

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.

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

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

**Level 2 assessment**— An evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. This assessment provides a more detailed examination of the system (including the system’s monitoring and operational practices) than does a Level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices.

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

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

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**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, a wellhead protection area or both.

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

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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 shall consist of up to three zones:

(i) Zone A. A quarter-mile wide area inland from the edge of a waterway or surface water body and from an area one quarter-mile downstream of the intake to a five hour time-of-travel upstream.

(ii) Zone B. A two-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.

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

(i) *Zone I.* The protective zone immediately surrounding a well, spring or infiltration gallery which shall be a 100-to-400-foot radius depending on site-specific source and aquifer characteristics.

(ii) *Zone II.* The zone encompassing the portion of the aquifer through which water is diverted to a well or flows to a spring or infiltration gallery. Zone II shall be a 1/2 mile radius around the source unless a more detailed delineation is approved.

(iii) *Zone III.* **[The] As hydrogeologic conditions warrant, the zone beyond Zone II that contributes surface water and groundwater to] 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 **[a] each** well, spring or infiltration gallery used by a public water system from contamination.

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**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, at 40 CFR Part 141[, **Subparts B and G (relating to maximum contaminant levels)**] as State MCLs, MRDLs and treatment techniques 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.

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(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] and 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**] 0.3 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**] 1.0 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). ]

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**(D) Membrane filtration.**

**(I) The filtered water turbidity shall be less than or equal to 0.15 NTU in at least 95% of the measurements taken each month under § 109.301(1).**

**(II) The filtered water turbidity shall be less than or equal to 1.0 NTU at all times, measured under § 109.301(1).**

(ii) The combined total effect of disinfection processes utilized in a filtration plant shall: [achieve at least a 90% inactivation of Giardia cysts and a 99.9% inactivation of viruses, as determined by CTs and measurement methods established by the EPA. The residual disinfectant concentration in the water delivered to the distribution system prior to the first customer may not be less than .2 mg/L for more than 4 hours, as demonstrated by measurements taken under § 109.301(1). Failure to maintain this level that extends beyond 4 hours constitutes a breakdown in treatment. A system that experiences a breakdown in treatment shall, under § 109.701(a)(3) (relating to reporting and recordkeeping), notify the Department within 1 hour after the water system learns of the violation or the situation, and shall provide public notice in accordance with § 109.408 (relating to Tier 1 public notice categories, timing and delivery of notice).]

**(A) Maintain at least a 90.0% inactivation of Giardia cysts and a 99.9% inactivation of viruses, as determined by CTs and measurement methods established by the EPA. Failure to maintain the minimum log inactivation for more than 4 hours of operation constitutes a breakdown in treatment. A system that experiences a breakdown in treatment shall, under § 109.701(a)(3) (relating to reporting and recordkeeping), notify the Department within 1 hour after the system learns of the violation or the situation, and shall provide public notice in accordance with § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice).**

**(B) Maintain a minimum residual disinfectant concentration at the entry point as demonstrated by measurements taken under § 109.301(1). The minimum residual shall be 0.50 mg/L measured as free chlorine for systems using chlorine or 1.00 mg/L measured as total chlorine for systems using chloramines unless a higher residual is specified by the Department. For alternate disinfectants, the water system shall maintain the minimum equivalent residual specified by the Department. Failure to maintain the minimum entry point disinfectant residual for more than 4 hours constitutes a breakdown in treatment. A system that experiences a breakdown in treatment shall, under § 109.701(a)(3), notify the Department within 1 hour after the system learns of the violation or the situation, and shall provide public notice in accordance with § 109.408.**

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

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(3) A community [**public**] water system **with groundwater sources** shall provide continuous disinfection, [**and**] comply with Subchapter M (relating to additional requirements for groundwater sources) [**for groundwater sources**] **and maintain a minimum residual disinfectant concentration at the entry point as demonstrated by measurements taken under § 109.1305 (relating to compliance monitoring). Beginning (insert date 1 year after date of regulation), the minimum residual shall be at least 0.50 mg/L measured as free chlorine for systems using chlorine or 1.00 mg/L measured as total chlorine for systems using chloramines unless a higher residual is specified by the Department. For alternate disinfectants, the water system shall maintain the minimum equivalent residual specified by the Department. Failure to maintain the minimum entry point disinfectant residual for more than 4 hours constitutes a breakdown in treatment. A system that experiences a breakdown in treatment shall, under § 109.701(a)(3), notify the Department within 1 hour after the system learns of the violation or the situation and shall provide public notice in accordance with § 109.408.**

**(4) Community water systems that obtain finished water from another public water system shall comply with the minimum disinfectant residual specified in § 109.710 (relating to disinfectant residual in the distribution system).**

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

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

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

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

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

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

**(A) A system fails to meet the *E. coli* MCL as specified under § 109.301(3)(iv).**

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

**(iii) The Department may direct a system to conduct a Level 1 or Level 2 assessment if circumstances exist which may adversely affect drinking water quality including, but not limited to, the situations specified in § 109.701(a)(3)(iii).**

**(6) Failure by a seasonal water system to complete the approved start-up procedure prior to serving water to the public as required under § 109.716 (relating to seasonal systems) is a treatment technique violation requiring 1-hour reporting in accordance with § 109.701(a)(3) and public notification in accordance with § 109.409.**

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

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#### **§ 109.204. Disinfection profiling and benchmarking.**

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**(d) A public water supplier using surface water or GUDI sources that did not conduct disinfection profiling and benchmarking prior to (insert effective date of regulation) shall conduct a disinfection profile and establish a disinfection benchmark 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 disinfection profiling data and benchmark must be submitted to the Department by (insert date 18 months after effective date of regulation).**

**(e) A public water supplier that obtains a permit or permit modification for filtration treatment for a surface water or GUDI source after (insert effective date of regulation) shall conduct a disinfection profile and establish a disinfection benchmark 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 disinfection profiling data and benchmark must be submitted to the Department within 18 months after the permit is issued or amended.**

### **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 [established by the EPA under the National Primary Drinking Water Regulations], unless increased monitoring is required by the Department under § 109.302.

(i) [Except as provided under subparagraphs (ii) and (iii) a public water supplier:] Beginning (insert date 1 year after the effective date of regulation), continuously monitor the turbidity level of representative samples of the system's filtered water and record the turbidity measurements at least every 15 minutes while the plant is operating. For systems that do not operate continuously, the turbidity shall also be measured and recorded at start-up and immediately prior to shutting down the plant.

[(A) Shall determine and record the turbidity level of representative samples of the system's filtered water as follows:

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

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

(B) May substitute continuous turbidity monitoring and recording for grab sample monitoring and manual recording if it validates the continuous measurement for accuracy on a regular basis using a procedure 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 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 0.2 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 days after the equipment fails.

(D) 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.]

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

*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 .2 mg/L.

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

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

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

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

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

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

(iii) Continuously monitor the residual disinfectant concentration at the entry point as specified in § 109.202(c)(1)(ii) (relating to state MCLs, MRDLs and treatment technique requirements), and record the result at least every 15 minutes.

(iv) In addition to the requirements of subparagraphs (i)-(iii), 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 days after the equipment fails.



**(v) Calculate CT at least once per day during the anticipated hour of peak flow and whenever the residual disinfectant concentration at the entry point falls below the minimum value specified in § 109.202(c) or at any other time specified by the Department. Records of CT calculations must be maintained in accordance with § 109.701(d)(2) and submitted to the Department upon request.**

**(vi) Measure and record the residual disinfectant concentration as specified in § 109.710 (relating to disinfectant residual in the distribution system) 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.**

(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 fecal coliform or total coliform] Perform E. coli and 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 [fecal] or total coliform or E. coli determination may be no less than the following:**

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

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

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

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

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

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

**(E) 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.]**

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

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).] Continuously monitor and record the turbidity of the source water immediately prior to disinfection. 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 days after the equipment fails.

(iii) [For a public water supplier serving fewer than 500 people, the Department may reduce the source water turbidity monitoring to one grab sample per day, if the historical performance and operation of the system indicate effective disinfection is maintained under the range of conditions expected to occur in the system’s source water.] Continuously monitor the residual disinfectant concentration at the entry point as specified in § 109.202(c)(1)(iii), and record the result at least every 15 minutes. If there is a failure in the continuous 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 days after the equipment fails.

(iv) Measure and record the residual disinfectant concentration as specified in § 109.710 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.

(3) *Monitoring requirements for coliforms.* Public water systems shall determine the presence or absence of total coliforms for each routine or check sample; and, the presence or absence of [fecal coliforms or] E. coli for a total coliform positive sample in accordance with analytical techniques approved by the Department under § 109.304 (relating to analytical requirements). A system may forego [fecal coliform or] E. coli testing on a total coliform-positive sample if the system assumes that any total coliform-positive sample is also [fecal coliform]E. coli-positive. A system which chooses to forego [fecal coliform or] E. coli testing shall, under § 109.701(a)(3), notify the Department within 1 hour after the

water system learns of the violation or the situation, and shall provide public notice in accordance with § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice).

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

(A) [Except as provided under § 109.705(b) (relating to sanitary surveys), the] **The** number of monthly total coliform samples that [community] **a public** water [systems] **system** shall take is based on the population served by the system as follows:

<i>Population Served</i>	<i>Minimum Number of Samples per Month</i>
25 to 1,000	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330

1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

(B) [Except as provided under § 109.705(c), the number of periodic total coliform samples that noncommunity water systems shall take is as follows:

(I) A noncommunity water system using only groundwater and serving 1,000 or fewer persons per day on a permanent basis, January through December each year, shall take one sample each calendar quarter that the system provides water to the public.

(II) A noncommunity water system using surface water (in total or in part) or serving more than 1,000 persons per day during a given month shall take the same number of samples as a community water system serving the same number of persons specified in clause (A) for each month the system provides water to the public, even if the population served is temporarily fewer than 1,000 persons per day. A groundwater system determined to be under the influence of surface water shall begin monitoring at this frequency 6 months after the Department determines that the source water is under the direct influence of surface water.

(C)] A public water system that uses either a surface water or a GUDI source and does not practice filtration in compliance with Subchapter B (relating to MCLs, MRDLs or treatment technique requirements) shall collect at least one total coliform sample at the entry point, or an equivalent location as determined by the Department, **[to the distribution system]** within 24 hours of each day that the turbidity level in the source water, measured as specified in paragraph **[(2)(i)(B)] (2)(ii)**, exceeds 1.0 NTU. The Department may extend this 24-hour collection limit to a maximum of 72 hours if the system adequately demonstrates a logistical problem outside the system's control in having the sample analyzed within 30 hours of collection. A logistical problem outside the system's control may include a source water turbidity result exceeding 1.0 NTU over a holiday or weekend in which the services of a Department certified laboratory are not available within the prescribed sample holding time. These sample results shall be included in determining compliance with the MCL for **[total coliforms] *E. coli*** established under § 109.202(a)(2) **and whether an assessment has been triggered under § 109.202(c)(5)**.

(C) **Prior to serving water to the public each season, a seasonal system shall collect one or more total coliform samples in accordance with the Department-approved start-up procedure specified in § 109.716 (relating to seasonal systems) until coliforms are not detected in a set of samples. These samples are considered special purpose samples under subparagraph (v).**

(D) **A system may take more than the minimum number of required routine samples and must include the results of those samples in calculating whether an assessment has been triggered under § 109.202(c)(5) only if the samples are taken in accordance with the existing sample siting plan and are representative of water throughout the distribution system.**

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

(ii) *Repeat monitoring.* A public water system shall collect a set of check samples within 24 hours of being notified of a total coliform-positive routine [or] **sample, a total coliform-positive** check sample **or a total coliform-positive sample collected under paragraph (3)(i)(B).** The Department may extend this 24-hour collection limit to a maximum of 72 hours if the system adequately demonstrates a logistical problem outside the system's control in having the check samples analyzed within 30 hours of collection. A logistical problem outside the system's control may include a coliform-positive sample result received over a holiday or weekend in which the services of a Department [certified] **accredited** laboratory are not available within the prescribed sample holding time.

(A) A **public water** system [which collects more than one routine sample per monitoring period] shall collect at least three check samples for each **routine** total coliform-positive sample found.

(B) [A system which collects only one routine sample per monitoring period shall collect at least four check samples for each total coliform-positive sample found.]

[(C)] **(B)** The system shall collect at least one check sample from the sampling tap where the original total coliform-positive sample was taken, at least one check sample at a tap within five service connections upstream of the original coliform-positive sample and at least one check sample within five service connections downstream of the original sampling site. If a total coliform-positive sample occurs at the end of the distribution system or one service connection away from the end of the distribution system, the water supplier shall collect an additional check sample upstream of the original sample site in lieu of a downstream check sample.

[(D)] **(C)** A system shall collect all check samples on the same day, except that a system with a single service connection may collect the required set of check samples all on the same day or consecutively over a [4-day] **3-day** period.

**(E) (D) At a minimum, the system shall collect 1 set of check samples for each total coliform-positive routine sample.** If a check sample is total coliform-positive, the public water system shall collect additional check samples in the manner specified in this subparagraph. The system shall continue to collect check samples until either total coliforms are not detected in **a set of** check samples, or the system determines that **[the MCL for total coliforms as established] an assessment has been triggered** under [§ 109.202(a)(2) has been exceeded] § **109.202(c)(5)** and notifies the Department **in accordance with § 109.701(a)(10).**

**(F) If a system collecting fewer than five routine samples per month has one or more valid total coliform-positive samples, the system shall collect at least five routine samples during the next month the system provides water to the public. The number of routine samples for the month following a total coliform-positive sample may be reduced by the Department to at least one sample the next month if the reason for the total coliform-positive sample is determined and the problem has been corrected or will be corrected before the end of the next month.**

[(G)] **(E)** Results of all routine and check samples not invalidated by the Department shall be included in determining compliance with the MCL for total coliforms as established under **this paragraph and** § 109.202(a)(2).

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

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

\* \* \* \* \*

(III) A total coliform-positive sample result is due to a circumstance or condition which does not reflect water quality in the distribution system. The Department’s decision to invalidate a sample shall be based on evidence that the sample result does not reflect water quality in the distribution system. In this case, the system shall still collect all check samples required under subparagraph (ii) to determine compliance with the MCL for [total coliforms] *E. coli* as established under § 109.202(a)(2) **or whether an assessment has been triggered under § 109.202(c)(5). The decision to invalidate a total coliform-positive sample result and supporting evidence will be documented by the Department, in writing, and approved and signed by the supervisor of the Department official who recommended the decision.**

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

\* \* \* \* \*

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

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

(iv) *Compliance determinations.* **A system is in compliance with the MCL for *E.coli* for samples taken under this paragraph unless any of the following conditions occur:**

(A) [The MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.] **The system has an *E. coli*-positive check sample following a total coliform-positive routine sample.**

**[(I) For a system which collects at least 40 samples per month, if no more than 5.0% of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.**

(II) For a system which collects fewer than 40 samples per month, if no more than one sample collected during the month is total coliform-positive, the system is in compliance with the MCL for total coliforms.]

(B) [Any fecal coliform-positive repeat sample or *E. coli*-positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positive or *E. coli*-positive routine sample constitutes a violation of the MCL for total coliforms.] The system has a total coliform-positive check sample following an *E. coli*-positive routine sample.

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

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

[(C)] (E) A public water system shall determine compliance with the MCL for [total coliforms] *E. coli* in clauses (A), [and] (B), (C) and (D) for each month in which it is required to monitor for total coliforms.

(v) Special purpose samples. Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement or repair, those taken to investigate potential problems in the distribution system or samples collected as part of a seasonal system start-up procedure, may not be used to determine compliance with the MCL for [total coliform] *E. coli* as established under § 109.202(a)(2) or whether an assessment has been triggered under § 109.202(c)(5). Check samples taken under subparagraph (ii) are not considered special purpose samples, and shall be used to determine compliance with the monitoring, MCL requirements and treatment technique requirements for total coliforms and *E. coli* established under this paragraph and § 109.202(a)(2).

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

(B) The Department may decrease the quarterly monitoring requirement specified in clause (A) provided it has determined that the system is reliably and consistently below the MCL. [The Department will not make this determination unless a groundwater or GUDI system takes a minimum of 2 quarterly samples and a surface water system takes a minimum of 4

**quarterly samples.] For an initial detection of a VOC, the Department will not make this determination until the water system obtains results from a minimum of 4 consecutive quarterly samples that are reliably and consistently below the MCL.**

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

(B) The Department may decrease the quarterly monitoring requirement specified in clause (A) provided it has determined that the system is reliably and consistently below the MCL. **[The Department will not make this determination unless a groundwater or GUDI system takes a minimum of 2 quarterly samples and a surface water system takes a minimum of 4 quarterly samples.] For an initial detection of a SOC, the Department will not make this determination until the water system obtains results from a minimum of 4 consecutive quarterly samples that are reliably and consistently below the MCL.**

\* \* \* \* \*

(vii) *Waivers.* A waiver will be granted to a public water supplier from conducting the initial compliance monitoring or repeat monitoring, or both, for an SOC based on documentation provided by the public water supplier and a determination by the Department that the criteria in clause (B), (C) or (D) has been met. A waiver is effective for one compliance period and may be renewed in each subsequent compliance period. If the Department has not granted a use waiver in accordance with clause (B), the public water supplier is responsible for submitting a waiver application and renewal application to the Department for review in accordance with clause (B), **[or] (C) or (D)** for specific entry points. Waiver applications will be evaluated relative to the vulnerability assessment area described in clause (A) and the criteria in clause (B), **[or] (C) or (D)**. Entry points at which treatment has been installed to remove an SOC are not eligible for a monitoring waiver for the SOCs for which treatment has been installed.

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

\* \* \* \* \*

(II) For surface water entry points, the vulnerability assessment area shall consist of **[the area that supplies water to the entry point and is separated from other watersheds by the highest topographic contour] surface water intake protection areas Zones A and B.**

\* \* \* \* \*



**[(E) *Waivers for dioxin and PCBs.* A system is granted a waiver from monitoring for dioxin and PCBs unless the Department determines that there is a source of dioxin or PCB contamination which poses a threat to a drinking water source.]**

\* \* \* \* \*

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

(i) *Monitoring requirements for asbestos.*

**(A) [*Waivers for asbestos monitoring.* A system is granted a waiver from asbestos monitoring unless the Department determines that the system's distribution system contains asbestos cement pipe and the system has not implemented optimum corrosion control measures, or the Department determines that the system's source water is vulnerable to asbestos contamination.]**

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

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

**(I) Each entry point to the distribution system.**

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

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

(D) *Repeat monitoring for systems that exceed the asbestos MCL.* If a sample exceeds the MCL for asbestos, the monitoring at that sampling point shall be continued quarterly beginning in the quarter following the MCL **[violation] exceedance**. After 4 consecutive quarterly samples with results reliably and consistently below the MCL at that entry point, the required monitoring is reduced to one sample at that entry point during the first 3-year compliance period of each subsequent 9-year compliance cycle, if treatment has not been installed to remove asbestos from the source water. Compliance monitoring at entry points at which treatment has been installed to remove asbestos from source water shall be conducted at least annually, and performance monitoring shall be conducted quarterly.

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

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

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

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

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

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

(II) After analyses of 4 consecutive quarterly samples [**at an entry point where treatment has not been installed to comply with an IOC MCL**] indicate that contaminant levels are reliably and consistently below the MCLs, the required monitoring **at an entry point where treatment has not been installed to comply with an IOC MCL** for each IOC that is reliably and consistently below the MCL is reduced to the frequencies stated in clause (A). This reduced monitoring option does not apply to entry points at which treatment has been installed for IOC removal. Compliance monitoring for IOCs for which treatment has been installed to comply with an MCL shall be conducted at least annually, and performance monitoring shall be conducted quarterly.

\* \* \* \* \*

(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.

\* \* \* \* \*

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

\* \* \* \* \*

(B) *Reduced monitoring*.

\* \* \* \* \*

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

\* \* \* \* \*

(13) *Monitoring requirements for disinfectant residuals*. Community water systems and nontransient noncommunity water systems that use either chlorine[,], **or** chloramines or **[chlorine dioxide] that obtain finished water from another public water system that uses either chlorine or chloramines, and transient noncommunity water systems that install chemical disinfection treatment in accordance with § 109.1302(b) (relating to treatment technique requirements)** shall monitor for disinfectant residuals in accordance with this paragraph. Community water systems, **[and]** nontransient noncommunity water systems **and transient noncommunity water systems [that obtain finished water from another public water system]** that **[uses either chlorine or] use** chlorine dioxide to treat the finished water shall monitor for chlorine **[residual] dioxide** in accordance with this paragraph. **[Community water systems and nontransient noncommunity water systems that obtain finished water from another public water system that uses chloramines to treat the finished water shall monitor for chloramine residual in accordance with this paragraph. Transient noncommunity water systems that use chlorine dioxide as either a disinfectant or oxidant shall monitor for**

chlorine dioxide residual 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 disinfectant residuals shall take all samples during normal operating conditions. Compliance with the MRDLs and monitoring requirements for chlorine, chloramines and chlorine dioxide (where applicable) shall be determined in accordance with 40 CFR 141.132 and 141.133 (relating to monitoring requirements; and compliance requirements) which are incorporated herein by reference. **Compliance with the minimum disinfectant residual shall be determined in accordance with § 109.710.**

\* \* \* \* \*

**§ 109.302. Special monitoring requirements.**

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

\* \* \* \* \*

**(h) The Department may require source water sampling if a potential source of contamination is identified or a significant change in land use occurs within the source water protection area in order to gather 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.**

\* \* \* \* \*

**§ 109.303. Sampling requirements.**

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

\* \* \* \* \*

(2) Samples for determining compliance with the [total coliform] *E. coli* MCL **and for determining whether an assessment is triggered under § 109.202(c)(5) (relating to state MCLs, MRDLs and treatment technique requirements)** shall be taken at regular intervals throughout the monitoring period at sites which are representative of water throughout the distribution system according to **[an approved] 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.**

\* \* \* \* \*

(e) Compliance monitoring samples for the contaminants listed under 40 CFR [141.40(n)] **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), [(g)(7)] and (h)(10) and 141.88(a)(1)(iv) (relating to inorganic chemical sampling and analytical requirements; organic chemicals other than total trihalomethanes, sampling and analytical requirements; and monitoring requirements for lead and copper in source water) except:

\* \* \* \* \*

**§ 109.304. Analytical requirements.**

\* \* \* \* \*

(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:

\* \* \* \* \*

(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.**

**Subchapter D. PUBLIC NOTIFICATION**

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

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

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

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

\* \* \* \* \*

(9) A breakdown in treatment for surface water sources as specified in § 109.202(c)(1)(ii) or for groundwater sources as specified in § 109.1307(a)(1)(ii) (relating to system management responsibilities).

\* \* \* \* \*

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

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

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

\* \* \* \* \*

(3) Failure to report an *E.coli* MCL violation or an *E.coli*-positive routine or check sample as required under § 109. 701(a)(3)(iv).

~~[(3)]~~ **(4)** Failure to comply with the terms and conditions of any variance or exemption in place under Subchapter I (relating to variances and exemptions issued by the Department).

~~[(4)]~~ **(5)** Other violations or situations determined by the Department to require a Tier 2 public notice, taking into account potential chronic health impacts and persistence of the violation.

\* \* \* \* \*

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

\* \* \* \* \*

(3) Repeat the notice every 3 months as long as the violation or situation persists, unless the Department determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstances may the repeat notice be given less frequently than once per year. The Department will not allow less frequent repeat notices across the board; **[or for an MCL violation for total coliforms established under § 109.202(a)(2);]** or for a violation of a treatment technique requirement for pathogenic bacteria, viruses and protozoan cysts as defined in § 109.202(c); or for other ongoing violations. Determinations granted by the Department for less frequent repeat notices will be in writing.

\* \* \* \* \*

### § 109.416. CCR requirements.

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

\* \* \* \* \*

(4) *Report delivery and recordkeeping.* Each community water system shall do the following:

(i) Mail or otherwise directly deliver to each customer **[and to the Department]** one copy of the annual CCR no later than the date **[the water system is required to distribute the CCR to its customers] specified in paragraph (2).**

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

**[(ii)] (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 delivery requirements), which are incorporated by reference.

**[(iii)] (iv)** Submit in writing to the Department no later than 3 months after the delivery of the annual CCR:

\* \* \* \* \*

(B) A description of what was done to meet the good faith effort requirement described in subparagraph **[(ii)] (iii).**

**[(iv)] (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:

\* \* \* \* \*

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

**[(vi)] (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.

**[(vii)] (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 **[Water Standards and Facility Regulation] Safe Drinking Water**, Post Office Box **[8774] 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:

\* \* \* \* \*

(iii) *Information describing new sources.* **Information describing new sources must include the items specified in clauses (A) through (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. **[Information describing sources must include:]**

(A) A **[comprehensive sanitary survey of the physical surroundings of each new source of raw water and its proximity to potential sources of contamination. For surface water, this information shall include a description of the watershed topography and land uses within the watershed. For systems using wells, springs or infiltration galleries, this information shall include a hydrogeological report prepared and signed by a professional geologist who has complied with the requirements of the Engineer, Land Surveyor and Geologist Registration Law (63 P. S. § § 148—158.2) describing the geology of the area including the source aquifers, overlying formations, hydrogeologic boundaries, aquifer porosity estimates, water table contour or potentiometric surface maps depicting prepumping conditions and other information deemed necessary to evaluate the hydraulic characteristics of the aquifer and demonstrate the suitability of the proposed source. At the discretion of the Department, these requirements may be altered for a proposed well, wellfield, spring or infiltration gallery that will be pumping less than or yielding less than 100,000 gallons per day] source water assessment of each new raw water source.**

(B) **[An evaluation of the quality of the raw water from each new source. This clause does not apply when the new source is finished water obtained from an existing permitted community water system unless the Department provides written notice that an evaluation is required. The evaluation must include analysis of the following:] A pre-drilling plan for a new groundwater source. The pre-drilling plan must be submitted for review and approval 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. Changes to the proposed aquifer test monitoring plan shall be submitted to the Department for review and approval prior to conducting an aquifer test.**

**[(I) VOCs for which MCLs have been established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.61(a) (relating to maximum contaminant levels for organic contaminants). Vinyl chloride monitoring is required only if one or more of the two-carbon organic compounds specified under**



§ 109.301(5)(i) (relating to general monitoring requirements) are detected. Samples for VOCs shall be collected in accordance with § 109.303(d) (relating to sampling requirements).

(II) Except for asbestos, IOCs for which MCLs have been established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.62 (relating to maximum contaminant levels for inorganic contaminants). The new source shall be monitored for asbestos if the Department has reason to believe the source water is vulnerable to asbestos contamination.

(III) Lead.

(IV) Copper.

(V) Total coliform concentration and, if total coliform-positive, analyze for the presence of *E. coli*.

(VI) SOCs.

(-a-) Except for SOCs that have been granted a Statewide waiver, SOCs for which MCLs have been established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.61(c).

(-b-) Dioxin where there is a source of dioxin contamination within 1,000 feet of a groundwater source or within 1 mile upstream of a surface water source.

(-c-) Polychlorinated biphenyls (PCBs) where there is a source of PCB contamination within 1,000 feet of a groundwater source or within 1 mile upstream of a surface water source.

(VII) Gross Alpha ( $\alpha$ ), radium-226, radium-228, uranium and Gross Beta ( $\beta$ ).

(VIII) Aluminum, chloride, color, foaming agents, iron, manganese, pH, silver, sulfate, total dissolved solids and zinc for which MCLs have been established by the EPA under the National Secondary Drinking Water Regulations in 40 CFR 143.3 (relating to secondary MCLs).

(IX) Alkalinity.

(X) Hardness.

(XI) Temperature.

(XII) For surface water or GUDI sources, *E. coli* or *Cryptosporidium*, or both, as specified in § 109.1202 (relating to monitoring requirements).

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

(C) An evaluation of the quantity of the raw water from each new source. Flow data shall be submitted for springs, infiltration galleries or surface water sources. Aquifer test data, including drawdown and recovery data and the derivation of hydraulic conductivity, transmissivity and storage coefficient of the aquifer, shall be submitted for wells. At the 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 **[that other]** **additional** information **[be submitted]** 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) [A Department approved delineation of the Zone I wellhead protection area for community water system wells, springs or infiltration galleries.] **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 the following:

(I) VOCs for which MCLs have been established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.61(a) (relating to maximum contaminant levels for organic contaminants). Vinyl chloride monitoring is required only if one or more of the two-carbon organic compounds specified 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 under the National Primary Drinking Water Regulations in 40 CFR 141.62 (relating to maximum contaminant levels for inorganic contaminants).

(III) Lead.

(IV) Copper.

(V) Total coliform concentration and, if total coliform-positive, analyze for the presence of *E. coli*.

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

(VII) Gross Alpha ( $\alpha$ ), radium-226, radium-228, uranium and Gross Beta ( $\beta$ ).

(VIII) Aluminum, chloride, color, foaming agents, iron, manganese, pH, silver, sulfate, total dissolved solids and zinc for which MCLs have been established by the EPA under the National Secondary Drinking Water Regulations in 40 CFR 143.3 (relating to secondary MCLs).

(IX) Alkalinity.

(X) Hardness.

(XI) Temperature.

(XII) For surface water or GUDI sources, *E. coli* or *Cryptosporidium*, or both, as specified in § 109.1202 (relating to monitoring requirements).

(XIII) Turbidity.

(XIV) For groundwater sources, the monitoring specified in § 109.302(f) 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 shall 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 the Commonwealth.

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

\* \* \* \* \*

**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 (relating to MCLs, MRDLs or treatment technique requirements; **lead and copper**; long-term 2 enhanced surface water treatment rule; and additional requirements for groundwater sources) except as further provided in this section.

\* \* \* \* \*

(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 meet the requirements of subsection (h) within 12 months of (insert effective date of the regulation).**

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

**(h) Alarm and shutdown capabilities must conform to 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) Clearwell water levels.**

**(iv) Any other operational parameter determined by the Department is necessary for the system to maintain compliance.**

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

\* \* \* \* \*

§ 109.606. Chemicals, materials and equipment.

\* \* \* \* \*

**(d) Equipment used in the construction or modification of a public water system which may come into contact with or affect the quality of the water and which are certified for conformance with NSF Guidelines for Public Drinking Water Equipment Performance (PDWEP) are deemed acceptable to the Department.**

[(d)] (e) Acceptable certification under subsection (b), [or] (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:

\* \* \* \* \*

(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:

\* \* \* \* \*

(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 American National Standards Institute and that has certified the device to verify its removal or reduction 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 must be retested for verification of the removal or reduction performance to remain effective.**

\* \* \* \* \*

[(e)] (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.

**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:

\* \* \* \* \*

(2) *Monthly reporting requirements for performance monitoring.*

(i) The test results of performance monitoring required under § 109.301(1) (relating to general monitoring requirements) for public water suppliers providing filtration and disinfection of surface water or GUDI sources must include the following at a minimum:

(A) For turbidity performance monitoring:

(I) The number of days of filtration operation.

(II) The number of filtered water turbidity measurements taken each month.

(III) The number of filtered water turbidity measurements that are less than or equal to **[0.5] 0.3** NTU for conventional[,] **or direct [or other]** filtration technologies, **0.15 NTU for membrane 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 **1.0 NTU for conventional, direct or membrane filtration technologies, or** 2.0 NTU **for slow sand, diatomaceous earth filtration technologies.**

(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:**

\* \* \* \* \*

(C) For performance monitoring of the residual disinfectant concentration at representative points in the distribution system report the following:

(I) The number of monthly routine samples required.

(II) The number of monthly routine samples collected and analyzed.

(III) The number of samples in which the residual disinfectant concentration was less than **[0.02 mg/L] the required minimum.**

(IV) For samples in which the residual disinfectant concentration was less than **[0.02 mg/L] the required minimum for more than 4 hours:** the **initial** date, time and value **[of each sample] 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.

(ii) The test results of performance monitoring required under § 109.301(2) for public water suppliers using unfiltered surface water or GUDI sources shall include the following, at a minimum:

(A) For turbidity performance monitoring:

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

(II) [The] For measurements in which the source water turbidity is greater than 1.0 NTU, the date, time and value [of each sample that] 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.

~~(II)~~ (III) The date, time and highest turbidity value [if the turbidity does not exceed] each day the source water turbidity remains less than or equal to 1.0 NTU [in a sample].

\* \* \* \* \*

(C) For performance monitoring of the residual disinfectant concentration at representative points in the distribution system, report the following:

(I) The number of monthly routine samples required.

(II) The number of monthly routine samples collected and analyzed.

(III) The number of samples in which the residual disinfectant concentration was less than [0.02 mg/L] the required minimum.

(IV) For samples in which the residual disinfectant concentration was less than [0.02 mg/L] the required minimum for more than 4 hours: the initial date, time and value [of each sample] 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.

\* \* \* \* \*

(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:

\* \* \* \* \*

(iii) Circumstances exist which may adversely affect the quality or quantity of drinking water including, but not limited to:

\* \* \* \* \*

(B) A failure, [or] significant interruption or breakdown in key water treatment processes.

(C) A [natural] disaster that disrupts the water supply or distribution system.

\* \* \* \* \*

**(iv) Any sample result is *E. coli*-positive.**

\* \* \* \* \*

(5) *Siting plan.* The water supplier shall submit to the Department a written sample siting plan for routine **and repeat** coliform sampling as required by [**§ 109.303(a)(2) (relating to sampling requirements)**] within 30 days of receipt of the Department's request for this information [**§ 109.301(a)(3) (relating to general monitoring requirements) by (insert effective date of the regulation).**] **A public water system that begins operation after (insert effective date of the regulation) shall submit the sample siting plan prior to serving water to the public.**

(i) A sample siting plan shall include at a minimum the following:

(A) A list of [**available**] 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[, **including the first service connection (or Department approved equivalent) and dead ends.**] **A routine sample site location may not be used more than once in each month for samples collected under § 109.301(3)(i)(A).**

(B) The name of the company or individual collecting the samples.

(C) A [**time period by which available sites representative of the distribution system are to be sampled during each monitoring period**] **sample collection schedule.**

**(D) Check sample monitoring locations for each routine monitoring location.**

**(E) Triggered source water monitoring locations if representative monitoring has been approved by the Department under 109.1303(c) (relating to triggered monitoring requirements for groundwater sources).**

**(E) The population served by the system.**

**(F) A description of the accessibility of sample sites.**

**(G) The past monitoring history for the system.**

**(H) The beginning and ending dates of each operating season for seasonal systems.**

(ii) [The Department's approval of a sample siting plan will be based upon the following:

(A) The population served by the system.

(B) the accessibility of sample sites.

(C) The past monitoring history for the system.

(D) The completeness of the sample siting plan which includes the information specified in subparagraph (i) and other information relating to the criteria in this subparagraph necessary for evaluation of the sample siting plan.

(iii) 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 [subparagraphs] **subparagraph** (i) [and (ii)].

\* \* \* \* \*

(8) *Reporting requirements for disinfectant residuals.* In addition to the reporting requirements specified in paragraph (1), public water systems shall report MRDL **and minimum disinfectant residual** monitoring data as follows:

\* \* \* \* \*

(ii) Systems monitoring for either chlorine or chloramines under § 109.301(13) shall report the following:

\* \* \* \* \*

**(C) For samples in which the disinfectant concentration was less than the minimum residual specified in § 109.710, 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.**

(9) *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.**

**(10) Level 1 and Level 2 assessments. A public water supplier shall:**

**(i) Report to the Department within 48 hours of triggering a Level 1 or Level 2 assessment under § 109.202(c)(5).**

**(ii) Submit an assessment form completed in accordance with § 109.705(b) to the Department within 30 days after the system learns that it has exceeded a trigger under § 109.202(c)(5).**

**(iii) Submit a revised assessment form in accordance with § 109.705(b) within 30 days of notification from the Department that revisions are necessary.**

**(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, **except that water-level monitoring data shall be kept for 12 years,** and submitted upon request of the Department. The report must include at least the following:

\* \* \* \* \*

(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:



\* \* \* \* \*

**(9) A copy of any assessment form and documentation of corrective actions completed as a result of those assessments or other available summary documentation of the sanitary defects and corrective actions taken under § 109.705(b) shall be kept at least 5 years after completion of the assessment or corrective action.**

(e) Reporting requirements for public water systems required to perform individual filter monitoring under § 109.301(1)(iv).

\* \* \* \* \*

(2) Public water systems required to perform individual monitoring **under § 109.301(1)** 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] 0.30 NTU for conventional, direct or other filtration technologies, 0.15 NTU for membrane filtration technologies or 1.0 NTU for slow sand or diatomaceous earth filtration technologies** in two consecutive measurements taken 15 minutes apart.
- (ii) An individual filter has a measured turbidity level of greater than **[0.5] 0.30 NTU for conventional, direct or other filtration technologies, 0.15 NTU for membrane filtration technologies or 1.0 NTU for slow sand or diatomaceous earth filtration technologies** 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] 0.30 NTU for conventional, direct or other filtration technologies, 0.15 NTU for membrane filtration technologies or 1.0 NTU for slow sand or diatomaceous earth filtration technologies** 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] 0.30 NTU for conventional, direct or other filtration technologies, 0.15 NTU for membrane filtration technologies or 1.0 NTU for slow sand or diatomaceous earth filtration technologies** in two consecutive measurements taken 15 minutes apart at any time in each of 2-consecutive months.

\* \* \* \* \*

**§ 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:

\* \* \* \* \*

(9) **[Sanitary survey] System evaluation program as required under § 109.705(a) including the [wellhead] source water protection program for any water system that develops one under § 109.713 (relating to [wellhead] source water protection programs). **The system evaluation shall include the source water assessment if a source water protection program has not been developed.****

\* \* \* \* \*

(13) An interconnect, valve, ~~[and] blowoff~~ **and auxiliary power equipment** exercise and testing program.

\* \* \* \* \*

### § 109.703. Facilities operation.

(b) For surface water or GUDI sources, a public water supplier using filtration shall comply with the following requirements:

(1) ~~[By July 1, 1990,]~~ **Water** suppliers using conventional or direct filtration shall, **[after filter backwash, and before putting the backwashed filter back on line] 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 ~~[0.5]~~ **0.30** NTU at the normal production flow rate.

(2) **[Beginning May 16, 1992, a]** **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:

\* \* \* \* \*

(3) **[Beginning May 16, 1992, a]** **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:

\* \* \* \* \*

(5) **Filter plants using membrane filtration that are in operation prior to (insert effective date of RTCR) and that have filter-to-waste capability shall, prior to returning a filter to service, filter-to-waste until the permeate turbidity is less than 0.15 NTU at the normal production flow rate. Any membrane filtration treatment installed after (insert effective date of RTCR) prior to returning a filter to service, shall filter-to-waste until the permeate turbidity is less than 0.15 NTU at the normal production flow rate.**

(6) **[Except for public water systems covered under § 109.301(1)(iv) (relating to general monitoring requirements), a]** **A** system with **[conventional or direct]** filtration facilities **[permitted prior to March 25, 1989, without individual filter bed turbidity monitoring capabilities]** shall conduct an annual filter bed evaluation program, acceptable to the Department, which includes, **but is not limited to,** an evaluation of filter media, **filter bed expansion,** valves, surface sweep and sampling of filter turbidities over one entire filter run[; **and shall submit to the Department, with the Annual Water Supply Report, a study that demonstrates that the water supplier's filter-to-waste or alternate approved operating procedures are meeting the operating conditions under paragraph (1) or (4)].** **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 and shutdown capabilities under § 109.602(f) or (g) 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.**

**(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 days unless a longer period of time is approved by the Department.**

**§ 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.

\* \* \* \* \*

**§ 109.705. [Sanitary surveys] System Evaluations and Assessments.**

(a) A community water supplier shall conduct [a sanitary survey] **an evaluation** of the water system at least annually. The [survey] **evaluation** shall include the following activities:

(1) [Watershed surveillance consisting of an] **An** inspection of portions of the [drainage area or wellhead] **source water** protection area necessary to identify and evaluate actual and probable sources of contamination. [An inspection of a wellhead protection area shall include a review of available information pertaining to possible sources of contamination such as underground storage tanks, onlot disposal systems and other activities that may have an adverse impact on water quality or quantity. Specific hydrogeological studies of sources of contamination are not necessary unless required under § 109.4, § 109.602 or § 109.603 (relating to general requirements; acceptable design; and source quality and quantity) or other rules of the Department.]

**(i)** An inspection of a [wellhead] **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 any changes to any actual or probable sources of contamination.**

(2) Evaluation of [source protection,] intake structures and transmission facilities.

\* \* \* \* \*

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

(b) [A community water system which does not collect five or more routine coliform samples per month shall do one of the following:] **A public water system shall conduct Level 1 and 2 assessments required under § 109.202(c)(5) (relating to state MCLs, MRDLs and treatment technique requirements) in accordance with Department guidance. 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) [Undergo a sanitary survey conducted by the Department by June 29, 1994, and thereafter undergo a subsequent sanitary survey conducted by the Department at a minimum frequency of every 3 years.] 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 protocol and sample processing.

(2) [Increase the number of routine coliform samples collected to at least five samples per month if the Department does not conduct a sanitary survey by June 29, 1994, or within 3 years following the initial or a subsequent sanitary survey. This increased sampling frequency shall be in place of the monitoring frequency requirements for coliforms in § 109.301(3)(i) (relating to general monitoring requirements) and remain in effect through the month in which the next sanitary survey is conducted by the Department.] Within 30 days of triggering a Level 1 or Level 2 assessment under § 109.202(c)(5), 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 must be conducted by competent personnel qualified to operate and maintain the water system's facilities.

(4) A Level 2 assessment must be conducted by one or more individuals meeting the following criteria:

(i) Hold a valid certificate issued under Chapter 302 (relating to administration of the water and wastewater operator's 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 detected, 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. Following consultation, the Department may require a public water system to revise the assessment.

**(8) Public water systems shall correct sanitary defects found through either Level 1 or Level 2 assessments 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 action(s) in compliance with a timetable approved by the Department in consultation with the system. The system shall notify the Department when each scheduled corrective action is completed.**

**(9) At any time during the assessment or corrective action phase, either the public water system or the Department may request a consultation with the other party to determine the appropriate actions to be taken. The public water system may consult with the Department on all relevant information that may impact its ability to comply with a requirement of this subsection.**

**(c) A noncommunity water system which does not collect five or more routine coliform samples per month shall do one of the following:**

**(1) Undergo an initial sanitary survey conducted by the Department by June 29, 1999, and thereafter undergo a subsequent sanitary survey at a minimum of every 5 years after the initial sanitary survey.**

**(2) Increase the number of routine coliform samples collected to at least five samples per month if the Department does not conduct a sanitary survey by June 29, 1999, or within 5 years following the initial or a subsequent sanitary survey. This increased sampling frequency shall be in place of the monitoring frequency requirements for coliforms in § 109.301(3)(i) and shall remain in effect through the month in which the next sanitary survey is conducted by the Department.**

**(d) The following apply to significant deficiencies identified at public water systems supplied by a surface water source and public water systems supplied by a groundwater source under the direct influence of surface water:**

**(1) For sanitary surveys performed by the Department, a public water system shall respond in writing to significant deficiencies in sanitary survey reports no later than 45 days after receipt the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.**

**(2) A system shall correct significant deficiencies identified in sanitary survey reports, or according to the schedule approved by the Department, or if there is no approved schedule, according to the schedule reported under paragraph (1) if the deficiencies are within the control of the system.**

**(e) Significant deficiencies identified by the Department at public water systems using groundwater shall comply with § 109.1302(c) (relating to groundwater systems with significant deficiencies or source water *E. coli* contamination).]**

**§ 109.706 System [distribution] map.**

**(a) [The community] A public water supplier shall prepare and maintain on file a detailed map of the water [system's transmission and distribution facilities] system. A copy of the map must be submitted to the Department upon request.**

**(b) [A noncommunity water supplier shall submit a detailed map of the water system's transmission and distribution facilities at the request of the Department.] At a minimum the map must include:**

- (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) Direction of flow.
- (7) Interconnections with other public water systems.
- (8) Monitoring locations.

(c) [The map shall include information sufficient to allow the Department to analyze the distribution system and determine quantity, pressure and direction of flow from the sources to the customers, and shall include the type and size of pipes within the distribution system.] The map shall be [updated] reviewed at least annually and updated as necessary.

\* \* \* \* \*

§ 109.708. [Planned] System service [interruptions] and auxiliary power.

(a) System service. No later than the dates specified in paragraphs (1) – (3), a community water supplier shall 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 the requirements of subsection (b) or (c) or both. A continuous supply of safe and potable water 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 as specified in § 109.607 (relating to pressures) throughout the distribution system.

(1) By (insert date 12 months after effective date of the regulation) for systems serving 3,300 or fewer persons.

(2) By (insert date 24 months after effective date of the regulation) for systems serving 3,301-10,000 persons.

(3) by (insert date 36 months after effective date of the regulation) for systems serving greater than 10,000 persons.

(b) Auxiliary power. 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 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 (e.g., a fallen tree) could disrupt both power feeds.

(2) On-site auxiliary power sources (i.e. generators or engines).

(c) Alternate provisions. The Department may approve alternate provisions, such as finished water storage capacity or interconnections with another public water system, to meet the requirements of subsection (a).

**(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.

\* \* \* \* \*

**§ 109.710 Disinfectant residual in the distribution system.**

(a) A **community water system using a chemical disinfectant or that delivers water that has been treated with a chemical disinfectant shall maintain a minimum** disinfectant residual [acceptable to the Department shall be maintained] throughout the distribution system [of the community water system] sufficient to assure compliance with the microbiological MCLs and the treatment technique requirements specified in § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements). [The Department will determine the acceptable residual of the disinfectant considering factors such as type and form of disinfectant, temperature and pH of the water, and other characteristics of the water system.] **The minimum disinfectant residual shall be 0.30 mg/L measured as free chlorine for systems using chlorine, 1.00 mg/L measured as total chlorine for systems using chloramines, or another level approved by the Department for systems using an alternate oxidizing disinfection treatment.**

(b) [A public water system that uses surface water or GUDI sources or obtains finished water from another permitted public water system using surface water or GUDI sources shall comply with the following requirements:] **A nontransient noncommunity water system or a transient noncommunity water system that has installed chemical disinfection treatment in accordance with §§ 109.202(c) or 109.1302(b) (relating to treatment technique requirements) shall maintain a minimum disinfectant residual throughout the distribution system sufficient to assure compliance with the microbiological MCLs and the treatment technique requirements specified in § 109.202. The minimum disinfectant residual shall be 0.30 mg/L measured as free chlorine for systems using chlorine, 1.00 mg/L measured as total chlorine for systems using chloramines, or another level approved by the Department for systems using an alternate oxidizing disinfection treatment.**

[ (1) As a minimum, a detectable residual disinfectant concentration of 0.02 mg/L measured as total chlorine, combined chlorine or chlorine dioxide shall be maintained throughout the distribution system as demonstrated by monitoring conducted under § 109.301(1) and (2) or (8)(v) (relating to general monitoring requirements).

(2) Sampling points with nondetectable disinfectant residuals which have heterotrophic plate count (HPC) measurements of less than 500/ml are deemed to be in compliance with paragraph (1).

(3) When the requirements of paragraph (1) or (2) cannot be achieved, the supplier shall initiate an investigation under the Department's direction to determine the cause, potential health risks and appropriate remedial measures.]

(c) **Failure to maintain the minimum disinfectant residual for more than 4 hours at any location is a breakdown in treatment. A public water system that experiences a breakdown in treatment shall notify the Department within 1 hour in accordance with § 109.701(a)(3) (relating to reporting and recordkeeping) and issue a Tier 2 public notice in accordance with § 109.409 (relating to tier 2 public notice—categories, timing and delivery of notice).**

**(d)** Public water systems may increase residual chlorine or chloramine, but not chlorine dioxide, disinfectant levels in the distribution system to a level that exceeds the MRDL for that disinfectant and for a time necessary to protect public health or to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm runoff events, source water contamination events or cross-connection events.

\* \* \* \* \*

**§ 109.713. [Wellhead] Source water protection program.**

**(a)** For water suppliers seeking to obtain Department approval for a **[wellhead] source water** protection program, the **[wellhead] source water** protection program shall consist of the following **minimum 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 **[wellhead] source water** protection activities.

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

(3) **[Zone II and Zone III wellhead protection area delineation performed in accordance with methodology provided by the Department. Methods applicable to that hydrogeologic setting shall be utilized and site-specific hydraulic and hydrogeologic information shall include, but is not limited to, pumping rate or yield, aquifer properties, water table or potentiometric surface configuration and hydrogeologic mapping.] A map depicting the source water protection areas that were delineated in accordance with the methodology provided by the Department.**

(4) **[Identification of existing and potential sources of contamination within each wellhead protection area.] 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 **[wellhead] 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 **[wellhead] 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 **[wellhead] source water** protection area.

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

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

(v) **[A] 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 **[well, spring or infiltration gallery] source** and emergency responses to incidents that may impact water supply source quality.

(7) **[New water supply source siting provisions] Provisions** to ensure the protection of **sites identified for development as new [wells, springs or infiltration galleries] water sources**.

**(b) Water suppliers with an approved source water protection program shall review the program on an annual basis to ensure protection of sources and shall submit to the Department an annual report on the status of the source water protection program activities.**

\* \* \* \* \*

### **§ 109.715 Significant Deficiencies.**

**The following apply to significant deficiencies identified by the Department:**

**(a) 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.**

**(b) 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.**

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

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

**(e) 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.**

**(f) 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.**

### **§ 109.716. Seasonal systems.**

**(a) A new seasonal system shall submit a start-up procedure with the construction permit application or brief description as required in §109.505(a)(relating to requirements for noncommunity water systems).**

**(b) A seasonal system approved by the Department to operate prior to (insert effective date of the regulation) shall submit a start-up procedure to the Department by (insert date 30 days after effective date of the regulation).**

**(c) If the Department determines that a start-up procedure is not sufficient, the public water system shall submit a revised start-up procedure within 30 days of receiving written notification from the Department.**

**(d) A seasonal system shall submit to the Department for approval any revisions to an approved start-up procedure prior to serving water to the public the next season.**

**(e) A seasonal system shall demonstrate completion of a Department-approved start-up procedure by submitting written certification prior to serving water to the public each season.**

\* \* \* \* \*

**Subchapter H. LABORATORY CERTIFICATION**

**§ 109.810. Reporting and notification requirements.**

\* \* \* \* \*

(b) A laboratory accredited under Chapter 252 shall whenever the results of test measurements or analyses performed by the laboratory under this chapter indicate an MCL, MRDL or a treatment technique performance requirement under § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements) is exceeded, or **[an action level under] any individual tap sample result exceeds the action level value specified in** § 109.1102(a) (relating to lead and copper)**[ is exceeded]**, or a sample result requires the collection of check or confirmation samples under § 109.301 (relating to general monitoring requirements), 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:

\* \* \* \* \*

(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 **[certified] 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.

\* \* \* \* \*

**Subchapter I. VARIANCES AND EXEMPTIONS ISSUED BY THE DEPARTMENT**

**§ 109.901. Requirements for a variance.**

\* \* \* \* \*

(b) The MCL for [total coliforms] *E. coli* established under § 109.202(a) (relating to State MCLs, MRDLs and treatment technique requirements) is not eligible for a variance.

\* \* \* \* \*

**§ 109.903. Requirements for an exemption.**

\* \* \* \* \*

(b) The MCL for [total coliforms] *E. coli* established under § 109.202(a) (relating to State MCLs, MRDLs and treatment technique requirements) is not eligible for an exemption.

\* \* \* \* \*

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

**§ 109.1002. MCLs, MRDLs or treatment techniques.**

(a) Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall supply drinking water that complies with the MCLs, MRDLs and treatment technique requirements under § § 109.202 and 109.203 (relating to State MCLs, MRDLs and treatment technique requirements; and unregulated contaminants). **Bottled water systems, vended water systems, retail water facilities and bulk water hauling systems using surface water or GUDI sources shall comply with the requirements specified in § 109.204 (relating to disinfection profiling and benchmarking).** Bottled water systems, vended water systems, retail water facilities and bulk water hauling systems shall provide continuous disinfection for groundwater sources. Water for bottling labeled as mineral water, under § 109.1007 (relating to labeling requirements for bottled water systems, vended water systems and retail water facilities) shall comply with the MCLs except that mineral water may exceed the MCL for total dissolved solids.

\* \* \* \* \*

**§ 109.1003. Monitoring requirements.**

(a) *General monitoring requirements.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall monitor for compliance with the MCLs and MRDLs **[in accordance with § 109.301 (relating to general monitoring requirements) and shall comply with § 109.302 (relating to special monitoring requirements). The monitoring requirements shall be applied]** as follows, except that systems which have installed treatment to comply with a primary MCL shall conduct quarterly operational monitoring for the contaminant which the facility is designed to remove:

(1) Bottled water systems, retail water facilities and bulk water hauling systems, for each entry point shall:

\* \* \* \* \*

(ix) *TTHM and HAA5 Stage 2 DBP Rule.* Beginning October 1, 2013, monitor annually for TTHM and HAA5 if the system uses a chemical disinfectant or oxidant to treat the water, or obtains finished water from another public water system that uses a chemical disinfectant or oxidant to treat the water as follows:

(A) *Routine monitoring.* Systems shall take at least one dual sample set per year per entry point during the **peak historical** month [of warmest water temperature].

(B) *Increased monitoring.* If any sample results exceed either a TTHM or HAA5 MCL, the system shall take at least one dual sample set per quarter **(every 90 days)** per entry point. The system shall return to the sampling frequency of one dual sample set per year per entry point if, after at least 1 year of monitoring, each TTHM sample result is no greater than 0.060 mg/L and each HAA5 sample result is no greater than 0.045 mg/L.

(x) Beginning January 1, 2004, monitor daily for chlorite if the system uses chlorine dioxide for disinfection or oxidation. Systems shall take at least one daily sample at the entry point. If a daily sample exceeds the chlorite MCL, the system shall take three additional samples within 24 hours from the same lot, batch, machine, carrier vehicle or point of delivery. The chlorite MCL is based on the average of the required daily sample plus any additional samples.

(xi) **Beginning (insert effective date of the regulation) systems using chlorine dioxide shall take one sample per day at each entry point. If any daily sample exceeds the MRDL, the system shall collect chlorine dioxide check samples as follows:**

**(A) Bottlers shall take at least one sample from the same lot or batch and bulk water haulers shall take at least one sample from the same tanker load.**

**(B) Vended or retail water systems shall take at least one sample as soon as possible but within 24 hours.**

**(C) A violation of the chlorine dioxide MCL occurs when any check sample result exceeds the chlorine dioxide MCL following a routine sample result that exceeds the MCL.**

(xii) Beginning January 1, 2004, monitor monthly for bromate if the system uses ozone for disinfection or oxidation.

\* \* \* \* \*

(b) *Sampling requirements.*

\* \* \* \* \*

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

**techniques adopted by the EPA under the Federal act or methods approved by the Department.**

\* \* \* \* \*

*(c) Repeat monitoring for microbiological contaminants.*

(1) If a sample collected in accordance with subsection (a)(1)(i) is found to be total coliform-positive:

(i) The bottled water system shall collect a set of three additional samples (check) from the same lot or batch of the type of product.

(ii) The vended water, retail water facility or bulk water hauling systems shall collect a set of **[four] three** additional samples (check) from the same entry point (machine, point of delivery or carrier vehicle).

(2) Samples shall be collected for analysis within 24 hours of being notified of the total coliform-positive sample. The Department may extend this 24-hour collection limit to a maximum of 72 hours if the system adequately demonstrates a logistical problem outside the system’s control in having the check samples analyzed within 30 hours of collection. A logistical problem outside the system’s control may include a coliform-positive result received over a holiday or weekend in which the services of a Department certified laboratory are not available within the prescribed sample holding time.

**(3) [If a check sample is total coliform-positive, the system shall be deemed to have violated the MCL for total coliforms established under § 109.1002 (relating to MCLs, MRDLs or treatment techniques).] At a minimum, the system shall collect one set of check samples for each total coliform-positive routine sample. If a check sample is total coliform-positive, the public water system shall collect additional check samples in the manner specified in this subsection. The system shall continue to collect check samples until either total coliforms are not detected in a set of check samples, or the system determines that an assessment has been triggered under § 109.202(c)(5) (relating to State MCLs, MRDLs and treatment technique requirements) and notifies the Department in accordance with § 109.701(a)(10) (relating to reporting and recordkeeping).**

\* \* \* \* \*

*(e) A bulk water hauling system, [or] vended water system or retail water facility that serves at least 25 of the same persons over 6 months per year. A bulk water hauling system, [or] vended water system or retail water facility that is determined by the Department to serve at least 25 of the same persons over 6 months per year shall comply with the monitoring requirements for nontransient noncommunity water systems in accordance with § 109.301.*

\* \* \* \* \*

**(h) Compliance determinations. Compliance with MCLs, MRDL, and treatment techniques shall be determined in accordance with §§ 109.202 and 109.301.**

**(i) Special monitoring requirements. Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with § 109.302.**

§ 109.1004. Public notification.

(a) *General public notification requirements.* A bottled water [or retail water] supplier shall give public notification in accordance with this section. A bulk water hauler, [or] vended water supplier **or retail water supplier** shall give public notification in accordance with Subchapter D (relating to public notification requirements). For the purpose of establishing a bulk hauling [water or], vended **or retail** water supplier’s responsibilities under Subchapter D, a bulk water supplier shall comply with the public notification requirements specified for a community water system and a vended **or retail** water supplier shall comply with the public notification requirements specified for a noncommunity water system.

\* \* \* \* \*

§ 109.1008. System management responsibilities.

\* \* \* \* \*

(d) *[Sanitary survey] Annual system evaluation requirements.* Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall conduct [a sanitary survey] **an evaluation** of the water system at least annually[, **the survey to include**] **that includes** the activities listed in paragraphs (1)—(4). A bottled water, vended water, bulk water hauling system or retail water facility obtaining finished water from a permitted public water system is not required to perform the activities in paragraphs (1) and (2) if the Department determines that there are no potential problems necessitating inspection and evaluation of the source.

\* \* \* \* \*

**(g) Significant Deficiencies. Bottled water and vended water systems, retail water facilities and bulk water hauling systems shall comply with the requirements of § 109.715 (relating to significant deficiencies).**

**(h) Stage 2 DBPR Monitoring Plan and Operational Evaluation Levels. A bulk water hauling system, vended water system or retail water facility that is determined by the Department to meet the definition of a community or nontransient noncommunity public water system and that uses a chemical disinfectant or that obtains finished water from another public water system that uses a chemical disinfectant or oxidant shall comply with the requirements of § 109.701(g)(2).**

**(i) Level 1 and Level 2 Assessments. Bottled water systems, vended water systems, retail water facilities and bulk water hauling systems shall comply with the requirements of §109.705(b) (relating to system evaluations and assessments).**

**(j) Seasonal BVRBs. A bottled water system, vended water system, retail water facility or bulk water hauling system that operates as a seasonal system shall comply with the requirements of 109.716 (relating to seasonal systems).**

\* \* \* \* \*

Subchapter K. LEAD AND COPPER

§ 109.1103. Monitoring requirements.

\* \* \* \* \*

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

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

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

(e) *Reduced monitoring.*

\* \* \* \* \*

(3) *Reduced monitoring revocation.*

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

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*



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

\* \* \* \* \*

**§ 109.1105. Permit requirements.**

\* \* \* \* \*

(b) *Construction permits and permit amendments.* The water supplier shall submit an application for a public water system construction permit for a newly-created system or an amended construction permit for a currently-permitted system for corrosion control treatment facilities by the applicable deadline established in § 109.1102(b)(2) (relating to action levels and treatment technique requirements), unless the system complies with paragraph (1) or (2) or otherwise qualifies for a minor permit amendment under § 109.503(b) (relating to public water system construction permits). The permit application must comply with § 109.503 and contain the applicable information specified therein. The application must include recommended water quality parameter performance requirements for optimal corrosion control treatment as specified in § 109.1102(b)(5) and other data, information or documentation necessary to enable the Department to consider the application for a permit for construction of the facilities.

(1) *Community water system minor permit amendments.* **[The] Until (insert effective date of the regulation), 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 shall describe the proposed change in sufficient detail to allow the Department to adequately evaluate the proposal.

\* \* \* \* \*

(2) *Nontransient noncommunity water system permits.* **[The] Until (insert effective date of the regulation), 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:

\* \* \* \* \*

**(3) Beginning (insert effective date of the regulation), 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 operations permit.**

\* \* \* \* \*

**§ 109.1107. System management responsibilities.**

\* \* \* \* \*

(d) *Lead service line replacement.*

(4) *Conditions of replacement.* The water supplier shall replace the portion of the lead service line that it owns. In cases where the system does not own the entire lead service line, the system shall notify the owner of the line, or the owner’s authorized agent, that the system will replace the portion

of the service line that the system owns and shall offer to replace the owner’s portion of the line. A system is not required to **bear the cost of replacing the privately-owned portion of the line or to replace the privately-owned portion of the** line if the owner refuses to pay for the cost of replacement of the privately owned portion of the line, or if any laws prohibit this replacement. A system that does not replace the entire length of service line shall complete the following tasks:

\* \* \* \* \*

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

**§ 109.1202. Monitoring requirements.**

(a) *Initial round of source water monitoring.* A system shall conduct the following monitoring on the schedule in subsection (c) unless it meets the monitoring exemption criteria in subsection (d):

\* \* \* \* \*

(4) Filtered systems serving less than 10,000 people shall sample their source water for *Cryptosporidium* at least twice per month for 12 months or at least monthly for 24 months if they meet one of the following subparagraphs, based on monitoring conducted under paragraph (3):

- (i) For systems using lake/reservoir sources, the annual mean *E. coli* concentration is greater than **[10] 100** *E. coli*/100 mL.
- (ii) For systems using flowing stream sources, the annual mean *E. coli* concentration is greater than **[50] 100** *E. coli*/100 mL.

\* \* \* \* \*

(i) *Source water sample collection period.* \* \* \* *(editor’s note: This is a subsection that is currently indented as a subparagraph)*

\* \* \* \* \*

(l) **[Chemical treatment prior to sampling location]** **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.

\* \* \* \* \*

(n) **[Bank filtration]** **Source water sample locations for systems with bank filtration.**

(1) Systems that receive *Cryptosporidium* treatment credit for bank filtration to meet existing treatment 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.

\* \* \* \* \*

(o) **[Multiple sources]** **Source water sample locations for systems with multiple sources.** Systems with plants that use multiple sources, including multiple surface water sources and blended surface water and

groundwater sources, shall collect samples as specified in paragraph (1) or (2). The use of multiple sources during monitoring must be consistent with routine operational practice. Sources not adequately evaluated during the monitoring period will be considered new sources and the requirements under subsection (f) will apply. Systems must begin monitoring a new source as soon as a sampling schedule and plan have been approved by the Department.

\* \* \* \* \*

**§ 109.1203. Bin classification and treatment technique requirements.**

\* \* \* \* \*

(f) *Treatment and management options for filtered systems, microbial toolbox.*

\* \* \* \* \*

(2) Systems using sources classified in Bin 3 and Bin 4 shall achieve at least 1-log of the additional *Cryptosporidium* treatment required under § 109.1204(a) using either one or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone or UV, as described in [**§ 109.1204 (b), (c) and (n)—(q)**] **§ 109.1204** (relating to requirements for microbial toolbox components).

(g) *Failure to meet treatment credit.* Failure by a system in any month to achieve treatment credit by meeting criteria in [**§ 109.1204 (b), (c) and (n)—(q)**] **§ 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.

\* \* \* \* \*

**§ 109.1206. Reporting and recordkeeping requirements.**

\* \* \* \* \*

(e) *Source water reporting data elements.* Systems shall report the applicable information in paragraphs (1) and (2) for the source water monitoring required under § 109.1202.

(1) *Cryptosporidium data elements.* Systems shall report data elements in subparagraphs (i)—(vii) for each *Cryptosporidium* analysis. Systems shall report, in a form acceptable to the Department, data elements in subparagraphs (viii)—(x) as applicable.

\* \* \* \* \*

(viii) **The concentration of oocysts per Liter.**

[(viii)] **(ix)** For matrix spike samples, systems shall also report the sample volume spikes and estimated number of oocysts spiked. These data are not required for field samples.

[(ix)] **(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.

[(x)] **(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.

\* \* \* \* \*

**Subchapter M. ADDITIONAL REQUIREMENTS FOR GROUNDWATER SOURCES**

**§ 109.1302. Treatment technique requirements.**

(a) *Community groundwater systems.* Community groundwater systems are required to provide continuous disinfection under [§ 109.202(c)(2)] **§ 109.202(c)(3)** (relating to state MCLs, MRDLs and treatment technique requirements) and in addition shall:

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(2) [Maintain] **Beginning (insert date 1 year after effective date of the regulation), maintain** at each groundwater entry point a **minimum** residual disinfectant concentration no less than **[0.40 mg/L expressed as free chlorine or its equivalent as approved by the Department, or other minimum residual approved by the Department, as demonstrated under § 109.1306 (relating to information describing 4-log treatment and compliance monitoring) to provide 4-log treatment of viruses,] 0.50 mg/L measured as free chlorine for systems using chlorine or 1.00 mg/L measured as total chorine for systems using chloramines unless a higher residual is specified by the Department. For alternate disinfectants, the water system shall maintain the minimum equivalent residual specified by the Department.**

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(b) *Noncommunity groundwater systems including bottled water and vended water systems, retail water facilities and bulk water hauling systems.*

(1) Noncommunity groundwater systems may demonstrate at least 4-log treatment of viruses is provided prior to the first customer by submitting information as required under § 109.1306. Systems demonstrating at least 4-log treatment of viruses under this paragraph shall:

(i) **Maintain a minimum disinfectant residual of 0.50 mg/L measured as free chlorine for systems using chlorine or 1.00 mg/L measured as total chorine for systems using chloramines unless a higher residual is specified by the Department. For alternate disinfectants, the water system shall maintain the minimum equivalent residual specified by the Department.**

[(i)] (ii) Comply with compliance monitoring requirements under § 109.1305 when directed by the Department following notification of approval by the Department that at least 4-log treatment of viruses has been demonstrated for a groundwater source or sources.

[(ii)] (iii) Comply with triggered monitoring requirements under § 109.1303 until beginning compliance monitoring under subparagraph [(i)] (ii).

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

(1) A groundwater system with [a significant deficiency or] an *E. coli*-positive groundwater source sample collected under § 109.505(a)(3), § 109.1303(a) or § 109.1304(a) (relating to requirements for noncommunity water systems; triggered monitoring requirements for groundwater sources; and

assessment source water monitoring) [shall correct all significant deficiencies and, if directed by the Department,] shall implement one or more of the following corrective actions:

- (i) Provide an alternative source of water.
- (ii) Eliminate the source of contamination.
- (iii) Submit information required under § 109.1306 and provide treatment that reliably achieves at least 4-log treatment of viruses before the first customer for the groundwater source or sources and comply with compliance monitoring requirements under § 109.1305.

(2) A groundwater system with a significant deficiency or an *E. coli*-positive groundwater source sample collected under § 109.1303(a) or § 109.1304(a)] will receive one of the following forms of notification:

- (i) Written notice from the Department of a significant deficiency.
- (ii) Notification from a laboratory under § 109.810(b) (relating to reporting and notification requirements) that a groundwater source sample collected under § 109.1303(a) or § 109.1304(a) was found to be *E. coli*-positive.

**[(iii) Direction from the Department that an *E. coli* positive sample collected under § 109.1303(a) requires corrective action.]**

**(3) [Within 30 days of receiving initial notification under paragraph (2), the groundwater system shall consult with the Department regarding the appropriate corrective action unless the Department directs the groundwater system to implement a specific corrective action.] A groundwater system with a significant deficiency or an *E. coli*-positive source water sample shall comply with the requirements of § 109.715 (relating to significant deficiencies).**

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**§ 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—category, timing and delivery of notice).**

**[(1) The Department may require a groundwater system to perform a corrective action as described under § 109.1302(c) (relating to treatment technique requirements).**

**(2) If the Department does not require corrective action under § 109.1302(c), the system shall collect five additional source water samples from the same source within 24 hours of being notified of the *E. coli*-positive sample. If one of the additional samples collected under this paragraph is *E. coli*-positive, the groundwater system shall perform a corrective action as described under § 109.1302(c).**

**(3) The system shall comply with Tier 1 public notification requirements under § 109.408 (relating to Tier 1 category, timing and delivery of notice).]**

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§ 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.

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(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**. The system shall resume continuous residual disinfectant monitoring within 14 days.

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§ 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):

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(ii) That experiences a breakdown in treatment shall notify the Department within 1 hour after the water system learns of the violation or the situation and provide public notice in accordance with § 109.408 (relating to Tier 1 public notice—categories, timing and delivery). A breakdown in treatment occurs whenever the system fails to meet, for greater than 4 [**continuous**] hours **of operation**, any Department-specified requirements relating to:

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