's permit, require notification to the Department and monitoring prior to use.

These requirements will ensure that all sources and entry points are included in routine compliance monitoring at the entry point and within the distribution system, or are properly monitored prior to use. The plan must be specific to the system and include details about the various sources and entry points, and how the facilities are operated. The operation of each source and entry point will dictate how compliance monitoring is conducted to ensure that all sources and entry points are included in routine compliance monitoring.

§ 109.1402. Annual fees

This section is revised in this final-form rulemaking in response to TAC and public comments to defer the effective date of the fees until January 1, 2019, to provide more time for budgeting. Water system boards and authorities have already completed and authorized their budgets for 2018.

Subsection (a)(1)—(3) is revised in this final-form rulemaking to change the number of people in the population served for the smallest category of PWSs. The proposed rulemaking outlined the annual fees for PWSs serving populations of 25 to 100 people. The population numbers are revised in this final-form rulemaking to apply to PWSs serving a population of 100 people or less. These revisions are made because a PWS is defined in § 109.1 as 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." In this Commonwealth, there are some PWSs that serve at least 15 service connections, but still serve a population of less than 25 people. Therefore, the population number was revised to account for those PWSs.

This section was also revised to change the fee schedule due dates as follows:

Population Served	*Submit Annual Fee by*	*Expected Quarterly Revenue**
3,301 or more	March 31	$1,314,875
501—3,300	June 30	$2,527,275
101—500	September 30	$1,830,425
100 or less	December 31	$1,978,175
	Total	$7,650,750

*The expected quarterly revenue assumes that most systems paying $6,500 or more will request the quarterly payment option.

The larger systems will be billed during the first quarter, with the smaller systems receiving invoices later in the year. This amendment will ensure:

- Receipt of all annual fees (including quarterly payments for larger systems) within the same calendar year.
- A more even distribution of revenue throughout the year.
- Additional time for small systems to budget for the fees.

This section is revised in this final-form rulemaking in response to TAC and public comments to allow a lower threshold for systems that may request quarterly payments. The threshold was lowered from $10,000 to $6,500.

The preamble to the proposed rulemaking included an extensive explanation regarding the appropriateness of the fees, and how the fees bear a reasonable relationship to the actual cost of services provided.

The following table summarizes the annual fees for CWSs, which are based on population and range from $250 to $40,000. The per-person costs range from $0.35 to $10/person/year.

CWS Annual Fees (Based on Population)		
Population Served	*Annual Fee*	*Cost/Person/Year*
100 or less	$250	$2.50—$10.00
101—500	$500	$1.00—$4.95
501—1,000	$1,000	$1.00—$2.00
1,001—2,000	$2,000	$1.00—$2.00
2,001—3,300	$4,000	$1.21—$2.00
3,301—5,000	$6,500	$1.30—$1.97
5,001—10,000	$10,000	$1.00—$2.00
10,001—25,000	$20,000	$0.80—$2.00
25,001—50,000	$25,000	$0.50—$1.00
50,001—75,000	$30,000	$0.40—$0.60
75,001—100,000	$35,000	$0.35—$0.47
100,001 or more	$40,000	≤ $0.40

The Department analyzed the cost of providing services to administer the SDWA and its regulations. The cost of some services can be estimated, while the cost of other services depends on the specific circumstances and will vary widely. The following table summarizes the Department's costs of providing those services that can be estimated for CWSs serving various populations. The hourly rate was provided by the Department's fiscal office and includes salary, benefits and in-direct costs (such as supplies, and the like).

Department Cost of Services that Can be Estimated				
Activity	*Hours/Activity/Year for CWSs Serving the Following Population*			
	<750	*750—5,000*	*5,000—50,000*	*>50,000*
Conduct sanitary surveys	7.5	10	25	37.5
Conduct other inspections	2.5	3.3	5	10
Determine compliance	12	12	15	15
Maintain PADWIS/eFACTS	7.5	7.5	10	10
Review plans/reports	7.5	10	15	15
Provide technical assistance/training	7.5	7.5	10	10
Total Hours	44.5	50.3	80	97.5
at $49/Hour =	$2,180	$2,465	$3,920	$4,778

Examples of other services and costs that involve variable circumstances and preclude a single estimate for the services include the following:

1. Sanitary surveys that take longer to conduct due to the complexity or size of the water system. Examples of actual hours expended and costs to complete more complicated sanitary surveys at large water systems (namely those serving populations >50,000) are as follows:

System A (population = 57,000): 40.5 hours at a cost of $1,984

System B (population = 66,500): 40 hours at a cost of $1,960

System C (population = 87,000): 49 hours at a cost of $2,401

System D (population = 105,000): 60 hours at a cost of $2,940

System E (population = 120,000): 60 hours at a cost of $2,940

System F (population = 747,500): 103 hours at a cost of $5,047

System G (population = 1.6 million): 124 hours at a cost of $6,076

2. Additional follow-up actions taken by the Department in response to a violation. When a drinking water standard is exceeded, Department staff are responsible for: consulting with and providing direction to the water system; ensuring that public notice is complete, timely and repeated as needed; tracking, reviewing and approving follow-up and corrective actions (such as collecting confirmation or additional samples, repairing/replacing/installing water treatment or taking contaminated sources offline); and determining when the system has returned to compliance.

For example, in 2016, monitoring results for a large water system in this Commonwealth indicated the 90th percentile lead value exceeded the action level established in the Lead and Copper Rule. This triggered lead service line replacement actions. Department staff spent at least 116 1/2 hours working to address this important issue. Services provided by the Department to achieve compliance included meetings, file reviews, drafting compliance documents, follow-up action reviews and letters. The approximate cost for these services was $5,708.

3. Additional follow-up, corrective and emergency actions taken by the Department in response to a water supply emergency. Water supply emergencies occur each year and require substantial resources from the Department. The following are examples of emergencies and associated costs for services provided by the Department.

In spring 2011, unexpected damage to a very large water main resulted in a major leak, loss of significant water quantity and pressure. The result was closure of multiple businesses and government agencies in a large city in the Commonwealth for 3 days due to lack of a potable water supply. This emergency spanned approximately 5 consecutive days with approximately 66,500 customers impacted. The Department provided a variety of onsite support services at the site of the break, and at the drinking water filtration plant. Department cost for services provided during this event equates to approximately 160 hours of staff time and a cost of $7,840.

In summer 2012, significant construction delays in completing critical renovations and upgrades to a water filter plant threatened the ability to provide an adequate quantity of drinking water to approximately 210,000 customers. Department staff provided a variety of specialized engineering and operational support services over the course of several weeks. Total cost estimate of Department services provided during this event includes 600 hours of staff time costing approximately $29,400.

In summer 2015, runoff from a large fire at an industrial facility severely contaminated the intakes for two PWSs thereby rendering their normal source of surface water untreatable for almost 3 months. Together, the 2 public water suppliers impacted provided drinking water to approximately 43,000 customers. Several Department staff were involved in providing a wide variety of emergency support services, over the course of several months, to the water suppliers affected. Department cost estimates for this event include 515 staff hours ($25,235) and emergency sampling costs ($17,818). The total cost of Department services provided was approximately $43,053.

In winter 2016, an equipment failure resulted in flooding at a surface water filtration plant which provides water to approximately 20,000 customers. This immobilized treatment and pumping capabilities for 6 consecutive days. The filter plant did not resume normal operations for approximately 2 weeks. Without combined efforts by the water system, the Department and neighboring water systems, 20,000 customers could have endured consecutive days without an adequate supply of water. Department services included coordination with neighboring water systems to identify alternate sources of water, emergency permit considerations, site assessments, engineering and operational support. Additionally, the Department loaned the PWS critical water quality monitoring equipment (valued at approximately $24,000) for approximately 10 weeks to help verify that safe water was consistently provided. The total cost estimate of Department services provided during this event also includes 300 hours of staff time, which cost approximately $14,700.

4. The cost of samples collected by the Department during inspections and FPPEs, in response to complaint investigations, and to assess water quality and protect public health during water supply emergencies. These sampling costs range from $30 for inorganic analyses to $400 for pesticides to $1,200 for analysis of *Cryptosporidium* and Giardia to $2,968 for a complete emergency sampling suite. Total Department lab costs average approximately $680,000 per year.

5. The costs associated with additional training when new regulations are promulgated. One example is the numerous training sessions that were developed and delivered in 2015-2016 to roll-out implementation of the RTCR adopted to conform to Federal requirements. This training included 8 different training courses, workshops and webinars that were presented 160 times across this Commonwealth for a total of 482 hours of training. The cost to deliver 482 hours of training was $23,618.

6. The costs associated with specific follow-up actions established in new regulations. The Federal RTCR became effective on April 1, 2016, and the Department and the EPA shared enforcement of the Federal rule until the Commonwealth's regulations were adopted at 46 Pa.B. 6005 (September 24, 2016). As part of the Department's enforcement responsibilities during this interim period, staff conducted Level 2 assessments at PWSs. A Level 2 assessment is triggered when a public water supply has an *E. coli* MCL violation or when two total coliform triggers occur during a 12-month period. During this interim period, Department staff completed 94 Level 2

assessments at more than 85 regulated PWSs. These assessments identified over 400 defects that have already been, or are being, corrected thereby improving public health protection. Estimated costs for services provided by the Department were approximately $3,000 per assessment for a total cost of $282,000.

The additional costs described in items 1—4 are more evident in medium and large water systems due to their size, age, complexity and number of customers at risk. Because these additional costs are variable, it is not possible to establish an average cost for these services. However, these additional costs were considered when determining the annual fees for the medium and large water systems.

The annual fees could have been based solely on the costs for the services that could be estimated. However, that approach would have resulted in a disproportionate impact on the smallest CWSs and would have failed to account for the additional costs incurred by the Department to provide services that cannot be readily estimated, such as those previously described, which result in substantially higher costs for medium and large water systems. Thus, the annual fees were developed to bear a reasonable relationship to the actual costs of the services provided while achieving a reasonable cost to the 11.3 million customers served.

As discussed in the preamble to the proposed rulemaking, the Department considered alternatives to assessing fees. However, the other options would have resulted in further disparity between the fees and Department costs for services for the very small and very large water systems. The Department retained the fee structure based on population served because it was the best option to comply with section 4(c) of the SDWA that directs the Board to establish fees for services that bear a reasonable relationship to the actual costs of the services provided. The Board emphasizes that the SDWA requires that the fees assessed by the Department "bear a reasonable relationship" to the actual costs of the services provided, not that the fees be the exact costs for the services provided.

The Department requested and will continue to request additional funding from the General Fund during the annual budget process to support the Program. The decrease in funding has caused the need for the new annual fees. If funding becomes available, the Department will evaluate the continuing need for the annual fees. As for the cost to customers of small versus medium and large water systems and businesses, the annual fees provide a reasonable relationship to the actual costs of the services provided by the Department when considering the minimum costs that can be estimated in advance and the cost of services that arise on a case-by-case basis previously discussed.

The Department has streamlined its operations in nearly all areas. In response to many years of staffing and resource shortfalls, the Program has been reduced to only those activities that are mandated by State and Federal laws, regulations and primacy requirements. If other efficiencies are developed in the future, the ongoing 3-year review of fees will be updated accordingly.

Regarding the other annual fees in subsection (a), fees for nontransient noncommunity water systems (NTNCWS) range from $100 to $1,000, annual fees for transient noncommunity water systems (TNCWS) range from $50 to $500, annual fees for bottled water systems are $2,500 and annual fees for vended, retail and bulk water systems are $1,000.

These fees were determined using the same criteria as previously discussed and are illustrated in the following table. The total hours for services that can be estimated were as follows:

- For NTNCWSs, the total hours ranged from 16 to 22 hours.
- For TNCWSs, the total hours ranged from 8 to 13 hours.
- For BVRBs, the total hours ranged from 21 to 26 hours.

Annual Fees vs. Cost Per Person Per Year

Population Served	*Annual Fee*	*Cost Per Person Per Year*	*Estimated Cost of Services*	*Cost Per Person Per Year*
NTNCWS				
100 or less	$100	$1.00—$4.00	$784	$7.84—$31.36
101—500	$250	$0.50—$2.48	$784	$1.57—$7.76
501—1,000	$500	$0.50—$1.00	$784	$0.78—$1.56
1,001—3,300	$750	$0.23—$0.75	$1,078	$0.33—$1.08
3,301 or more	$1,000	$0.30 or less	$1,078	$0.33 or less
TNCWS				
100 or less	$50	$0.50—$2.00	$392	$3.92—$15.68
101—500	$100	$0.20—$0.99	$392	$0.78—$3.88
501—1,000	$200	$0.20—$0.40	$392	$0.39—$0.78
1,001 or more	$500	$0.50 or less	$392	$0.39 or less
BVRB				
Bottled	$2,500	N/A	$1,274	N/A
Vended	$1,000	N/A	$1,029	N/A

Annual Fees vs. Cost Per Person Per Year				
Population Served	*Annual Fee*	*Cost Per Person Per Year*	*Estimated Cost of Services*	*Cost Per Person Per Year*
Retail	$1,000	N/A	$1,029	N/A
Bulk	$1,000	N/A	$1,029	N/A

§ 109.1404. Community and noncommunity water system permitting fees

A minor revision is made in this final-form rulemaking to replace "BVRB" with "bottled water or vended water system, retail water facility or bulk water hauling system facility," as BVRB is not a defined term.

Subsections (a) and (b) are revised in this final-form rulemaking to change the number of people in the population served for the smallest category of PWSs. The proposed rulemaking outlined the permit fees for CWSs and NCWSs serving populations of 25 to 100 people. The population numbers are revised in this final-form rulemaking to apply to CWSs and NCWSs serving a population of 100 people or less. These revisions are made because a PWS, which includes a CWS and an NCWS, is defined in § 109.1 as 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." In this Commonwealth, there are some PWSs that serve at least 15 service connections, but still serve a population of less than 25 people. Therefore, the population number is revised to account for those PWSs.

§ 109.1406. Permitting fees for bottled water and vended water systems, retail water facilities and bulk water hauling systems

Subsections (a) and (b) are revised in this final-form rulemaking to change the number of people in the population served for the smallest category of PWSs in the same manner as discussed in the revisions to § 109.1404 (relating to community and noncommunity water system permitting fees).

§ 109.1407. Feasibility study

This section is revised in this final-form rulemaking to change the number of people in the population served for the smallest category of PWSs in the same manner as discussed in the revisions to § 109.1404.

F. *Benefits, Costs and Compliance*

Benefits

One or more of these amendments will affect the 8,521 PWSs serving approximately 11.3 million people in this Commonwealth. The residents of this Commonwealth will benefit from: 1) the avoidance of a full range of adverse health effects from the consumption of contaminated drinking water such as acute and chronic illness, endemic and epidemic disease, waterborne disease outbreaks and death; 2) the continuity of a safe and adequate supply of potable water; and 3) the protection of public drinking water sources, which will result in maintaining the highest source water quality available, thereby minimizing drinking water treatment costs.

This final-form rulemaking will protect public health by providing increased protection from microbial pathogens and chemical contaminants in PWSs and strengthen system resiliency. Safe drinking water is vital to maintaining healthy and sustainable communities. Proactively avoiding incidents such as waterborne disease outbreaks can prevent loss of life, reduce the incidents of illness and reduce health care costs. Proper investment in PWS infrastructure and operations helps ensure a continuous supply of safe drinking water, enables communities to plan and build future capacity for economic growth, and ensures their long-term sustainability for years to come.

Source water assessment, protection and permitting requirements. The benefits of the source water assessment and protection program amendments are discussed in Section D under "amendments to source water assessment and protection programs."

In addition to those benefits, the amendments regarding new sources of supply in § 109.503 more clearly define the requirements regarding the proper order of the permitting process for developing a new PWS source. These clarifications are needed to help insure that the proper level of treatment is designed and installed in a timely manner, thereby resulting in less delay for permitting a new source that may be needed to meet public health protection requirements, or provide redundancy in the event of contamination of existing sources. These amendments should result in cost savings due to the avoidance of expensive permitting mistakes.

West Virginia and Virginia, also in EPA Region III, require source water assessments for new sources. In Virginia, the goal is to have a source water assessment completed by Virginia drinking water program staff before the operations permit is issued. Under West Virginia's new statute on source water protection, an assessment is included as part of a local source water protection plan and shall be completed by the water supplier prior to operation for a surface water source.

Regarding the development of local source water protection programs, Delaware and West Virginia have requirements for source water protection by statute. Under these amendments, the development of a local source water protection program will remain voluntary in this Commonwealth.

Turbidity and filtration requirements. Some of the amendments to the monitoring, calibration, recording and reporting requirements for the measurement of turbidity are more stringent than Federal requirements. These amendments will benefit more than 8 million people in this Commonwealth that are supplied water by PWSs using filtration technologies. These amendments are based on Department inspections and the evaluation of more than 1,250 filters through the FPPE program. These evaluations have documented that existing requirements are not sufficient to prevent turbidity spikes or the shedding of particles and microbial pathogens into the finished water, which puts consumers at risk of exposure to microbial pathogens. Costs related to waterborne disease outbreaks are discussed in Section D under "amendments to surface water treatment requirements."

Existing § 109.301(1)(i) requires turbidity monitoring of the CFE once every 4 hours. This period of intermittent sample review allows the production of significant volumes of water that are not monitored for compliance with

the maximum allowable turbidity limit. The amendments for CFE turbidity monitoring will require continuous monitoring and recording of the results every 15 minutes. This will also enable operators to identify problematic water quality trends and respond more quickly with necessary process control adjustments.

Health effects associated with microbial contaminants tend to be due to short-term, single dose exposure rather than long-term exposure. Therefore, if a short duration single turbidity exceedance of the existing maximum allowable turbidity limit occurs and goes unnoticed, consumers are at risk of exposure to microbial pathogens. By requiring continuous monitoring and recording of the results at least every 15 minutes for CFE at all filter plants, water suppliers will be better able to identify problems before an exceedance occurs and determine compliance with the maximum allowable turbidity limit at all times.

An additional revision will require all surface water filtration plants to implement a filter bed evaluation program that assesses the overall integrity of each filter to identify and correct problems before a turbidity exceedance or catastrophic filter failure occurs. Filters are the final barrier for removal of acute pathogens, and are therefore critical to public health protection. For many systems in this Commonwealth and across the United States, this infrastructure is aging, and the revision to require a physical inspection once per year is a necessary minimum preventative action item.

All of these filter plant performance provisions are part of a multibarrier approach to ensure treatment is adequate to provide safe and potable water to all users.

Thirty states responded to a survey conducted by the ASDWA on behalf of the Commonwealth. Twenty states require continuous turbidity monitoring and recording of CFE and 14 states require continuous IFE monitoring and recording for all filtration types.

Automatic alarms and shutdown capabilities. Filter plants are complex and dynamic. In response to many circumstances, the water plant operator shall take an immediate action to protect public health, such as when source water quality changes, chemical feed pumps malfunction, filters require backwashing or other unforeseen circumstances occur. Water plant operators are often required to perform other duties, which leave water plants unattended, and which limit operators' ability to respond immediately to treatment needs.

Automated alarms and shutdown capabilities play an important role in modern water treatment and public health protection. Many water suppliers have already taken advantage of readily available technology to reduce personnel costs while still providing safe water to their customers. The amendments will ensure that all surface water filtration plants have the minimum controls in place to ensure that operators are immediately alerted to major treatment problems. The amendments will also ensure that unmanned filter plants are automatically shut down when the plant is producing water that is not safe to drink, which prevents contaminated water from being provided to customers for extended periods of time. These alarms and shutdown capabilities will allow operators at attended and unattended filtration plants to promptly respond to the water quality problems and treatment needs of the plant. The automated plant shutdown is intended to prevent poor quality water from reaching customers, which will protect public health, reduce PWS costs related to corrective actions and issuing public notice, reduce costs to the community and maintain consumer confidence.

Based on an ASDWA survey, 12 states responded that they require filter plants to be attended at all times while in operation. Of the 12 states that require attended operation, 7 states have regulations that establish standards for plant automation, alarms and shutdowns. The Commonwealth's amendments are less stringent than 12 other states since attended operation is not being required. In addition, the amendments regarding plant automation, alarms and shutdown capabilities are less stringent than the standards from the Great Lakes—Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (10 States Standards). See Recommended Standards for Water Works (2012 Edition) Great Lakes—Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers.

Filter-to-waste requirements. The Department's FPPE program has evaluated approximately 1,250 filters since 1999. The results of these evaluations show that filters are most likely to shed turbidity, particles and microbial organisms at the beginning of a filter run when the filter is first placed into service following filter backwash or maintenance, or both. The amendments will require all filter plants that have the ability to filter-to-waste to do so following filter backwash or maintenance, or both, and before placing the filter into service. Filtering to waste will reduce the likelihood of pathogens passing through filters and into the finished drinking water.

All 30 states responding to an ASDWA survey require some of their filter plants to filter-to-waste. This final-form rulemaking is not expected to negatively affect this Commonwealth because implementation is not expected to require any capital improvements.

Strengthen resiliency through auxiliary power or alternate provisions. The revisions to system service and auxiliary power requirements will strengthen system resiliency and ensure that safe and potable water is continuously supplied to consumers and businesses. A continuous and adequate supply of safe drinking water is vital to maintaining healthy and sustainable communities.

PWS sources and treatment facilities in this Commonwealth are susceptible to emergency situations resulting from natural and manmade disasters. Examples of emergencies from recent years include tropical storms, flooding, high winds, ice, snow, industrial chemical plant runoff, pipeline ruptures and transportation corridor spills. These emergencies have resulted in significant impacts to consumers and businesses due to inadequate water quantity or quality, and in water supply warnings and advisories. Examples of emergencies that have occurred in this Commonwealth and demonstrate the benefit of these amendments are provided in Section D under "revisions to system service and auxiliary power requirements."

New annual fees and amended permit fees. To improve Program performance, this final-form rulemaking will supplement Commonwealth costs for administering the Program by filling the funding gap. The fees will total approximately $7.5 million annually and will account for nearly 50% of the Program's Commonwealth funding. The fees will augment the Program funding currently coming from the General Fund ($7.7 million).

The annual fees range from $250 to $40,000 for CWSs, $50 to $1,000 for NCWSs and $1,000 to $2,500 for

BVRBs. The fees will most likely be passed on to the 11.3 million customers of these PWSs as a user fee. Per person costs are expected to range from $0.35 to $10 per year, depending on the water system size.

Refer to Sections D and E for more information about the benefits and costs associated with the fees.

General permits. The amendments will establish the regulatory basis for the issuance of general permits for high volume, low risk modifications or activities to streamline the permitting process. General permits provide a cost-effective method for a PWS to obtain a permit and for the Department to regulate these activities.

Requirements for NCWSs. These amendments will clarify that NCWSs that are not required to obtain a permit shall still obtain Department approval of the facilities prior to construction and operation. The Department's public water supply well construction standards are measures that can prevent pollution from surface runoff and shallow aquifer zones that are above the source aquifer used for public water supply. Obtaining approval prior to constructing a source and associated water system facilities (such as treatment and storage) ensures the facility is planning and constructing a source and water system facilities that meet the Commonwealth's construction standards. This will avoid the costs for rehabilitating an improperly constructed source and avoid delays in obtaining approvals to operate the water system.

Address gaps in monitoring, reporting and tracking back-up sources. The amendments will address concerns related to gaps in the monitoring, reporting and tracking of back-up water sources and entry points. Per State regulations in §§ 109.301 and 109.303 and Federal regulations in 40 CFR 141.23(a), 141.24(f) and (h) and 141.26(a), all sources and entry points must be included in routine compliance monitoring to ensure water quality meets safe drinking water standards. Sources and entry points that do not provide water continuously are required to be monitored when used. However, monitoring requirements for back-up sources are not currently tracked, which means that verifiable controls are not in place to ensure that all sources and entry points meet safe drinking water standards. Some of these sources have not been used in 5 to 10 years and, therefore, the Department does not know the water quality for these sources. These concerns were most recently highlighted by the EPA's 2010 report. These amendments will ensure that all sources and entry points are monitored at least annually. PWSs will also be required to document in a comprehensive monitoring plan how routine compliance monitoring will include all sources and entry points.

The use of unmonitored sources and entry points could adversely impact basic water quality, including pH, alkalinity, turbidity, corrosivity and lead solubility, dissolved inorganic carbon and natural organic matter. Water suppliers may have limited information about how these sources or entry points will impact treatment efficacy and distribution system water quality. In addition, many sources may be offline due to poor water quality or MCL exceedances. The use of these back-up or emergency sources, without proper monitoring and verifiable controls, could lead to an increased risk to public health.

Treatment facilities and other appurtenances associated with these sources may also have gone unused and may no longer be in good working order. Back-up sources and entry points with unknown water quality or that are no longer in good working order provide a false sense of security in terms of system resiliency and emergency response. While the Department understands that many facilities are not used on a 24/7 basis, these amendments will ensure that all permitted sources and entry points are monitored at least annually, or when in use.

Compliance Costs

The general update provisions will increase public health protection and system resiliency. Safe drinking water is vital to maintaining healthy and sustainable communities. Proactively avoiding incidents such as waterborne disease outbreaks can prevent loss of life, reduce the incidents of illness and reduce health care costs. For example, it is estimated that the total cost of the May 2000 *E. coli* contamination incident in Walkerton, Ontario, was $64.5 million. Costs related to the 1993 waterborne outbreak of cryptosporidiosis in Milwaukee, WI, were $96.2 million. Waterborne disease outbreaks result in significant economic and health impacts and can have long-term impacts due to the loss of trust in PWSs.

Proper investment in PWS infrastructure and operations helps ensure a continuous supply of safe drinking water, enables communities to plan and build future capacity for economic growth, and ensures their long-term sustainability for years to come.

The fees are necessary to improve Program performance and will supplement Commonwealth costs for administering the Program. Program costs are directly tied to the resources needed to meet Federal and State mandates for minimum program elements and for the administration of an effective Program. Failure to meet minimum program elements may result in an increased risk to public health and the loss of primacy for the Program and associated Federal funding.

Source water protection and permitting requirements. Per the Department's records, approximately 30 new CWS sources are permitted each year. The Department estimates that an additional 8 hours of work completed for the CWS by a professional geologist will be needed to comply with the new source permitting amendments. This extra time will amount to approximately $1,176 per source permitted, based on current hourly rates charged by consulting firms.

Revisions to turbidity monitoring, recording and reporting requirements. Filter plants that need to install continuous monitoring and recording devices will need to spend about $3,000 to $4,000 per monitoring site (includes turbidimeter, controller and installation), with estimated annual costs for maintenance and calibration of $500 per plant. It is estimated that 21 filter plants will need to install this equipment on individual filters and 52 filter plants will need to install this equipment at their CFE monitoring sites.

• *IFE and CFE monitoring costs.* Costs have been derived from vendors of HACH brand turbidimeters, the most commonly used turbidimeter in this Commonwealth. If the water supplier prefers a different brand of equipment, the cost may change. Some per instrument cost savings may occur when multiple instruments are purchased. The following table, provided for illustrative purposes, shows costs related to installing and maintaining one HACH continuous monitoring and recording device:

White Light Turbidimeter (Analog) and Chart Recorder (Analog)			
Items	*Initial Cost for First Turbidimeter and Recorder*	*Estimated Annual Calibration and Maintenance Cost*	*Additional Turbidimeter and Recorder*
HACH 1720E and SC200 (analog signal)	$2,881		$2,881
Calibration Cylinder	$89		
20 NTU StablCal × (4) Calibrations		$556	
Lamp Assembly Replacement		$62	
Chart Recorder—Duel Pen	$1,657		$1,657
Chart Recorder Paper		$60	
Chart Recorder Replacement Pens		$79	
Installation	$1,000		
Total (not including tax and shipping)	$5,627	$757	$4,538

Laser Turbidimeter (Digital) and Chart Recorder (Analog)			
Items	*Initial Cost for First Laser Turbidimeter and Recorder*	*Estimated Annual Calibration and Maintenance Cost*	*Additional Turbidimeter and Recorder*
HACH TU5400 Laser Turbidimeter (includes flow sensor RFID and System Check)	$6,142		$6,142
HACH SC200 (includes flow sensor input, RFID, and Modbus))	$2,596		$2,596
Maintenance/Calibration Kit (includes primary standards)		$1,100 ($349 to replace the primary standards that are included in the kit)	
Replacement Desiccant Cartridge		$17	
Chart Recorder—Duel Pen	$1,657		$1,657
Chart Recorder Paper		$60	
Chart Recorder Replacement Pens		$79	
Installation	$1,000		
Total (not including tax and shipping)	$11,395	$1,256 (1st year) $505 (subsequent year)	$10,395

• *IFE monitoring.* This Commonwealth has 353 filter plants, of which 263 are currently required to continuously monitor and record their IFE and already have instrumentation installed. The amendments will require the remaining 90 filter plants to comply with the IFE monitoring requirements of which 69 already have the needed instrumentation. Therefore, 21 filter plants will need to install 1 or more monitoring and recording devices. The majority of these 21 filter plants only have 2 filters. The estimated cost for a water supplier having two filters to install IFE monitoring and recording equipment is expected to be $10,165 for white light turbidimeters or $21,790 for laser turbidimeters. The annual maintenance cost for the monitoring and recording equipment on two filters is estimated to be $757 for the white light turbidimeters or $505 for laser turbidimeters. The cumulative cost for the installation of the IFE monitoring and recording equipment at all 21 filter plants is estimated to be $213,465 for white light turbidimeters or $457,590 for laser turbidimeters. The cumulative cost for maintaining the monitoring and recording equipment at all 21 filter plants is estimated to be $15,897 per year for white light turbidimeters and $10,605 per year for laser turbidimeters.

• *CFE monitoring.* The majority of filter plants in this Commonwealth already continuously monitor and record their CFE. The exact number of filtration plants without this capability is not known, but based on a review of 90 filtration plants, it is estimated to be 15% of the 353 filter plants in this Commonwealth. The estimated cost to install CFE monitoring and recording equipment is $5,627 per plant for white light turbidimeters and recorders or $11,395 per plant for laser turbidimeters and recorders. The annual maintenance cost for the monitoring and recording equipment is estimated to be $757 for the white light turbidimeters or $505 for laser turbidimeters. The cumulative cost for an estimated 52 filter plants to install continuous monitoring and recording equipment is estimated to be $292,604 for white light or $592,540 for laser turbidimeters. The cumulative cost for maintaining the monitoring and recording equipment at all 52 filter plants is estimated to be $39,364 per year for white light turbidimeters or $26,260 per year for laser turbidimeters.

Annual filter inspection program. Significant additional costs are not expected to be associated with implementation of a filter inspection program.

Filter-to-waste requirements. No expected costs are associated with the filtering to waste amendments.

Automatic alarms and shutdown capabilities. Depending on options chosen, systems may incur $8,860 to

$11,980 per treatment plant with annual maintenance costs of $600. It is estimated that 317 of the 353 filter plants already meet these provisions and therefore will not incur any additional costs.

The following information is provided as example cost estimates related to adding automated alarm and shutdown capabilities at a small surface/GUDI water filtration plant. The costs include the monitor, controller and alarm dial-out system. It is assumed that the existing filtration plant will already have the chlorine residual analyzer, turbidity analyzer and clear-well level or other disinfection segment water level transmitter. These instruments are required to maintain compliance with existing regulations. An estimated cost for the equipment installation is provided. However, systems could save costs if they install the equipment using in-house staff or a local contract electrician.

The controller and monitor will include adjustable alarm set-points with time delay for a relay output which can be wired to the plant for shutdown of the filter system upon the following conditions: water levels needed to maintain adequate Giardia CT; high or low entry point chlorine residual; and high CFE turbidity.

The monitor and controller can be configured to send a pre-shutdown warning to allow operators the opportunity to go to the plant to try to resolve the problem before reaching the shutdown set-point. If the process value reaches the shutdown set-point, the filter plant shutdown command will occur and a shutdown alarm message will be sent to the plant operator by text message, e-mail or voice message.

If the facility already has an alarm dialer with capacity for three additional alarm inputs, the alarm dialer can be eliminated from the package. A deduction is shown for this on each equipment option. If the system is staffed continuously, then only alarm capabilities are necessary. This can be accomplished for a lower cost, or possibly no additional cost, depending on the capability of existing filter plant supervisory control and data acquisition equipment The Department describes the types of monitor and alarm systems, with associated cost estimates, as follows.

Option A—Monitor/alarm system with standard dial-up phone line and phonetics alarm dialer

1) One alarm control device with analog inputs for EP chlorine residual, CFE and IFE turbidity, and water levels needed to maintain adequate Giardia CT.

2) One Phonetics eight-channel alarm auto-dialer with power supply and battery backup. Requires standard dial-up telephone line connected to alarm dialer. Provides voice message alarm only.

3) One system wiring diagram—custom wiring diagram for specific analyzer types in use at owner's site. Exact terminal numbers will be provided based on owner's equipment to allow installation by local electrical contractor.

4) Furnish onsite calibration, programming and alarm configuration for all equipment and provide full onsite testing for all equipment including alarm testing and dial-out for plant designated phone numbers or pager numbers, or both.

5) Provide onsite operator training on maintenance and standardization of this equipment.

6) Four operation and maintenance manuals with complete instruction manuals for the system.

Total system price: $8,860
Delivery: 2-3 weeks (standard delivery)
Estimated installation cost: $2,000
Deduct for use of owner furnished alarm dialer: ($1,400)

Option B—Monitor/alarm system with standard dial-up phone line and alarm dialer

1) One alarm control device with analog inputs for EP chlorine residual, CFE and IFE turbidity, and water levels needed to maintain adequate Giardia CT.

2) One eight-channel alarm auto-dialer with power supply and battery backup. Requires standard dial-up telephone line connected to alarm dialer. Provides voice message alarm only.

3) One system wiring diagram—custom wiring diagram for specific analyzer types in use at owner's site. Exact terminal numbers will be provided based on owner's equipment to allow installation by local electrical contractor.

4) Furnish onsite calibration, programming and alarm configuration for all equipment and provide full onsite testing for all equipment including alarm testing and dial-out for plant designated phone numbers or pager numbers, or both.

5) Provide onsite operator training on maintenance and standardization of this equipment.

6) Four operation and maintenance manuals with complete instruction manuals for the system.

Total system price: $9,980
Delivery: 2-3 weeks (standard delivery)
Estimated installation cost: $2,000
Deduct for use of owner furnished alarm dialer: ($2,500)

Option C—Monitor/alarm system with cellular alarm dialer

1) One alarm control device with analog inputs for EP chlorine residual, CFE and IFE turbidity, and water levels needed to maintain adequate Giardia CT.

2) One cellular alarm notification system with eight-channel alarm input with power supply and battery backup. A dial-up telephone line is not required. Provides text and e-mail alarm notification.

3) One system wiring diagram—custom wiring diagram for specific analyzer types in use at owner's site. Exact terminal numbers will be provided based on owner's equipment to allow installation by local electrical contractor.

4) Furnish onsite calibration, programming and alarm configuration for all equipment and provide full onsite testing for all equipment including alarm testing and dial-out for plant designated phone numbers or pager numbers, or both

5) Provide onsite operator training on maintenance and standardization of this equipment.

6) Four operation and maintenance manuals with complete instruction manuals for the system.

Total system price: $9,700
Delivery: 2-3 weeks (standard delivery)
Estimated installation cost: $2,000

The Department estimates that 10% of the 353 filter plants in this Commonwealth will need to install a controller. The cumulative installation cost for an estimated 35 filter plants to comply with automated alarms and shutdown capability is estimated to be between $380,100 and $419,300.

Strengthened system resiliency through auxiliary power or alternate provisions. All CWSs will be required to review their existing emergency response plan and equipment to complete a USSP, using the form provided by the Department, to provide a consistent supply of adequate quantity and quality of water during emergency situations. The Department estimates that 400 CWSs do not even have an updated emergency response plan. CWSs that do not have a functional generator or do not have existing capability to meet this requirement through the alternate provision options may need to purchase a generator. The generator should be adequately sized so that it can supply power to critical treatment components necessary to supply safe and potable water. Therefore, the cost of the generator will be proportional to the size of the system (in other words, less expensive for small systems). It is difficult to predict system specific costs because of the various options to comply with the revisions. Estimates for small systems are $3,000 to $4,000 for the installation of a transfer switch, generator and concrete pad. Small systems may also explore the lower cost option to rent a portable generator for the following costs: compact portable generator = $70/day (daily rental cost) or $35/day (weekly rental cost); mobile towable generator = $320/day (daily rental cost) or $140/day (weekly rental cost). Costs for medium and large systems could range from $50,000 to $200,000 per treatment plant. Not all systems will require auxiliary power. Some systems may already meet reliability criteria through storage or interconnections. Several Mid-Atlantic states have already moved forward with mandatory requirements for auxiliary power supply, including New Jersey, New York and Connecticut.

To accommodate the variety of system specific differences that shall be addressed, the Department has included the option to submit a schedule for necessary improvements which have not been completed by the compliance deadlines in § 109.708(a) for submittal of the USSP. More specifically, this new approach requires certification of completion of the USSP form provided by the Department by the deadlines in § 109.708(a). However, if the USSP identifies that deficiencies exist which prevent a continuous supply of safe and potable water as specified in § 109.708(a), and the community water supplier has not addressed those deficiencies by the deadline for USSP submittal, a schedule will need to be submitted within 6 months which includes detailed corrective actions and corresponding completion dates. These significant revisions will help enable the cost for compliance with these provisions to be spread out over a longer period of time. Additionally, these revisions will provide water suppliers with even more flexibility in choosing the approach that best suits their particular water system, and adequate time to implement that plan in the most effective manner.

An estimated 30% of small systems (<3,300) or 485 systems may need to use rental services for a portable generator or install a back-up power supply. Assuming that 50% of the small systems will rent a generator and 50% will install their own equipment, the cumulative cost is estimated to be $1,115,620. The estimate for medium and large systems is that 20% or 65 systems may need to install a back-up power supply at a cumulative cost of $8.125 million Between proposed and final-form rulemaking, the Department expanded the combination of alternate provisions systems may use and included more flexibility to potentially spread the cost of compliance over a longer time period. Therefore, the cost estimates have been spread out over an anticipated 5-year period. Refer to the Regulatory Analysis Form for this final-form rulemaking for more information about estimated costs and savings.

Cost savings of avoiding interruption of continuous supply of safe and potable water were evaluated using the Water Health and Economic Analysis Tool software developed by the EPA. The Department ran the model for a scenario of a water system serving 2,500 customers and experiencing a water outage for 2 days. The model outcomes regarding economic consequences are summarized as follows:

- The value of water sales that would have occurred if there was not a disruption in water service is estimated to be $2,891.

- The value of additional operating costs incurred during the event, which may include bottled/replacement water, equipment, other remediation or miscellaneous costs is estimated at $24,775.

- Total economic impact on the water utility due to the 2-day outage (sum of the previous losses) is estimated at $27,666.

- Regional economic consequences for this same event are estimated at $926,486. This is the total value of economic activity lost among businesses directly affected by the water service disruption due to the contraction in business activity during the 2-day event.

If the water utility complies with the revisions, the potential cost savings for this 2-day outage, offsetting the costs to install additional auxiliary power, emergency interconnections with neighboring water systems or finished water storage, or both, were previously summarized. These costs would increase with each additional day that the water outage continues.

Additional costs savings to water systems and customers will be the prevention of dewatering of the distribution system piping and protection from damage to collapsed water lines (due to lack of ability to provide adequate quantity water to maintain positive pressure).

An estimated 250 BWAs occur each year and 25% or 63 BWAs are caused by water supply disruptions. The total annual cost savings to the regulated water systems is estimated at $1,742,958. However, the regional economic cost savings to businesses is estimated at more than $58 million. These cost savings will off-set the costs of improving system resiliency.

Compliance Assistance Plan

The Program uses the Commonwealth's Pennsylvania Infrastructure Investment Authority Program to offer financial assistance to eligible PWSs. This assistance is in the form of a low-interest loan, with some augmenting grant funds for hardship cases. Eligibility is based upon factors such as public health impact, compliance necessity, project affordability and operational affordability.

The Program has established a network of regional office and Central Office training staff that is responsive to identifiable training needs. The target audience in need of training may be either program staff or the regulated community.

In addition to this network of training staff, the Bureau of Safe Drinking Water has staff dedicated to providing training and outreach support services to PWS operators. The Department's web site also provides timely and useful information for treatment plant operators.

Paperwork Requirements

Paperwork requirements include:

• Updating a source water assessment report when a CWS's annual evaluation identifies changes to actual or potential sources of contamination.

• Reporting a failure of alarm or shutdown equipment.

• Developing and maintaining a distribution map for NCWSs.

• Developing and maintaining a comprehensive monitoring plan.

• For CWSs, completing the USSP form provided by the Department, which provides a form field template for a plan, and incorporating this completed plan into their existing emergency response plans. Water suppliers will also need to submit the accompanying USSP certification form to verify they have completed a USSP, and that it is available upon Department request.

• For CWSs which have identified deficiencies in their ability to provide uninterrupted system service, but have not corrected these deficiencies by the deadlines specified in § 109.708(a) submitting a detailed corrective action plan and corresponding schedule.

G. *Sunset Review*

The Board is not establishing a sunset date for these regulations since they are needed for the Department to carry out its statutory authority. The Department will continue to closely monitor these regulations for their effectiveness and recommend updates to the Board as necessary. Under this final-form rulemaking, the Department will evaluate the fees every 3 years and recommend amendments to address any disparity between Program income generated by the fees and the Department's cost of administering the Program.

H. *Regulatory Review*

Under section 5(a) of the Regulatory Review Act, on August 9, 2017, the Department submitted a copy of the notice of proposed rulemaking, published at 47 Pa.B. 4986, to IRRC and the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the House and Senate Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing this final-form rulemaking, the Department has considered all comments from IRRC and the public.

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on June 27, 2018, this final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on June 28, 2018, and approved this final-form rulemaking.

I. *Findings*

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) A public comment period was provided as required by law, and all comments were considered.

(3) These regulations do not enlarge the purpose of the proposal published 47 Pa.B. 4986.

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this order.

J. *Order*

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 Pa. Code Chapter 109, are amended by adding §§ 109.511, 109.717, 109.718 and 109.1401—109.1413, deleting § 109.305 and amending §§ 109.1, 109.5, 109.202, 109.204, 109.301—109.304, 109.416, 109.503, 109.505, 109.602, 109.606, 109.612, 109.701—109.706, 109.708, 109.713, 109.810, 109.1003, 109.1005, 109.1105, 109.1107, 109.1108, 109.1202—109.1204, 109.1206, 109.1302, 109.1303 and 109.1305—109.1307 to read as set forth in Annex A, with ellipses referring to the existing text of the regulations.

(*Editor's Note*: Section 109.716 was added in the final-form rulemaking published at 48 Pa.B. 2509 (April 28, 2018). Therefore, proposed §§ 109.716 and 109.1017 are renumbered as §§ 109.717 and 109.718, respectively, in this final-form rulemaking.)

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to the IRRC and the House and Senate Committees as required by the Regulatory Review Act (71 P.S. §§ 745.1—745.14).

(d) The Chairperson of the Board shall certify this order and Annex A, as approved for legality and form, and deposit them with the Legislative Reference Bureau, as required by law.

(e) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

PATRICK McDONNELL,
Chairperson

(*Editor's Note*: See 48 Pa.B. 4189 (July 14, 2018) for IRRC's approval order.)

Fiscal Note: Fiscal Note 7-521 remains valid for the final adoption of the subject regulations.

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart C. PROTECTION OF NATURAL RESOURCES

ARTICLE II. WATER RESOURCES

CHAPTER 109. SAFE DRINKING WATER

Subchapter A. GENERAL PROVISIONS

§ 109.1. Definitions.

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

* * * * *

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

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

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.

* * * * *

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.

Source water assessment—An evaluation documented in writing of the contamination potential of a drinking water source used by a public water system which includes identifying the contributing area to the water source, an inventory of potential contaminant sources and a determination of the susceptibility of the water source to contamination.

Source water protection area—A surface water intake protection area or a wellhead protection area, or both.

Source water protection program—A surface water intake protection program or a wellhead protection program, or both.

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.

Surface water intake protection area—The surface and subsurface area surrounding a surface-water intake supplying a public water system through which contaminants are reasonably likely to move toward and reach the water source. A surface water intake protection area must consist of up to three zones:

(i) *Zone A.* A 1/4-mile wide area inland from the edge of a waterway or surface water body and from an area 1/4-mile downstream of the intake to a 5-hour time-of-travel upstream.

(ii) *Zone B.* A 2-mile wide area inland from the edge of a waterway or surface water body and extending upstream to the 25-hour time-of-travel.

(iii) *Zone C.* For drainage basins greater than or equal to 100 square miles, the remainder of the upstream basin. Zone B and Zone C, if present, comprise the contributing area for the water source.

Surface water intake protection program—A comprehensive program designed to protect each surface water source used by a public water system from contamination.

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:

* * * * *

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 must consist of up to three zones:

(i) *Zone I.* The protective zone immediately surrounding a well, spring or infiltration gallery which shall be a 100-foot-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.* As hydrogeologic conditions warrant, the zone beyond Zone II that provides groundwater recharge to Zones I and II. Zone II and Zone III, if present, comprise the contributing area for the water source.

Wellhead protection program—A comprehensive program designed to protect each 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.

§ 109.5. Organization of chapter.

(a) This subchapter and Subchapters H and N (relating to laboratory certification; and drinking water fees) 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 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).

Subchapter B. MCLs, MRDLs OR TREATMENT TECHNIQUE REQUIREMENTS

§ 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 in 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) *Membrane filtration.*

(I) Beginning August 20, 2019, for all public water systems, the filtered water turbidity must be less than or equal to 0.15 NTU in at least 95% of the measurements taken each month under § 109.301(1).

(II) Beginning August 20, 2019, for all public water systems, the filtered water turbidity must be less than or equal to 1 NTU at all times, measured under § 109.301(1).

(D) *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) 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).

* * * * *

§ 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), 141.708 and 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.

(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.

(d) A public water supplier that obtains a permit or permit modification for filtration treatment for a surface water or GUDI source after August 18, 2018, shall submit documentation with the permit application relative to operational parameters which will be used to maintain *Giardia lamblia* inactivation throughout the expected range of operating conditions.

(e) A public water supplier using surface water or GUDI sources shall consult with the Department before making a significant change to its disinfection practice or operating treatment processes in a manner that may result in an inactivation level that is lower than the level needed to meet the *Giardia lamblia* inactivation requirements specified in § 109.202(c)(1)(ii) (relating to State MCLs, MRDLs and treatment technique requirements). As part of the consultation, the water supplier shall submit the following information to the Department:

(1) A completed disinfection profile and disinfection benchmark for *Giardia lamblia* and viruses.

(2) A description of the proposed change.

(3) An analysis of how the proposed change will affect the current level of disinfection.

Subchapter C. MONITORING REQUIREMENTS

§ 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 subparagraph (ii), a public water supplier:

(A) Shall determine and record the turbidity level of representative samples of the system's filtered water as follows until August 19, 2019:

(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 until August 19, 2019, 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. 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 the turbidity level of the combined filter effluent beginning August 20, 2019, using an analytical method specified in 40 CFR 141.74(a) (relating to analytical and monitoring requirements) and record the results at least every 15 minutes while the plant is operating. For systems that do not operate continuously, the turbidity level shall also be measured and recorded at start-up and immediately prior to shutting down the plant.

(D) 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.

(E) 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.

(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 (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) Until August 19, 2019, 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.

(iii) 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) 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. Beginning August 20, 2019, a public water supplier using surface water or GUDI sources and providing filtration treatment other than conventional or direct filtration shall conduct continuous monitoring of turbidity for each individual filter using an approved method under 40 CFR 141.74(a) and record the results at least every 15 minutes.

(iv) In addition to the requirements of subparagraphs (i)—(iii), a public water supplier shall conduct grab sampling or manual recording, or both, every 4 hours in lieu of continuous monitoring or recording if there is a failure in the continuous monitoring or recording equipment, or both. The public water supplier shall notify the Department within 24 hours of the equipment failure. Grab sampling or manual recording may not be substituted for continuous monitoring for longer than 5 working days after the equipment fails. The Department will consider case-by-case extensions of the time frame to comply if the water supplier provides written documentation that it was unable to repair or replace the malfunctioning equipment within 5 working days due to circumstances beyond its control.

(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 shall 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:

System Size (People)	*Samples/Week*
<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 until August 19, 2019:

(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 until August 19, 2019, 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 turbidity of the source water immediately prior to disinfection beginning August 20, 2019, using an analytical method specified in 40 CFR 141.74(a) and record the results at least every 15 minutes while the source is operating. If there is a failure in the continuous turbidity monitoring or recording equipment, or both, the supplier shall conduct grab sampling or manual recording, or both, every 4 hours in lieu of continuous monitoring or recording. The public water supplier shall notify the Department within 24 hours of the equipment failure. Grab sampling or manual recording may not be substituted for continuous monitoring for longer than 5 working days after the equipment fails. The Department will consider case-by-case extensions of the time frame to comply if the water supplier provides written documentation that it was unable to repair or replace the malfunctioning equipment within 5 working days due to circumstances beyond its control.

(E) 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.

(F) 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.

(G) 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) Until August 19, 2019, 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:

System Size (People)	*Samples/Day*
<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) Until August 19, 2019, 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.

* * * * *

(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) and (14), 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.

* * * * *

(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.

* * * * *

(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 activity 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.

(15) *Monitoring requirements for reserve entry points and entry points supplied by one or more reserve sources.* Beginning August 19, 2019, a water supplier using reserve sources or reserve entry points as defined and identified in the comprehensive monitoring plan in § 109.718(a) (relating to comprehensive monitoring plan) shall:

(i) Monitor reserve entry points at the initial frequencies specified in paragraphs (5)—(7) and (14).

(ii) Monitor permanent entry points at the initial frequencies specified in paragraphs (5)—(7) and (14) while the entry point is receiving water from a reserve source.

(iii) Conduct special monitoring as required by the Department under § 109.302.

§ 109.302. Special monitoring requirements.

(a) The Department may require a public water supplier to conduct monitoring in addition to that required under § 109.301 (relating to general monitoring requirements) if the Department has reason to believe the public water system is not in compliance with the action level, 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 under subsection (f) if the public water supplier demonstrates and the Department determines that the source of supply is not directly influenced by surface water.

§ 109.303. Sampling requirements.

(a) The samples taken to determine a public water system's compliance with MCLs, MRDLs or treatment technique requirements or to determine compliance with monitoring requirements shall be taken at the locations identified in §§ 109.301, 109.302, 109.1003, 109.1103, 109.1202 and 109.1303 and 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), inorganic contaminants listed by the EPA under 40 CFR 141.62 (relating to maximum contaminant levels for inorganic contaminants), radionuclide contaminants listed by the EPA under 40 CFR 141.66 (relating to maximum contaminant levels for radionuclides) and with the special monitoring requirements for unregulated contaminants under § 109.302(f) (relating to special monitoring requirements) shall be taken at each entry point to the distribution system which is representative of each source 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 during periods of normal operating conditions when water is representative of all sources being used.

(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 accordance 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) (relating to general monitoring requirements) 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) 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.

(i) Samples taken to determine compliance with this chapter shall be taken in accordance with a written comprehensive monitoring plan as specified in § 109.718 (relating to comprehensive monitoring plan). These plans are subject to Department review and revision.

§ 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) and the regulations promulgated thereunder.

(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.

(e) A water supplier shall calibrate all turbidimeters used for compliance monitoring using the procedure specified by the manufacturer. At a minimum, calibration with an EPA-approved primary standard shall be conducted at least every 90 days. The Department may extend this 90-day calibration frequency if the calibration due date coincides with a holiday or weekend, or during a water system emergency which prevents timely calibration.

§ 109.305. (Reserved).

Subchapter D. PUBLIC NOTIFICATION

§ 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 shall deliver to its customers. This report must 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) Each community water system shall do the following:

(i) Mail or otherwise directly deliver to each customer one copy of the annual CCR no later than the date specified in paragraph (2).

(ii) Mail a paper copy of the annual CCR to the Department no later than the date the water system is required to distribute the CCR to its customers.

(iii) 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 report delivery and recordkeeping), which are incorporated by reference.

(iv) 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 (iii).

(v) 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 Human Services, 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 health care facilities.

(vi) Make copies of its annual CCR available to the public on request.

(vii) 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.

(viii) 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.

Subchapter E. 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 Safe Drinking Water, Post Office Box 8467, 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 must 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.* Information describing new sources must include the items specified in clauses (A)—(F). The information specified in clauses (C) and (D) may not be more than 2 years old from the date the permit application is submitted unless the Department approves the use of data more than 2 years old. 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.

(A) A source water assessment of each new raw water source.

(B) A pre-drilling plan for a new groundwater source prepared and signed by a professional geologist licensed to practice in this Commonwealth. The pre-drilling plan shall be submitted and approved by the Department prior to well construction and conducting an aquifer test. At a minimum, the pre-drilling plan must include preliminary results of the source water assessment, a hydrogeologic description, an aquifer test monitoring plan and the proposed well construction design.

(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 discretion of the Department, these requirements may be altered for wells or wellfields pumping less than 100,000 gallons per day. The Department may require additional information to evaluate the safe or sustainable yield of the source. The safe or sustainable 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) An evaluation of the quality of the raw water from each new source. For groundwater sources, the evaluation shall be conducted at the conclusion of the constant rate aquifer test. 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 all of the following:

(I) VOCs for which MCLs have been established by the EPA 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 in § 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) IOCs, including asbestos, for which MCLs have been established by the EPA in 40 CFR 141.62 (relating to maximum contaminant levels for inorganic contaminants).

(III) Lead.

(IV) Copper.

(V) Total coliform and *E. coli* concentration.

(VI) SOCs, including dioxin and PCBs, for which MCLs have been established by the EPA in 40 CFR 141.61(c).

(VII) Gross Alpha (∝), radium-226, radium-228, uranium and Gross Beta (ß).

(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 in 40 CFR 143.3 (relating to secondary maximum containment levels).

(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) Turbidity.

(XIV) For groundwater sources, the monitoring specified in § 109.302(f) (relating to special monitoring requirements) if the Department determines that the source is susceptible to surface water influence.

(XV) Other contaminants that the Department determines necessary to evaluate the potability of the source.

(E) A hydrogeologic report for a new groundwater source. For wells, springs or infiltration galleries, this information must include a description of 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 and a Department approved delineation of the Zone 1 and Zone II wellhead protection areas. All information included in the source water assessment, in addition to the results of the water quantity and quality evaluations as specified in clauses (C) and (D), must be included in a hydrogeological report prepared and signed by a professional geologist licensed to practice in this Commonwealth.

(F) A description of the watershed topography and land uses within the watershed for a new surface water source.

(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 paragraph (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. Additionally, requests to change the permitted availability category of a source, purchased interconnect, treatment plant or entry point identified in the comprehensive monitoring plan in accordance with § 109.718 (relating to comprehensive monitoring plan) may be considered a minor change.

(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.* An application for a permit from the Department under this subchapter must be accompanied by a fee in the amount specified in Subchapter N (relating to drinking water fees).

(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.

§ 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) (Repealed).

(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 hypochlorite or ultraviolet light disinfection to reduce total coliform bacteria concentrations to undetectable levels in the finished water, and otherwise 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 submits a noncommunity water system application, including raw source water quality data, on forms acceptable to the Department, and receives Department approval of the facilities prior to construction or operation. The water supplier shall also submit a noncommunity water system application to the Department for proposed modifications to the system or a change of ownership, and receive Department approval prior to construction or operation.

(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)(D).

(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 and an operations permit under § 109.504 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).

§ 109.511. General permits.

(a) The Department may issue a general permit, instead of issuing a construction and operation permit under this subchapter, for a specific category of modifications if all of the following conditions are met:

(1) The modifications in the category are the same or substantially similar in nature.

(2) The modifications in the category are not prejudicial to the public health and can be adequately regulated utilizing standardized specifications and conditions.

(3) The modifications in the category will comply with the design and construction standards under Subchapter F (relating to design and construction standards).

(b) The Department may suspend, revoke, modify, reissue or terminate coverage under a general permit issued under this chapter for noncompliance with a condition of the permit, or upon a finding of a condition prejudicial to the public health.

(c) Issuance of a general permit does not exempt a person from compliance with this chapter.

Subchapter F. DESIGN AND CONSTRUCTION STANDARDS

§ 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, K, L and M 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, MRDL or treatment technique requirement.

(f) A public water system that provides filtration of surface water or GUDI sources must be equipped with alarm capabilities that meet the requirements of subsection (i) by August 19, 2019. The Department may approve in writing an alternate compliance schedule if the water supplier submits a written request with supporting documentation by August 19, 2019.

(g) A public water system that provides filtration of surface water or GUDI sources and that is not staffed

continuously while the plant is operating must be equipped with alarm and shutdown capabilities that meet the requirements of subsection (i) by August 19, 2019. The Department may approve in writing an alternate compliance schedule if the water supplier submits a written request with supporting documentation by August 19, 2019.

(h) In addition to public water systems covered under subsection (f) or (g), the Department may require a public water system to meet the requirements of subsection (i), according to a schedule set forth in a permit or order issued by the Department.

(i) Alarm and shutdown capabilities must conform to all of the following:

(1) Be set forth in the water system's operation and maintenance plan and set at a level no less stringent than the level needed for the facility to continuously maintain compliance with applicable MCLs, MRDLs and treatment technique requirements.

(2) Be established for the following parameters, at a minimum:

(i) Individual filter effluent turbidity and combined filter effluent turbidity for filter plants treating surface water or GUDI sources.

(ii) Entry point disinfectant residual.

(iii) Water levels to maintain adequate CT for Giardia inactivation.

(3) Be capable of notifying the available operator on duty of events triggering an alarm or plant shutdown.

§ 109.606. Chemicals, materials and equipment.

(a) Chemicals, materials or equipment which come in contact with the water or may affect the quality of the water may not be used unless the chemicals, materials or equipment are acceptable to the Department.

(b) Chemicals used by a public water supplier which come in contact with the water or may affect the quality of the water and which are certified for conformance with ANSI/NSF Standard 60 (Drinking Water Treatment Chemicals—Health Effects—NSF) or meet the food grade standards of the *United States Pharmacopeia* are deemed acceptable to the Department.

(c) Materials or equipment used in the construction or modification of a public water system, including waterline extensions, mechanical devices and drinking water treatment equipment, which come into contact with the water or may affect the quality of the water and which are certified for conformance with ANSI/NSF Standard 61 (Drinking Water System Components—Health Effects—NSF) are deemed acceptable to the Department.

(d) Drinking water treatment equipment used in the construction or modification of a public water system which comes into contact with the water or may affect the quality of the water and which is certified for inactivation, reduction or removal performance in conformance with PDWEP is deemed acceptable to the Department.

(e) Acceptable certification under subsection (b), (c) or (d) related to ANSI/NSF Standards 60 and 61 or PDWEP 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 or PDWEP, 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 or PDWEP.

(v) For equipment that is claimed to remove or reduce a specific contaminant, the name of the organization that meets the accreditation standards of the ANSI and that has certified the device to verify its inactivation, reduction or removal performance for that contaminant, the name of the testing protocol or standard used to test the device, a statement from the testing laboratory giving the date of the test, a summary of the results and the date, if any, by which the device shall be retested for verification of the removal or reduction performance to remain effective.

(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.

(f) 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.

§ 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 or components 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(e) (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.

Subchapter G. SYSTEM MANAGEMENT RESPONSIBILITIES

§ 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 the combined filter effluent 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.

(VIII) Beginning August 20, 2019, the number of filtered water turbidity measurements that are less than or equal to 0.15 NTU for membrane filtration technologies.

(IX) Beginning August 20, 2019, the date, time and values of any filtered water turbidity measurements exceeding 1 NTU for membrane filtration technologies.

(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 must 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.

(III) Instead of subclauses (I) and (II), beginning August 20, 2019:

(-a-) The number of source water turbidity measurements taken each month.

(-b-) For measurements in which the source water turbidity is greater than 1.0 NTU, the date, time and value for each occurrence that the turbidity exceeds 1.0 NTU and the subsequent date, time and value that the turbidity is less than or equal to 1.0 NTU.

(-c-) The date, time and highest turbidity value for each day the source water turbidity remains less than or equal to 1.0 NTU.

(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, significant interruption or breakdown in key water treatment processes.

(C) A 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) *Reporting requirements for disinfection byproducts.* In addition to the reporting requirements specified in paragraph (1), public water systems monitoring for disinfection byproducts under § 109.301(12) shall report the individual constituents for total trihalomethanes and haloacetic acids.

(11) *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)(iii).*

(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 under § 109.301(1)(iii) 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) must 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.

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(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).

(n) *Additional reporting requirements for systems using reserve sources, treatment plants or entry points.*

(1) Systems must provide a report each quarter certifying the number of days that a reserve source, treatment plant or entry point was used during the previous quarter

and estimating the expected timeframe the reserve source, treatment plant or entry point will remain in operation.

(2) Systems must provide notification to the department within ten days after a reserve source, treatment plant or entry point is no longer in use.

§ 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 must 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 source water protection program).

(10) Safety program.

(11) Emergency plan and operating procedures.

(12) Manufacturer's manuals.

(13) An interconnect, valve, blowoff, alarm and shutdown, and auxiliary power equipment 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.

§ 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) Water suppliers using conventional or direct filtration shall, prior to returning a filter to service, filter-to-waste for one full filter volume and until the filter bed effluent turbidity is less than 0.30 NTU at the normal production flow rate. Water suppliers may implement filter-to-waste for a period of time less than one full filter bed volume if an alternate operating technique is properly utilized to minimize the postbackwash turbidity spike to less than 0.15 NTU. Alternate techniques may include extended terminal subfluidization backwash, permitted addition of coagulant during the backwash or a post-backwash offline filter resting period. Water suppliers implementing alternate techniques shall keep records to document consistent and proper utilization of the technique.

(2) A water 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) A water 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) A system with filtration facilities shall implement a filter bed evaluation program, acceptable to the Department, which includes an evaluation of filter media, filter bed expansion, valves, surface sweep and sampling of filter turbidities over one entire filter run. The results of the evaluation shall be maintained on file and submitted to the Department upon request.

(c) A public water supplier required to install alarm or shutdown capabilities, or both, under § 109.602 (relating to acceptable design) shall comply with the following:

(1) Test the alarm and shutdown capabilities at least quarterly and document the results in the plant's operational log. To avoid unnecessary disruptions in treatment, simulated testing of shutdown capabilities is acceptable.

(2) For any failures of alarm or shutdown equipment:

(i) Ensure the plant is adequately staffed until the equipment is operational.

(ii) Notify the Department as soon as possible of any failure that cannot be corrected within 24 hours.

(iii) Restore the equipment to operation within 5 working days of the failure unless a longer period of time is approved by the Department.

(d) Reserve sources, treatment plants or entry points identified in § 109.718(a)(1)(ii) (relating to comprehensive monitoring plan) may not be used without prior written approval from the Department. Approval to use a reserve source, treatment plant or entry point will expire upon submission of the notification specified in § 109.701(n)(2) (relating to reporting and recordkeeping). Department approval will be contingent on all of the following, at a minimum:

(1) Completion of source water monitoring in accordance with § 109.503(a)(1)(iii)(D)(I)—(XI), (XIII) and (XV) (relating to public water system construction permits) prior to use. The Department will consider previous source water monitoring results for samples that were collected within the most recent 3 years. Compliance monitoring in accordance with § 109.301(15) (relating to general monitoring requirements) for reserve entry points shall continue so long as the reserve source, treatment plant or entry point is in use.

(2) Documentation that source water monitoring specified in § 109.503(a)(1)(iii)(D)(XII) and (XIV) has been completed.

(3) A determination and certification by the water supplier, after reviewing monitoring data obtained in accordance with paragraph (1) that use of the reserve source, treatment plant or entry point will not adversely impact treatment efficacy and that an adequate treatment strategy is in place so that the finished water will comply with all applicable drinking water standards.

§ 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) and the regulations promulgated thereunder 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.

§ 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) An inspection of portions of the source water protection area necessary to identify and evaluate actual and potential sources of contamination.

(i) An inspection of a source water 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.

(ii) 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.

(iii) Revisions to the source water assessment if the inspection identified changes to actual or potential sources of contamination.

(2) Evaluation of 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.

(6) The results of the annual system evaluation must be documented and made available to the Department upon request.

(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 systems 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.

§ 109.706. System map.

(a) A public water system that is not a bottled or vended water system or a retail water facility or a bulk water hauling system shall prepare and maintain on file a detailed map of the water system. A copy of the map shall be submitted to the Department upon request.

(b) At a minimum the map must include all of the following:

(1) Source and treatment plant locations.

(2) Size and location of storage facilities.

(3) Pump station locations.

(4) Size, location and construction material of pipes.

(5) Pressure zones.

(6) Interconnections with other public water systems.

(7) Monitoring locations.

(c) The map shall be reviewed by the water supplier at least annually and updated as necessary. Water suppliers may meet this requirement by maintaining a calibrated hydraulic model instead of paper maps.

§ 109.708. System service and auxiliary power.

(a) *System service.* No later than the dates specified in paragraphs (1)—(3), a community water supplier shall submit a certification on a certification form provided by the Department verifying completion of the uninterrupted system service plan (USSP) which was completed using the USSP form provided by the Department to ensure operation of the sources, treatment and pumping facilities necessary to ensure that safe and potable water is continuously supplied to users in accordance with subsection (b) or (c), or both. A continuous supply of safe and potable water is one that meets all applicable MCLs, MRDLs and treatment techniques specified in § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements) and is sufficient to maintain system pressure specified in § 109.607 (relating to pressures) throughout the distribution system.

(1) By August 19, 2019, for systems serving 3,300 or fewer persons.

(2) By August 17, 2020, for systems serving 3,301—10,000 persons.

(3) By August 17, 2021, for systems serving greater than 10,000 persons.

(b) *Auxiliary power and alternate provisions.* System service must be provided through one or more of the following methods:

(1) Connection to at least two independent power feeds from separate substations.

(i) The power feeds may not be located in the same conduit or supported from the same utility pole.

(ii) If overhead power feeds are used, the power feeds may not cross or be located in an area where a single plausible occurrence (for example, a fallen tree) could disrupt both power feeds.

(2) Onsite auxiliary power sources (that is, generators or engines).

(3) A combination of alternate provisions, such as finished water storage capacity, interconnections with another public water system, portable generators and other system specific alternate provisions to meet the requirements of subsection (a).

(c) *Corrective action schedule.* If the USSP and certification form completed in subsection (a) identify that deficiencies exist which prevent a continuous supply of safe and potable water as specified in subsection (a), and these deficiencies are not corrected by the dates specified in subsection (a)(1)—(3), a community water supplier shall submit to the Department, within 6 months after the dates specified in subsection (a)(1)—(3), a schedule which includes detailed corrective actions to address these deficiencies, including corresponding completion dates. The schedule for completion of each corrective action must be commensurate with the complexity of the associated corrective action.

(d) *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.

§ 109.713. Source water protection program.

(a) For water suppliers seeking to obtain Department approval for a source water protection program, the source water protection program shall, at a minimum, consist of all of the following elements:

(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 source water protection activities.

(2) Public participation and education activities to promote awareness and encourage local support of source water protection activities.

(3) A map depicting the source water protection areas that were delineated in accordance with the methodology provided by the Department.

(4) A source water assessment for each source. If a source water assessment has not been previously conducted, identification of the source's susceptibility to potential and existing sources of contamination within each source's contributing area conducted in accordance with the methodology provided by the Department.

(5) Development and implementation of source water 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 source water protection area by the water system.

(ii) Adoption of municipal ordinances or regulations controlling, limiting or prohibiting future potential sources of contamination within the source water protection area.

(iii) Adoption of municipal ordinances or regulations establishing design and performance standards for potential sources of contamination within the source water protection area.

(iv) Transfer of development rights within the source water protection area to land outside of the source water protection area.

(v) For groundwater sources, 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 source and emergency responses to incidents that may impact water supply source quality.

(7) Provisions to ensure the protection of sites identified for development as new water sources.

(b) Water suppliers with an approved source water protection program shall review and update the program on an annual basis to ensure it is accurate and reflects current activities, and shall complete and submit the current version of the Department-provided annual update form.

§ 109.717. Significant deficiencies.

The following apply to significant deficiencies identified by the Department:

(1) Within 30 days of receiving written notification, the public water supplier shall consult with the Department regarding appropriate corrective actions unless the Department directs the system to implement a specific corrective action.

(2) The public water supplier shall respond in writing to significant deficiencies no later than 45 days after receipt of written notification from the Department, indicating how and on what schedule the system will address significant deficiencies.

(3) Corrective actions shall be completed in accordance with applicable Department plan review processes or other Department guidance or direction, if any, including Department-specified interim measures.

(4) The public water supplier shall correct significant deficiencies identified within 120 days of receiving written notification from the Department, or earlier if directed by the Department, or according to the schedule approved by the Department.

(5) 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 public water supplier shall comply with these interim measures as well as with any schedule specified by the Department.

(6) The public water supplier shall request and obtain approval, in writing, from the Department for any subsequent modifications to a Department-approved corrective action plan and schedule.

§ 109.718. Comprehensive monitoring plan.

(a) By August 19, 2019, a community or nontransient noncommunity water supplier shall develop a comprehensive monitoring plan to assure that all sources, purchased interconnections and entry points are included in compliance monitoring at the entry points and within the distribution system. The plan must contain at least all of the following:

(1) A list of all sources, purchased interconnections, treatment plants and entry points permitted under this chapter. The availability of each source, treatment plant and entry point must be designated as either permanent or reserve. The availability of each purchased interconnection must be designated as either permanent or emergency. Permanent, reserve and emergency availability categories are as follows:

(i) *Permanent*—A source, treatment plant, entry point or purchased interconnection permitted under this chapter that is used on a regular basis. Permanent facilities must be included in compliance monitoring. Permanent entry points receiving water from a reserve source must be monitored in accordance with § 109.301(15) (relating to general monitoring requirements).

(ii) *Reserve*—A source, treatment plant or entry point permitted under this chapter which is not used on a regular basis, but remains on standby to augment or supplement permanent sources, treatment plants or entry points. A reserve source, treatment plant or entry points may not be used without prior written approval from the Department under § 109.703(d) (relating to facilities operation).

(iii) *Emergency*—A purchased interconnection permitted under this chapter which is used during temporary emergency situations.

(2) A schematic of all sources and associated treatment plants and entry points, purchased interconnections and the relative locations of the points of entry into the distribution system.

(3) For each entry point, a description of normal operating conditions, including whether the entry point provides water continuously, whether each source contributing to the entry point provides water continuously and whether sources are alternated or blended. For alternated sources, include the operation schedule for each source. For blended sources, include a description of the range of blending ratios.

(4) A description of how all permanent sources and permanent entry points are included in compliance monitoring.

(b) The plan must include the sample siting plans and monitoring plans required under other sections of this chapter, including the total coliform sample siting plan

required under § 109.701(a)(5) (relating to reporting and recordkeeping), the monitoring plan for disinfectants, DBPs and DBP precursors required under § 109.701(g), the lead and copper sample site location plan required under § 109.1107(a)(1) (relating to system management responsibilities) and the source water sampling plan required under § 109.1202(h) (relating to monitoring requirements).

(c) The water supplier shall review and update the plan at least annually and as necessary to reflect changes to facilities or operations. The date of each update must be recorded on the plan.

(d) By August 19, 2019, the water supplier shall submit the initial plan to the Department. The water supplier shall review the plan annually and submit an updated plan to the Department, if revisions are made. These plans are subject to Department review and revision.

Subchapter H. LABORATORY CERTIFICATION

§ 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 any individual tap sample result exceeds the action level value specified in § 109.1102(a) (relating to action levels and treatment technique requirements), 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.

Subchapter J. BOTTLED WATER AND VENDED WATER SYSTEMS, RETAIL WATER FACILITIES AND BULK WATER HAULING SYSTEMS

§ 109.1003. Monitoring requirements.

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(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) 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.

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§ 109.1005. Permit requirements.

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(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 technique requirements).

(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 must 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(e) 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 Safe Drinking Water, 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 must include:

* * * * *

(i) *Permit fees.* An application for a permit from the Department under this subchapter must be accompanied by a fee in the amount specified in Subchapter N (relating to drinking water fees).

Subchapter K. LEAD AND COPPER

§ 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.* Until August 18, 2018, a community water supplier may submit a written request for an amended construction permit to the Department if the system satisfies the conditions under subparagraphs (i)—(iv). A request for an amended construction permit under this paragraph must describe the proposed change in sufficient detail to allow the Department to adequately evaluate the proposal.

(i) The system is a small water system.

(ii) The sources of supply for the system are not surface water sources.

(iii) Except for corrosion control treatment, the sources require treatment no greater than disinfection to provide water of a quality that meets the MCLs and treatment technique requirements established under Subchapter B (relating to MCLs, MRDLs or treatment technique requirements).

(iv) The proposed corrosion control treatment is limited to alkalinity or pH adjustment, or both.

(2) *Nontransient noncommunity water system permits.* Until August 18, 2018, a nontransient noncommunity water supplier is not required to obtain a construction permit or permit amendment under subsection (b) if the system satisfies the following specifications and conditions:

(i) The system is a small water system.

(ii) The sources of supply for the system are not surface water sources.

(iii) Except for corrosion control treatment, the sources require treatment no greater than disinfection to provide water of a quality that meets the MCLs and treatment technique requirements established under Subchapter B.

(iv) The proposed corrosion control treatment is limited to alkalinity or pH adjustment, or both.

(v) The water supplier files a brief description of the proposed treatment, including recommended water quality parameter performance requirements for optimal corrosion control treatment as specified in § 109.1102(b)(5), on forms acceptable to the Department. Descriptions of modifications shall be submitted and approved by the Department prior to construction.

(3) Beginning August 19, 2018, community water systems and nontransient noncommunity water systems required to install optimal corrosion control treatment in accordance with § 109.1102(b) shall obtain a construction and operation permit.

(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).

§ 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 analytical methods used.

(G) The results of analyses conducted in accordance with this subchapter for lead and copper tap monitoring.

(H) The sample location.

(I) The name, address and identification number of the certified laboratory performing the analysis.

(ii) *Water quality parameter monitoring results.* The following minimum information is required when reporting water quality parameter results to the Department:

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§ 109.1108. Fees.

An application for the review of a corrosion control treatment feasibility study under § 109.1102(b)(3) (relating to action levels and treatment technique requirements), a permit from the Department under this subchapter or a Department designation of optimal corrosion control treatment performance requirements in accordance with § 109.1102(b)(2)(ii) must be accompanied by a fee in the amount specified in Subchapter N (relating to drinking water fees).

Subchapter L. LONG-TERM 2 ENHANCED SURFACE WATER TREATMENT RULE

§ 109.1202. Monitoring requirements.

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(l) *Source water sample locations for plants with chemical treatment.* 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) *Source water sample locations for systems with 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) *Source water sample locations for systems with 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 shall 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.

§ 109.1203. Bin classification and treatment technique requirements.

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(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 compo-

nents), 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.

(g) *Failure to meet treatment credit.* Failure by a system in any month to achieve treatment credit by meeting criteria in § 109.1204 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.

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§ 109.1204. Requirements for microbial toolbox components.

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(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)(iii) (relating to general monitoring requirements), as applicable.

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§ 109.1206. Reporting and recordkeeping requirements.

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(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)—(viii) for each *Cryptosporidium* analysis. Systems shall report, in a form acceptable to the Department, data elements in subparagraphs (ix)—(xi) 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 occurred.

(viii) The concentration of oocysts per liter.

(ix) 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.

(x) 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.

(xi) 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.

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Subchapter M. ADDITIONAL REQUIREMENTS FOR GROUNDWATER SOURCES

§ 109.1302. Treatment technique requirements.

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(c) *Groundwater systems with source water E. coli contamination or significant deficiencies.*

(1) A groundwater system with an *E. coli*-positive groundwater source sample collected under § 109.505(a)(3) (relating to requirements for noncommunity water systems), § 109.1303(a) or § 109.1304(a) 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.

(3) A groundwater system with a significant deficiency or an *E. coli*-positive source water sample collected under § 109.1303(a) or § 109.1304(a) shall comply with § 109.717 (relating to significant deficiencies).

§ 109.1303. Triggered monitoring requirements for groundwater sources.

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(h) For an *E. coli*-positive source water sample collected under subsection (a) that is not invalidated under subsection (g), the system shall comply with Tier 1 public notification requirements under § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice).

(i) Systems providing water to another public water system receiving notification under subsection (e) shall comply with subsection (a).

§ 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 and notify the Department within 24 hours of the equipment failure that grab sampling is being conducted. Grab sampling or manual recording may not be substituted for continuous monitoring for longer than 5 working days after the equipment fails unless a longer period of time is approved by the Department.

(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 and record the results 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.

§ 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 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 Safe Drinking Water, Post Office Box 8467, 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.

§ 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 recordkeeping):

(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 of notice). A breakdown in treatment occurs whenever the system fails to meet, for greater than 4 hours of operation, 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) (relating to triggered monitoring requirements for groundwater sources; and assessment source water monitoring). 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:

(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.

Subchapter N. DRINKING WATER FEES

Sec.

§ 109.1401. General.

(a) This subchapter establishes fees for each public water system for services provided by the Department to implement the act, retain primacy, and protect the public health and safety.

(b) This subchapter applies to each public water system.

§ 109.1402. Annual fees.

(a) *Annual fee.* Beginning January 1, 2019, each public water system shall pay an annual fee as set forth in this section.

(1) For community water systems, the annual fees are as follows:

Population Served	*Fee*
100 or less	$250
101—500	$500
501—1,000	$1,000
1,001—2,000	$2,000
2,001—3,300	$4,000
3,301—5,000	$6,500
5,001—10,000	$10,000
10,001—25,000	$20,000
25,001—50,000	$25,000
50,001—75,000	$30,000
75,001—100,000	$35,000
100,001 or more	$40,000

(2) For nontransient noncommunity water systems, the annual fees are as follows:

Population Served	*Fee*
100 or less	$100
101—500	$250
501—1,000	$500
1,001—3,300	$750
3,301 or more	$1,000

(3) For transient noncommunity water systems, the annual fees are as follows:

Population Served	*Fee*
100 or less	$50
101—500	$100
501—1,000	$200
1,001 or more	$500

(4) For bottled water or vended water systems, retail water facilities or bulk water hauling systems, the annual fees are as follows:

Type	*Fee*
Bottled—in-State	$2,500
Bottled—out-of-State	$2,500
Vended	$1,000
Retail	$1,000
Bulk	$1,000

(b) *Basis for "population served."* The "population served" shall be based on the Department's public water system inventory at the time of billing.

(c) *Payment of fees.*

(1) All fees payable under this section are due according to the following schedule:

Population Served	*Submit Annual Fee By*
3,301 or more	March 31
501—3,300	June 30
101—500	September 30
100 or less	December 31

(2) New systems that begin operation after January 1 will not be assessed an annual fee for partial calendar year periods. Annual fees shall be payable on or before the date indicated in paragraph (1) of the next calendar year, and each year thereafter.

(3) For annual fees of $6,500 or more, a public water system may request to divide its annual fee payment into equal quarterly installments by submitting a written request to the Department. Quarterly installments shall be due on March 31, June 30, September 30 and December 31.

§ 109.1403. Monitoring waiver fees.

(a) *New waivers.* An application for a new waiver from the monitoring requirements in §§ 109.301 and 109.302 (relating to general monitoring requirements; and special monitoring requirements) for a single source must be accompanied by a fee as follows:

Waiver Type	*New Waiver Fee*
VOC use waiver	$100
SOC use waiver	$100
SOC susceptibility waiver	$300
IOC waiver	$100

(b) *Waiver renewals.* An application for a waiver renewal from the monitoring requirements in §§ 109.301 and 109.302 for a single source must be accompanied by the appropriate fee as follows:

(1) For renewal applications with no changes in land uses or potential sources of contamination, the fee is $50.

(2) For renewal applications with changes in land uses or potential sources of contamination, the fee will be based on the type of waiver and the fee for that waiver set forth in subsection (a).

(c) *Waiver fees for systems with more than one source.*

(1) For systems with multiple sources all in the same contributing area, the fee will be as indicated in subsection (a) or (b), as applicable. For groundwater systems, the contributing 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.

(2) For systems with sources in two or more contributing areas, the fee will be as indicated in subsection (a) or (b), as applicable, for the first source, plus 1/2 of the applicable fee for each additional contributing area in which a source is located.

§ 109.1404. Community and noncommunity water system permitting fees.

(a) An application for a construction permit or a major construction permit amendment under § 109.503 (relating to public water system construction permits), except for an application for a bottled water or vended water system, retail water facility or bulk water hauling system facility under § 109.1005 (relating to permit requirements), must be accompanied by a fee as follows:

Population Served	*Fee*
100 or less	$300
101—500	$600
501—3,300	$1,000
3,301—10,000	$2,500
10,001—50,000	$5,000
50,001—100,000	$7,500
100,001 or more	$10,000

(b) A written request for a minor construction permit amendment under § 109.503, except for a change in legal status must be accompanied by a fee as follows:

Population Served	*Fee*
100 or less	$100
101—500	$250
501—3,300	$500
3,301—10,000	$750
10,001—50,000	$1,000
50,001—100,000	$2,500
100,001 or more	$5,000

(c) A written request for a change in legal status, such as a transfer of ownership, incorporation or merger, must be accompanied by a fee of $100.

(d) A written request for a new or amended operations permit under § 109.504 (relating to public water system operation permits) must be accompanied by a fee of $50.

(e) A written request for an emergency permit must be accompanied by a fee of $100.

§ 109.1405. Permitting fees for general permits.

Fees for coverage under a general permit under § 109.511 (relating to general permits) will be established in the general permit. Fees may not exceed $500. An eligible person shall submit to the Department the applicable fee before the Department approves coverage under the general permit for that person.

§ 109.1406. Permitting fees for bottled water and vended water systems, retail water facilities and bulk water hauling systems.

(a) An application for a construction permit or a major construction permit amendment under § 109.1005 (relating to permit requirements), except an out-of-State facility or system using finished water as its sole source of water, must be accompanied by a fee as follows:

System Type	*Fee*
Bottled water system (population served)	
100 or less	$500
101—500	$750
501—3,300	$1,000
3,301—10,000	$2,500
10,001—50,000	$5,000
50,001—100,000	$7,500
100,001 or more	$10,000
Vended water system	$100
Retail water facility	$250
Bulk water hauling system	$500

(b) An application from a bottled water system, retail water facility or bulk water hauling system whose sole source of water is finished water purchased from another public water system must be accompanied by a fee as follows:

System Type	*Fee*
Bottled water system (population served)	
100 or less	$100
101—500	$250
501—3,300	$500
3,301—10,000	$750
10,001—50,000	$1,000
50,001—100,000	$2,500
100,001 or more	$5,000
Retail water facility	$100
Bulk water hauling system	$100

(c) An application from an out-of-State bottled water system submitting proof of out-of-State approval under § 109.1005 must be accompanied by a fee of $1,000.

(d) A written request for a minor construction permit amendment under § 109.1005, except for a change in legal status, must be accompanied by a fee as follows:

System Type	*Fee*
Bottled water system	$1,000
Vended water system	$100
Retail water facility	$100
Bulk water hauling system	$100

(e) A request for a change in legal status, such as a transfer of ownership, incorporation or merger, must be accompanied by a fee of $100.

(f) A written request for a new or amended operations permit must be accompanied by a fee of $50.

(g) A written request for an emergency permit must be accompanied by a fee of $100.

§ 109.1407. Feasibility study.

An application for a review of a feasibility study or pilot study must be accompanied by a fee as follows:

Population Served	*Fee*
100 or less	$300
101—500	$600
501—3,300	$1,000
3,301—10,000	$2,500
10,001—50,000	$5,000
50,001—100,000	$7,500
100,001 or more	$10,000

§ 109.1408. Noncommunity water system application for approval.

For a noncommunity water system that is released from the obligation to obtain a construction and an operation permit under § 109.505 (relating to requirements for noncommunity water systems), the application for approval required under § 109.505(a)(2)(ii) must be accompanied by a fee of $50.

§ 109.1409. Noncommunity water system 4-log permit.

For noncommunity water systems demonstrating 4-log treatment of viruses under Subchapter M (relating to additional requirements for groundwater sources), the permit application must be accompanied by a fee of $50.

§ 109.1410. Payment of fees.

All fees under this subchapter shall be payable by a check to the "Commonwealth of Pennsylvania" or through a secure computer application provided by the Department.

§ 109.1411. Disposition of funds.

All fees shall be paid into the State Treasury into a special restricted revenue account in the General Fund known as the Safe Drinking Water Account administered by the Department for use in protecting the public from the hazards of unsafe drinking water and which funds are hereby appropriated to the Department for the purposes as are authorized in the act.

§ 109.1412. Failure to remit fees.

(a) If fees are not remitted as required under § 109.1402 (relating to annual fees), interest will accrue on the entire amount from the original date payment was due at a rate of 6% per annum until payment is remitted.

(b) For any system delinquent in payment of fees in excess of 180 days, the Department may suspend technical services provided by the Department until payment is remitted.

§ 109.1413. Evaluation of fees.

At least every 3 years, the Department will provide the EQB with an evaluation of the fees in this chapter and recommend regulatory changes to the EQB to address any disparity between the program income generated by the fees and the Department's cost of administering the program with the objective of ensuring fees meet all program costs and programs are self-sustaining. The evaluation will include an assessment of program complement and workload.

[Pa.B. Doc. No. 18-1263. Filed for public inspection August 17, 2018, 9:00 a.m.]

Title 28—HEALTH AND SAFETY

DEPARTMENT OF HEALTH

[28 PA. CODE CH. 1211]

Medical Marijuana; Clinical Registrants and Academic Clinical Research Centers; Temporary Regulations

The Department of Health (Department) is publishing temporary regulations in Chapter 1211 (relating to clinical registrants and academic clinical research centers—temporary regulations) to read as set forth in Annex A. The temporary regulations are published under the Medical Marijuana Act (act) (35 P.S. §§ 10231.101—10231.2110), as amended by the act of June 22, 2018 (P.L. 322, No. 43). Section 2004 of the act (35 P.S. § 10231.2004) specifically allows the Department to promulgate temporary regulations relating solely to sections 2000—2004 of the act (35 P.S. §§ 10231.2000—10231.2004), regarding academic clinical research centers and clinical registrants, that are not subject to sections

201—205 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201—1205), known as the Commonwealth Documents Law, the Regulatory Review Act (71 P.S. §§ 745.1—745.14) and sections 204(b) and 301(10) of the Commonwealth Attorneys Act (71 P.S. §§ 732-204(b) and 732-301(10)).

Chapter 1211 pertains to clinical registrants and academic clinical research centers in this Commonwealth who wish to participate in the Medical Marijuana Program. The temporary regulations for clinical registrants and academic clinical research centers will expire on March 18, 2020.

Interested persons are invited to submit written comments, suggestions or objections regarding the temporary regulations to John J. Collins, Office of Medical Marijuana, Department of Health, Room 628, Health and Welfare Building, 625 Forster Street, Harrisburg, PA 17120, (717) 547-3047, RA-DHMedMarijuana@pa.gov. Persons with a disability who wish to submit comments, suggestions or objections regarding the temporary regulations or who require an alternative format of the temporary regulations (for example, large print, audiotape or Braille) may do so by using the previous contact information. Speech and/or hearing impaired persons may call the Pennsylvania AT&T Relay Service at (800) 654-5984 (TDD users) or (800) 654-5988 (voice users).

RACHEL L. LEVINE, MD,
Secretary

(*Editor's Note*: Title 28 of the *Pennsylvania Code* is amended by adding temporary regulations in §§ 1211.21—1211.37 to read as set forth in Annex A.)

Fiscal Note: 10-217. No fiscal impact; (8) recommends adoption.

Annex A

TITLE 28. HEALTH AND SAFETY

PART IX. MEDICAL MARIJUANA

CHAPTER 1211. CLINICAL REGISTRANTS AND ACADEMIC CLINICAL RESEARCH CENTERS—TEMPORARY REGULATIONS

Sec.

§ 1211.21. Definitions.

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

ACRC—An accredited medical school in this Commonwealth that operates or partners with an acute care hospital licensed and operating in this Commonwealth.

Accredited medical school—An institution that is:

(i) Located in this Commonwealth.

(ii) Accredited by the Liaison Committee of Medical Education or the Commission on Osteopathic College Accreditation.

Acute care hospital—A facility having an organized medical staff that provides equipment and services primarily for inpatient medical care and other related services to persons who require definitive diagnosis or treatment, or both, for injury, illness, pregnancy or other disability and is licensed by the Department to operate as a hospital in this Commonwealth under the Health Care Facilities Act (35 P.S. §§ 448.101—448.904b) and the regulations promulgated thereunder.

Applicant—A person who submits an application to the Department to become an approved clinical registrant.

Approved clinical registrant—An entity that applied for and received the approval of the Department to do all of the following:

(i) Hold a permit as both a grower/processor and a dispensary.

(ii) Enter into a research contract with a certified ACRC.

Certified ACRC—An ACRC that has applied for and has been certified by the Department to enter into a research contract with an approved clinical registrant.

IRB—Institutional review board—A board, committee, RAC or group designated by a certified ACRC that reviews and approves the anticipated scope of an approved clinical registrant's research study involving human subjects under the criteria in 45 CFR 46.111 (relating to criteria for IRB approval of research) and 21 CFR 56.111 (relating to criteria for IRB approval of research).

Institution of higher education—A community college, State-owned institution, State-related institution, or private college or university approved by the Department of Education.

RAC—Research approval committee—A board, committee or group created or designated by a certified ACRC to review and approve the scope and research protocols of a research program proposed by an approved clinical registrant.

Research—Any systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

Research contract—A written agreement between an approved clinical registrant and a certified ACRC that contains the responsibilities and duties of each party with respect to the research program or research study that the approved clinical registrant and the certified ACRC intend to conduct under this chapter and under which the certified ACRC will provide medical advice to the approved clinical registrant regarding, among other areas, patient health and safety, medical applications, and dispensing and management of controlled substances.

Research program—Research on the therapeutic or palliative efficacy of medical marijuana limited to the serious medical conditions defined by the act and this part.

Research project or study—Any other research on medical marijuana or its effectiveness in treating a medical or psychological condition.

Research protocol—A written procedure for conducting a research program or research study that includes all of the following information:

(i) With respect to the investigator:

(A) Name and address.

(B) Institutional affiliation.

(C) Qualifications, including a curriculum vitae and list of publications, if any.

(ii) With respect to the research program or research study:

(A) Title of the research program or research study.

(B) Statement of the purpose.

(C) Type of medical marijuana product involved and the amount needed.

(D) Description of the research to be conducted, including the number and type of medical marijuana product, the dosage, the route and method of administration, and the duration of the research program or research study.

(E) The locations of the dispensaries that will be participating in the research program or research study.

§ 1211.22. Clinical registrants generally.

(a) The qualifications that a clinical registrant shall meet to be approved by the Department are continuing qualifications.

(b) An applicant that has already been issued a grower/processor permit or a dispensary permit by the Department under sections 601—616 of the act (35 P.S. §§ 10231.601—10231.616) who wishes to become an approved clinical registrant shall:

(1) Submit a request to the Department under § 1211.28 (relating to request for conversion of an existing permit) with the application for approval of a clinical registrant.

(2) Not be required to apply for, or be eligible to receive, an additional grower/processor permit or dispensary permit under the act, this chapter, Chapter 1141, Chapter 1151 or Chapter 1161, as applicable.

(c) The Department will not approve more than eight clinical registrants.

(d) An approved clinical registrant may not dispense or offer to dispense, as a clinical registrant, any medical marijuana products at the clinical registrant dispensary location until:

(1) The Department has determined that an approved clinical registrant is ready, willing and able to operate as a grower/processor and a dispensary.

(2) The approved clinical registrant demonstrates to the satisfaction of the Department that it will be able to begin an approved research program or research study within 6 months following the date the Department determines the approved clinical registrant's dispensary to be operational.

(e) An approved clinical registrant may dispense medical marijuana products to a patient or caregiver who presents a valid identification card to an employee who is authorized to dispense medical marijuana products at a dispensary location operated by an approved clinical registrant under this chapter regardless of whether the patient is a participant in a research study.

§ 1211.23. Limitation on permits.

(a) An approved clinical registrant may not hold more than one grower/processor permit and one dispensary permit.

(b) A dispensary permit held by an approved clinical registrant for use under this chapter may be used to dispense medical marijuana products at no more than six separate locations as approved by the Department, each of which shall be dispensing medical marijuana for the purpose of conducting research.

(c) An approved clinical registrant may not locate more than three of its approved dispensaries in the same medical marijuana region or in the same county.

§ 1211.24. Capital requirements.

An applicant shall provide all of the following information with its application under § 1211.27 (relating to application for approval of a clinical registrant):

(1) An affidavit, on a form prescribed by the Department, stating that the applicant has at least $15 million in capital, which must include evidence that the applicant meets the capital requirements of a medical marijuana organization under § 1141.30 (relating to capital requirements).

(2) A release sufficient to obtain information from a state governmental agency, financial institutions, an employer or any other person to verify the requirements of paragraph (1). Failure to provide a release will result in the rejection of the application for approval of a clinical registrant.

§ 1211.25. Certifying ACRCs.

(a) The qualifications that an ACRC shall meet to be approved by the Department are continuing qualifications.

(b) An accredited medical school may file an application with the Department to be approved as a certified ACRC using a form prescribed by the Department. The Department will publish a notice in the *Pennsylvania Bulletin* announcing the availability of the application and the time period during which the Department will accept applications.

(c) An application submitted under subsection (b) must include all of the following information:

(1) The legal name, address and telephone number of the accredited medical school and the name, telephone number and professional e-mail address of an individual at the accredited medical school who will be the primary contact for the Department during the Department's review of the application.

(2) The legal name, address and telephone number of the acute care hospital that is operated by or partnered with the accredited medical school and the name, telephone number and professional e-mail address of an individual at the accredited medical school who will be the primary contact for the Department during the Department's review of the application.

(3) An affidavit, on a form prescribed by the Department, disclosing any payments to the accredited medical school or any of its affiliates made by a person with whom the accredited medical school intends to enter into a research contract for purposes of operating as an approved clinical registrant or by any principal or financial backer of the person, up to and including the date of the submission of the application. The affidavit must include the amount and purpose of each payment made.

(4) A statement that the accredited medical school is currently accredited by the Liaison Committee of Medical Education or the Commission on Osteopathic College Accreditation.

(5) A statement that the acute care hospital designated by the accredited medical school under paragraph (2) holds a valid license from the Department.

(6) The State and Federal tax identification numbers of the accredited medical school.

(7) A statement that a false statement made by the accredited medical school submitting the application is punishable under the applicable provisions of 18 Pa.C.S. Chapter 49 (relating to falsification and intimidation).

(8) Any other information deemed necessary by the Department.

(d) The Department will publish a list containing the name and address of each certified ACRC on its publicly-accessible web site and in the *Pennsylvania Bulletin*.

§ 1211.26. Revocation of a certification of an ACRC.

(a) The certification of an ACRC will be revoked by the Department upon the occurrence of any of the following:

(1) The ACRC is no longer accredited by the Liaison Committee of Medical Education or the Commission on Osteopathic College Accreditation, as applicable.

(2) The ACRC no longer operates or is partnered with the acute care hospital listed in its application for certification.

(3) The ACRC is no longer located in this Commonwealth.

(b) If the Department intends to revoke the certification of an ACRC under this section, the Department will provide written notice of its intention to the ACRC. Upon receipt of a notice under this subsection, the ACRC shall have 90 days from the date of the notice to provide the Department with evidence satisfactory to the Department that it has received reaccreditation by the Liaison Committee of Medical Education or the Commission on Osteopathic College Accreditation, as applicable, that it operates or is partnered with another acute care hospital or that it has relocated within this Commonwealth. If the ACRC does not comply with this subsection within 90 days from the date of the notice, the Department may revoke the certification of the ACRC.

§ 1211.27. Application for approval of a clinical registrant.

(a) An applicant shall file an application for approval of a clinical registrant with the Department on a form prescribed by the Department. The Department will publish a notice in the *Pennsylvania Bulletin* announcing the availability of applications and the time period during which the Department will accept applications.

(b) An application for approval of a clinical registrant submitted under this section must include all of the following information:

(1) The legal name, address and telephone number of the applicant and the name, telephone number and professional e-mail address of an individual who will be the primary contact for the Department during the Department's review of the application.

(2) The name of the certified ACRC under § 1211.25 (relating to certifying ACRCs).

(3) The applicant's State and Federal tax identification numbers.

(4) An affidavit, on a form prescribed by the Department, disclosing any payments made by the applicant, a principal or financial backer of the applicant to a certified ACRC or any affiliates of a certified ACRC, up to and including the date of the submission of the application. The affidavit must include the amount and purpose of each payment made.

(5) The name of an institution of higher education, if any, that will be participating in an approved research program or research study.

(6) An affidavit and release under § 1211.24 (relating to capital requirements).

(7) Evidence that the applicant is responsible and capable of successfully operating as an approved clinical registrant, including all of the following:

(i) A copy of the research contract between the applicant and the certified ACRC.

(ii) A description of the research program or research study the applicant and the certified ACRC intend to conduct.

(iii) A statement that the applicant may not engage in the business of selling, dispensing or offering to dispense medical marijuana products at an applicant's dispensary as a clinical registrant until the clinical registrant dispensary is ready, willing and able to dispense medical marijuana products.

(8) Except as provided in § 1211.28 (relating to request for conversion of an existing permit), an application for a grower/processor permit under Chapters 1141 and 1151 (relating to general provisions—temporary regulations; and growers/processors—temporary regulations).

(9) Except as provided in § 1211.28, an application for a dispensary permit under Chapter 1141 and Chapter 1161 (relating to dispensaries—temporary regulations).

(10) A statement that a false statement made by the applicant is punishable under the applicable provisions of 18 Pa.C.S. Chapter 49 (relating to falsification and intimidation).

(11) Any other information deemed necessary by the Department.

(c) An applicant may only include one certified ACRC in its application for approval of a clinical registrant.

(d) The following documents provided to the Department under this chapter are confidential and not subject to disclosure under the Right-to-Know Law (65 P.S. §§ 67.101—67.3104):

(1) A research contract.

(2) A description of a research program or research study.

(3) A certified ACRC's intellectual property.

(4) An approved clinical registrant's intellectual property.

§ 1211.28. Request for conversion of an existing permit.

(a) An applicant holding a grower/processor permit or a dispensary permit, or both, under sections 601—616 of the act (35 P.S. §§ 10231.601—10231.616), shall submit a request for conversion of an existing permit under this section on a form prescribed by the Department when submitting an application for approval of a clinical registrant under § 1211.27 (relating to application for approval of a clinical registrant).

(b) Upon approval of a clinical registrant under subsection (a), the clinical registrant shall surrender its grower/processor permit or dispensary permit, or both, previously issued under sections 601—616 of the act.

(c) A grower/processor permit or dispensary permit, or both, surrendered under subsection (b) will increase the number of grower/processor permits or dispensary permits, as applicable, available to other persons applying for permits under sections 601—616 of the act, Chapter 1141 (relating to general provisions—temporary regulations) and Chapter 1151 or Chapter 1161 (relating to growers/processors—temporary regulations; and dispensaries—temporary regulations), as applicable.

(d) An applicant may include additional dispensary locations in its request for conversion of an existing permit or may request additional dispensary locations at a later date under § 1161.40 (relating to application for additional dispensary locations).

§ 1211.29. Practices and procedures of research programs, projects or studies.

(a) Medical marijuana dispensed as part of a research program shall be dispensed only in a form permitted by the act or this part and only from a dispensary to a patient or to a caregiver.

(b) Marijuana dispensed under a research project or study may be dispensed, in any form deemed medically safe by an IRB, from a clinical registrant dispensary directly to an ACRC.

(c) A RAC or IRB shall adopt research procedures and shall review and approve each research program in accordance with the RAC or IRB established practices and procedures.

(d) An IRB shall review each proposed research project or study in accordance with the IRB's practices, procedures and protocols.

(e) A RAC or IRB shall, at a minimum, ensure that each research program, project or study addresses all of the following:

(1) Protecting the rights and welfare of patients involved in research programs conducted under this chapter.

(2) Minimizing the risk to patients by using procedures that are consistent with sound research design and that do not unnecessarily expose patients to risk being performed on subjects for diagnosis or treatment purposes.

(3) Determining that the risks to patients involved in research programs are reasonable in relation to the anticipated benefits (if any) to the patients, and the importance of the knowledge that may be expected to result from the research program.

(4) Guaranteeing that informed consent will be sought from each prospective patient or the patient's legally authorized representative and is properly documented.

(5) Protecting the privacy of every patient.

§ 1211.30. Approval or denial of an application for approval of a clinical registrant.

(a) An applicant shall be an approved clinical registrant upon the Department's approval of an application under § 1211.27 (relating to application for approval of a clinical registrant).

(b) The Department may deny the application for approval of a clinical registrant if the payments disclosed in the affidavit submitted under § 1211.27(b)(4) violate the prohibition in § 1211.34 (relating to prohibition).

(c) Before the Department denies an application for approval of a clinical registrant under subsection (b), the Department will provide the applicant with written notice specifying the violation. The applicant may submit to the Department, within 10 days following receipt of the Department's written notice, a supplemental affidavit indicating that the certified ACRC or its affiliate has refunded to the applicant or a principal or financial backer of the applicant that portion of payments in violation of § 1211.34. Upon receipt of the supplemental affidavit, the Department may approve the application for approval of a clinical registrant. If the applicant fails to provide a supplemental affidavit within 10 days of the Department's written notice, the Department will deny the application for approval of a clinical registrant.

(d) An approved clinical registrant shall have the same rights and obligations as a medical marijuana organization that holds a grower/processor permit or a dispensary permit under sections 601—616 of the act (35 P.S. §§ 10231.601—10231.616) and Chapters 1141, 1151 and 1161 (relating to general provisions—temporary regulations; growers/processors—temporary regulations; and dispensaries—temporary regulations), as applicable, subject to any modifications or limitations in sections 2001—2003 of the act (35 P.S. §§ 10231.2001—10231.2003) and this chapter.

(e) A grower/processor permit and a dispensary permit issued to an approved clinical registrant will expire upon the nonrenewal, revocation or suspension by the Department of the approved clinical registrant's approval.

§ 1211.31. Renewal of approval of a clinical registrant.

(a) The term of an approval of a clinical registrant will coincide with the term of the clinical registrant's grower/processor permit and dispensary permit.

(b) An approved clinical registrant shall renew its approval as part of the renewal for a grower/processor permit and a dispensary permit under § 1141.36 (relating to permit renewal applications). The renewal application must be on a form prescribed by the Department and include all of the following:

(1) A copy of the research contract.

(2) A list of the approved research programs or research studies that are continuing or, if any of them are concluded, the dates they were concluded.

(3) A report of the current status of active research programs or research studies being conducted under the research contract, including preliminary findings, if applicable, and any expectations and projections the approved clinical registrant and the certified ACRC have for future research programs or research studies over the course of the 2 years following the date of submission of the report.

(4) A description of proposed research programs or research studies covered by the research contract that the approved clinical registrant intends to conduct within the next year following submission of the renewal application including evidence of IRB approval for each research program or research study.

(5) A statement that a false statement made by the approved clinical registrant or the certified ACRC is punishable under the applicable provisions of 18 Pa.C.S. Chapter 49 (relating to falsification and intimidation).

(6) Any other information deemed necessary by the Department.

(c) The Department will not renew an approval for a clinical registrant under this section if the Department determines that none of the dispensary locations under the dispensary permit held by the approved clinical registrant are participating in an approved research program or research study and the approved clinical registrant does not intend to begin any additional approved research programs or research studies within the first 6 months following the approval of its application for renewal.

§ 1211.32. Revocation of approval of a clinical registrant.

(a) The approval of a clinical registrant will be revoked immediately by the Department upon the occurrence of any of the following:

(1) The Department revokes, suspends or does not renew the grower/processor permit or dispensary permit held by the approved clinical registrant.

(2) Subject to subsection (b), the Department revokes the certification of the ACRC listed in the clinical registrant's application under § 1211.27 (relating to application for approval of a clinical registrant).

(3) The research contract between the approved clinical registrant and the certified ACRC expires without being renewed or is terminated by either party.

(b) If the Department intends to revoke the certification of the ACRC under subsection (a)(2), the Department will provide written notice of its intention to the approved clinical registrant. Upon receipt of a notice under this subsection, the approved clinical registrant shall have 90 days from the date of the notice to contract with another certified ACRC that is not already a party to a research contract with another approved clinical registrant and to provide the Department with all relevant information relating to the certified ACRC. If the approved clinical registrant does not comply with this subsection within 90 days from the date of the notice, the Department may revoke the clinical registrant's approval.

§ 1211.33. Dispensing and tracking medical marijuana products.

In addition to the information to be entered in the electronic tracking system under § 1161.39 (relating to electronic tracking system) with respect to medical marijuana products dispensed to all patients and caregivers, the dispensary of an approved clinical registrant shall enter information into the electronic tracking system as required by the Department that identifies patients that are enrolled in an approved research program or research study.

§ 1211.34. Prohibition.

Except for reasonable remuneration specifically in a research contract for the services to be performed or costs to be incurred by a certified ACRC, a certified ACRC may not solicit or accept anything of value from an approved clinical registrant or a principal or financial backer of an approved clinical registrant. Reasonable remuneration may include up-front deposits or other payments to a certified ACRC under a research contract to defray start-up and ongoing costs of the certified ACRC in connection with the establishment of the contractual relationship in the research contract. This section does not apply to charitable contributions that are part of a history of giving to a certified ACRC established 1 year or more prior to the effective date of the act.

§ 1211.35. Reporting requirements.

(a) Except as provided in subsection (b), an approved clinical registrant shall provide a written report of the findings of its research program or research study to the Department within 365 days of the completion of an approved research program or research study.

(b) In the event the approved clinical registrant or its certified ACRC intends to submit a manuscript of the results of an approved research program or research study to a peer-reviewed medical journal for publication, the written report required under subsection (a) shall be provided to the Department within 30 days following publication.

(c) The Department may post the findings received under this section on its publicly-accessible web site and share them with other approved clinical registrants, certified ACRCs or any other person it determines would benefit from the findings.

§ 1211.36. Sale or exchange.

(a) The grower/processor of an approved clinical registrant may sell or exchange the following items to another grower/processor:

(1) Seeds.

(2) Immature medical marijuana plants.

(3) Medical marijuana plants.

(4) Medical marijuana products.

(b) The grower/processor of an approved clinical registrant may only sell its medical marijuana products to either its own approved dispensaries or any other approved dispensaries of an approved clinical registrant.

(c) Notwithstanding subsection (b), an approved clinical registrant may petition the Department, on a form prescribed by the Department, to sell its medical marijuana products to a dispensary holding a permit under sections 601—616 of the act (35 P.S. §§ 10231.601—10231.616).

(d) A petition filed under subsection (c) must include either the report or manuscript required under § 1211.35 (relating to reporting requirements). If a clinical registrant fails to provide the report or manuscript required under § 1211.35, the petition will be denied.

§ 1211.37. Appeals.

Chapter 5 of 2 Pa.C.S. (relating to practice and procedure) applies to actions of the Department under this chapter constituting an adjudication as defined in 2 Pa.C.S. § 101 (relating to definitions).

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