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SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD

PART 611
PRIMARY DRINKING WATER STANDARDS

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AUTHORITY: Implementing Sections 7.2, 17, and 17.5 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 17, 17.5, and 27].

SOURCE: Adopted in R88-26 at 14 Ill. Reg. 16517, effective September 20, 1990; amended in R90-21 at 14 Ill. Reg. 20448, effective December 11, 1990; amended in R90-13 at 15 Ill. Reg. 1562, effective January 22, 1991; amended in R91-3 at 16 Ill. Reg. 19010, effective December 1, 1992; amended in R92-3 at 17 Ill. Reg. 7796, effective May 18, 1993; amended in R93-1 at 17 Ill. Reg. 12650, effective July 23, 1993; amended in R94-4 at 18 Ill. Reg. 12291, effective July 28, 1994; amended in R94-23 at 19 Ill. Reg. 8613, effective June 20, 1995; amended in R95-17 at 20 Ill. Reg. 14493, effective October 22, 1996; amended in R98-2 at 22 Ill. Reg. 5020, effective March 5, 1998; amended in R99-6 at 23 Ill. Reg. 2756, effective February 17, 1999; amended in R99-12 at 23 Ill. Reg. 10348, effective August 11, 1999; amended in R00-8 at 23 Ill. Reg. 14715, effective December 8, 1999; amended in R00-10 at 24 Ill. Reg. 14226, effective September 11, 2000; amended in R01-7 at 25 Ill. Reg. 1329, effective January 11, 2001; amended in R01-20 at 25 Ill. Reg. 13611, effective October 9, 2001; amended in R02-5 at 26 Ill. Reg. 3522, effective February 22, 2002; amended in R03-4 at 27 Ill. Reg. 1183, effective January 10, 2003; amended in R03-15 at 27 Ill. Reg. 16447, effective October 10, 2003; amended in R04-3 at 28 Ill. Reg. 5269, effective March 10, 2004; amended in R04-13 at 28 Ill. Reg. 12666, effective August 26, 2004; amended in R05-6 at 29 Ill. Reg. 2287, effective January 28, 2005; amended in R06-15 at 30 Ill. Reg. 17004, effective October 13, 2006; amended in R07-2/R07-11 at 31 Ill. Reg. 11757, effective July 27, 2007; amended in R08-7/R08-13 at 33 Ill. Reg. 633, effective December 30, 2008; amended in R10-1/R10-17/R11-6 at 34 Ill. Reg. 19848, effective December 7, 2010; amended in R12-4 at 36 Ill. Reg. 36 Ill. Reg. 7110, effective April 25, 2012; amended in R13-2 at 37 Ill. Reg. 1978, effective February 4, 2013; amended in R14-8 at 38 Ill. Reg. 3608, effective January 27, 2014; amended in R14-9 at 38 Ill. Reg. 9792, effective April 21, 2014; amended in R15-6 at 39 Ill. Reg. 3713, effective February 24, 2015; amended in R15-23 at 39 Ill. Reg.15144, effective November 9, 2015; amended in R16-4 at 39 Ill. Reg. 15352, effective November 13, 2015; amended at __ Ill. Reg. _____, effective _____.

SUBPART A: GENERAL

Section 611.111 Relief Equivalent to SDWA Section 1415(a) Variances

This Section is intended to describe how the Board grants State relief equivalent to that available from USEPA under section 1415(a)(1)(A) and (a)(1)(B) of the SDWA (42 USC 300g-4(a)(1)(A) and (a)(1)(B)). SDWA section 1415 variances do not require ultimate compliance within five years in every situation. Variances under Sections 35through 38~~37~~ of the Act [415 ILCS 5/35-

38~~37~~] do require compliance within five years in every case. Consequently, a PWS may have the option of seeking State regulatory relief equivalent to a SDWA section 1415 variance through one of three procedural mechanisms: a variance under Sections 35through 38~~37~~of the Act [415 ILCS 5/35-38~~37~~] and Subpart B of 35 Ill. Adm. Code 104; a site-specific rule under Sections 27and 28 of the Act [415 ILCS 5/27-28] and 35 Ill. Adm. Code 102; or an adjusted standard under Section 28.1 of the Act [415 ILCS 5/28.1] and Subpart D of 35 Ill. Adm. Code 104.

a) The Board will grant a PWS a variance, a site-specific rule, or an adjusted standard from an MCL or a treatment technique pursuant to this Section.

1) The PWS must file a petition pursuant to 35 Ill. Adm. Code 102 or 104, as applicable.

2) If a State requirement does not have a federal counterpart, the Board may grant relief from the State requirements without following this Section.

b) Relief from an MCL.

1) As part of the justification for relief from an MCL under this Section, the PWS must demonstrate the following:

A) Because of characteristics of the raw water sources and alternative sources that are reasonably available to the system, the PWS cannot meet the MCL; and

B) The PWS will install or has installed the best available technology (BAT) (as identified in Subpart F of this Part), treatment technique, or other means that the Agency finds available. BAT may vary depending on the following:

i) The number of persons served by the system;

ii) Physical conditions related to engineering feasibility; and

iii) Costs of compliance; and

C) The variance will not result in an unreasonable risk to health.

2) In any order granting relief under this subsection, the Board will prescribe a schedule for the following:

A) Compliance, including increments of progress, by the PWS, with each MCL with respect to which the relief was granted; and

B) Implementation by the PWS of each additional control measure for each MCL with respect to which the relief is granted, during the

period ending on the date compliance with such requirement is required.

3) Schedule of compliance for relief from an MCL.

A) A schedule of compliance will require compliance with each MCL with respect to which the relief was granted as expeditiously as practicable.

B) If the Board prescribes a schedule requiring compliance with an MCL for which the relief is granted later than five years from the date of issuance of the relief, the Board will do the following:

i) Document its rationale for the extended compliance schedule;

ii) Discuss the rationale for the extended compliance schedule in the required public notice and opportunity for public hearing; and

iii) Provide the shortest practicable time schedule feasible under the circumstances.

c) Relief from a treatment technique requirement.

1) As part of the justification for relief from a treatment technique requirement under this Section, the PWS must demonstrate that the treatment technique is not necessary to protect the health of persons served because of the nature of the raw water source.

2) The Board may prescribe monitoring and other requirements as a condition for relief from a treatment technique requirement.

d) The Board will hold at least one public hearing. In addition the Board will accept comments as appropriate pursuant to 35 Ill. Adm. Code 102 or 104.

e) The Board will not grant relief from any of the following:

1) From the MCLs for total coliforms and E. coli. Until March 31, 2016, the Board may grant a variance from the total coliform MCL of Section 611.325 for PWSs that prove that the violation of the total coliform MCL is due to persistent growth of total coliform in the distribution system, rather than from fecal or pathogenic contamination, from a treatment lapse or deficiency, or from a problem in the operation or maintenance of the distribution system. Effective March 31, 2016, when the total coliform MCL is no longer effective, the Board can no longer grant relief from the total coliform MCL.

BOARD NOTE: As provided in Section 611.131(c)(1) and 40 CFR 142.304(a), a small system variance is not available for rules that address microbial contaminants, which include Subparts B, R, S, X, Z, and AA of this Part.

2) From any of the treatment technique requirements of Subpart B of this Part.

3) From the residual disinfectant concentration (RDC) requirements of Sections 611.241(c) and 611.242(b).

f) The Agency must promptly send USEPA the opinion and order of the Board granting relief pursuant to this Section. The Board may reconsider and modify a grant of relief, or relief conditions, if USEPA notifies the Board of a finding pursuant to section 1415 of the SDWA (42 USC 300g-4).

g) In addition to the requirements of this Section, the provisions of Section 611.130 or 611.131 may apply to relief granted pursuant to this Section.

BOARD NOTE: Derived from 40 CFR 141.4 (2013), from section 1415(a)(1)(A) and (a)(1)(B) of the SDWA (42 USC 300g-4(a)(1)(A) and (a)(1)(B) (2011)) and from the "Guidance Manual for Filtration and Disinfection," incorporated by reference in Section 611.102 and available from USEPA, NSCEP. USEPA has established a procedure at 40 CFR 142.23 (2013) to review and potentially modify or nullify state determinations granting relief from NPDWRs where USEPA finds that the state has abused its discretion or failed to prescribe required schedules for compliance in a substantial number of instances.

(Source: Amended at __ Ill. Reg. _____, effective _____)

SUBPART F: MAXIMUM CONTAMINANT LEVELS (MCLs) AND MAXIMUM RESIDUAL DISINFECTANT LEVELS (MRDLs)

Section 611.312 Maximum Contaminant Levels (MCLs) for Disinfection Byproducts (DBPs)

a) Bromate and chlorite. The maximum contaminant levels (MCLs) for bromate and chlorite are as follows:

Disinfection byproduct	MCL (mg/l)
Bromate	0.010
Chlorite	1.0

1) Compliance dates for CWSs and NTNCWSs. A Subpart B system supplier that serves 10,000 or more persons must comply with this subsection (a). A Subpart B system supplier that serves fewer than 10,000

persons and systems using only groundwater not under the direct influence of surface water must comply with this subsection (a).

2) USEPA has identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for bromate and chlorite identified in this subsection (a):

Disinfection Byproduct	Best Available Technology
Bromate	Control of ozone treatment process to reduce production of bromate.
Chlorite	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

b) TTHM and HAA5.

~~1)~~ ~~Subpart I – Running annual average compliance.~~

~~A)~~ ~~Compliance dates. A Subpart B system supplier that serves 10,000 or more persons must comply with this subsection (b)(1) beginning January 1, 2002. A Subpart B system supplier that serves fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this subsection (b)(1). All systems must comply with these MCLs until the date specified for Subpart Y compliance in Section 611.980(c).~~

~~Disinfection Byproduct~~	~~MCL (mg/l)~~
~~Total trihalomethanes (TTHM)~~	~~0.080~~
~~Haloacetic acids (five) (HAA5)~~	~~0.060~~

~~B)~~ ~~USEPA has identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this subsection (b)(1):~~

~~Disinfection Byproduct~~	~~Best Available Technology~~
~~Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5)~~	~~Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.~~

~~2)~~ Subpart Y—Locational running annual average compliance.

1)~~A)~~ Compliance dates. The Subpart Y MCLs for TTHM and HAA5 must be complied with as a locational running annual average at each monitoring location beginning the date specified for Subpart Y compliance in Section 611.970(d)~~611.980(c)~~.

Disinfection Byproduct	MCL (mg/l)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060

2)~~B)~~ USEPA has identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this subsection (b)(2) for any supplier that disinfects its source water:

Disinfection Byproduct	Best Available Technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5)	Enhanced coagulation or enhanced softening, plus GAC10; or nanofiltration with a molecular weight cutoff ≤1000 Daltons; or GAC20.

3)~~C)~~ USEPA has identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this subsection (b)(2) for consecutive systems and applies only to the disinfected water that a consecutive system buys or otherwise receives from a wholesale system:

Disinfection Byproduct	Best Available Technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5)	Any system that serves 10,000 or more persons: Improved distribution system and storage tank management to reduce residence time, plus the use of chloramines for

disinfectant residual maintenance; or
Any system that serves fewer than 10,000 persons: Improved distribution system and storage tank management to reduce residence time.

BOARD NOTE: Derived from 40 CFR 141.64 (2006).

(Source: Amended at __ Ill. Reg. _____, effective _____)

Section 611.325 Microbiological Contaminants

a) ~~Until March 31, 2016, the MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.~~

~~1)~~ ~~For a supplier that collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the supplier is in compliance with the MCL for total coliforms.~~

~~2)~~ ~~For a supplier that collects fewer than 40 samples per month, if no more than one sample collected during a month is a total coliform-positive, the supplier is in compliance with the MCL for total coliforms.~~

~~b)~~ ~~Until March 31, 2016, 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. For purposes of the public notification requirements in Subpart V of this Part, this is a violation that may pose an acute risk to health.~~

~~c)~~ Beginning April 1, 2016, a supplier is in compliance with the MCL for E. coli for samples taken under the provisions of Subpart AA of this Part, unless any of the conditions identified in subsections (c)(1) through (c)(4) of this Section occur. For purposes of the public notification requirements in Subpart V of this Part, violation of the MCL may pose an acute risk to health.

1) The supplier has an E. coli-positive repeat sample following a total coliform-positive routine sample.

2) The supplier has a total coliform-positive repeat sample following an E. coli-positive routine sample.

3) The supplier fails to take all required repeat samples following an E. coli-positive routine sample.

4) The supplier fails to test for E. coli when any repeat sample tests positive for total coliform.

~~d) Until March 31, 2016, a supplier must determine compliance with the MCL for total coliforms in subsections (a) and (b) of this Section for each month in which it is required to monitor for total coliforms. Beginning April 1, 2016, a supplier must determine compliance with the MCL for E. coli in subsection (c) of this Section for each month in which it is required to monitor for total coliforms.~~

b)~~e)~~ BATs for achieving compliance with the MCL for total coliforms in subsections (a) and (b) of this Section and for achieving compliance with the maximum contaminant level for E. coli in subsection (c) of this Section are the following:

1) Protection of wells from fecal contamination by appropriate placement and construction;

2) Maintenance of RDC throughout the distribution system;

3) Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross connection control, and continual maintenance positive water pressure in all parts of the distribution system;

4) Filtration and disinfection of surface water, as described in Subparts B, R, X, and Z of this Part, or disinfection of groundwater, as described in Subpart S of this Part, using strong oxidants such as chlorine, chlorine dioxide, or ozone; or

5) For systems using groundwater, compliance with the wellhead protection program, after USEPA approves the program.

c)~~f)~~ USEPA has identified, pursuant to 42 USC 300g-1, the technology, treatment techniques, or other means available identified in subsection (e) of this Section as affordable technology, treatment techniques, or other means available to suppliers serving 10,000 or fewer people for achieving compliance with the MCL for total coliforms in subsections (a) and (b) of this Section and for achieving compliance with the MCL for E. coli in subsection (c) of this Section.

BOARD NOTE: Derived from 40 CFR 141.63 (2013).

(Source: Amended at __ Ill. Reg. _____, effective _____)

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.521 Routine Coliform Monitoring (Repealed)

~~a) Suppliers must collect total coliform samples at sites that are representative of water throughout the distribution system according to a written sample siting plan, which must be approved by a SEP issued pursuant to Section 611.110.~~

~~b) The monitoring frequency for total coliforms for CWSs is based on the population served by the CWS, as set forth in Table A of this Part.~~

~~c) The monitoring frequency for total coliforms for non-CWSs is as follows:~~

~~1) A non-CWS using only groundwater (except groundwater under the direct influence of surface water, as determined in Section 611.212) and serving 1,000 persons or fewer must monitor each calendar quarter that the system provides water to the public, except that the Agency must reduce this monitoring frequency if a sanitary survey shows that the system is free of sanitary defects. The Agency cannot reduce the monitoring frequency for a non-CWS using only groundwater (except groundwater under the direct influence of surface water) and serving 1,000 persons or fewer to less than once per year.~~

~~2) A non-CWS using only groundwater (except groundwater under the direct influence of surface water) and serving more than 1,000 persons during any month must monitor at the same frequency as a like-sized CWS, as specified in subsection (b) of this Section, except the Agency must reduce this monitoring frequency for any month the system serves 1,000 persons or fewer. The Agency cannot reduce the monitoring to less than once per year. For systems using groundwater under the direct influence of surface water, subsection (c)(4) of this Section applies.~~

~~3) A non-CWS using surface water, in total or in part, must monitor at the same frequency as a like-sized CWS, as specified in subsection (b) of this Section, regardless of the number of persons it serves.~~

~~4) A non-CWS using groundwater under the direct influence of surface water must monitor at the same frequency as a like-sized CWS, as specified in subsection (b) of this Section. The supplier must begin monitoring at this frequency beginning six months after Public Health determines that the groundwater is under the direct influence of surface water.~~

~~d) The supplier must collect samples at regular time intervals throughout the month, except that a supplier that uses only groundwater (except groundwater under the~~

~~direct influence of surface water) and serves 4,900 persons or fewer, may collect all required samples on a single day if they are taken from different sites.~~

~~e) A PWS that uses surface water or groundwater under the direct influence of surface water, and does not practice filtration in compliance with Subpart B of this Part, must collect at least one sample near the first service connection each day the turbidity level of the source water, measured as specified in Section 611.532(b), exceeds 1 NTU. This sample must be analyzed for the presence of total coliforms. When one or more turbidity measurements in any day exceed 1 NTU, the supplier must collect this coliform sample within 24 hours of the first exceedence, unless the Agency has determined, by a SEP issued pursuant to Section 611.110, that the supplier, for logistical reasons outside the supplier's control, cannot have the sample analyzed within 30 hours of collection. Sample results from this coliform monitoring must be included in determining compliance with the MCL for total coliforms in Section 611.325.~~

~~f) Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement or repair, must not be used to determine compliance with the MCL for total coliforms in Section 611.325.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(a) (2002).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

Section 611.522 Repeat Coliform Monitoring (Repealed)

~~a) If a routine sample is total coliform positive, the supplier must collect a set of repeat samples within 24 hours of being notified of the positive result. A supplier that collects more than one routine sample per month must collect no fewer than three repeat samples for each total coliform positive sample found. A supplier that collects one routine sample per month or fewer must collect no fewer than four repeat samples for each total coliform positive sample found. The Agency must extend the 24 hour limit on a case by case basis if it determines that the supplier has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. In the case of an extension, the Agency must specify how much time the supplier has to collect the repeat samples.~~

~~b) The supplier must collect at least one repeat sample from the sampling tap where the original total coliform positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. If a total coliform positive sample is at the end of the distribution system, or one away from the end of the distribution system, the Agency may waive the requirement to collect at least one repeat sample upstream or downstream of the original sampling site.~~

c) The supplier must collect all repeat samples on the same day, except that the Agency must allow a supplier with a single service connection to collect the required set of repeat samples over a four-day period or to collect a larger volume repeat samples in one or more sample containers of any size, as long as the total volume collected is at least 400 ml (300 ml for PWSs that collect more than one routine sample per month).

d) If one or more repeat samples in the set is total coliform-positive, the supplier must collect an additional set of repeat samples in the manner specified in subsections (a) through (c) of this Section. The additional samples must be collected within 24 hours of being notified of the positive result, unless the Agency extends the limit as provided in subsection (a) of this Section. The supplier must repeat this process until either total coliforms are not detected in one complete set of repeat samples or the supplier determines that the MCL for total coliforms in Section 611.325 has been exceeded and notifies the Agency.

e) If a supplier collecting fewer than five routine samples/month has one or more total coliform-positive samples and the Agency does not invalidate the samples under Section 611.523, the supplier must collect at least five routine samples during the next month the supplier provides water to the public, unless the Agency determines that the conditions of subsection (e)(1) or (e)(2) of this Section are met. This does not apply to the requirement to collect repeat samples in subsections (a) through (d) of this Section. The supplier does not have to collect the samples if the following occurs:

1) The Agency performs a site visit before the end of the next month the supplier provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the Agency to determine whether additional monitoring or any corrective action is needed.

2) The Agency has determined why the sample was total coliform-positive and establishes that the supplier has corrected the problem or will correct the problem before the end of the next month the supplier serves water to the public.

A) The Agency must document this decision in writing, and make the document available to USEPA and the public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the supplier has taken or will take to correct the problem.

B) The Agency cannot waive the requirement to collect five routine samples the next month the supplier provides water to the public

~~solely on the grounds that all repeat samples are total coliform-negative.~~

~~C) Under this subsection, a supplier must still take at least one routine sample before the end of the next month it serves water to the public and use it to determine compliance with the MCL for total coliforms in Section 611.325, unless the Agency has determined that the supplier has corrected the contamination problem before the supplier took the set of repeat samples required in subsections (a) through (d) of this Section, and all repeat samples were total coliform-negative.~~

~~f) After a supplier collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine samples from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the supplier may count the subsequent samples as a repeat sample instead of as a routine sample.~~

~~g) Results of all routine and repeat samples not invalidated pursuant to Section 611.523 must be included in determining compliance with the MCL for total coliforms in Section 611.325.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(b) (2002).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

Section 611.523 Invalidation of Total Coliform Samples (Repealed)

~~A total coliform positive sample invalidated under this Section does not count towards meeting the minimum monitoring requirements.~~

~~a) The Agency must invalidate a total coliform positive sample only if the conditions of subsection (a)(1), (a)(2), or (a)(3) of this Section are met.~~

~~1) The laboratory establishes that improper sample analysis caused the total coliform positive result.~~

~~2) The Agency, on the basis of the results of repeat samples collected as required by Section 611.522(a) through (d) determines that the total coliform positive sample resulted from a domestic or other non-distribution system plumbing problem. The Agency cannot invalidate a sample on the basis of repeat sample results unless all repeat samples collected at the same tap as the original total coliform positive sample are also total coliform positive, and all repeat samples collected within five service connections of the original tap are total coliform negative (e.g., Agency cannot invalidate a total coliform positive sample on the basis of~~

~~repeat samples if all the repeat samples are total coliform-negative, or if the supplier has only one service connection).~~

~~3) The Agency determines that there are substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system. In this case, the supplier must still collect all repeat samples required under Section 611.522(a) through (d) and use them to determine compliance with the MCL for total coliforms in Section 611.325. To invalidate a total coliform-positive sample under this subsection, the decision with the rationale for the decision must be documented in writing. The Agency must make this document available to USEPA and the public. The written documentation must state the specific cause of the total coliform-positive sample, and what action the supplier has taken, or will take, to correct this problem. The Agency must not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative.~~

~~b) A laboratory must invalidate a total coliform sample (unless total coliforms are detected) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the Multiple-Tube Fermentation Technique), produces a turbid culture in the absence of an acid reaction in the P-A Coliform Test, or exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., Membrane Filter Technique). If a laboratory invalidates a sample because of such interference, the supplier must collect another sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The supplier must continue to re-sample within 24 hours and have the samples analyzed until it obtains a valid result. The Agency must waive the 24-hour time limit on a case-by-case basis, if it is not possible to collect the sample within that time.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(c) (2002).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

Section 611.524 Sanitary Surveys <u>(Repealed)</u>

~~a) Requirement to conduct a sanitary survey.~~

~~1) Suppliers that do not collect five or more routine samples per month must undergo a sanitary survey at least once every five years, except that non-CWS suppliers using only disinfected groundwater, from a source that is not under the direct influence of surface water, must undergo a sanitary survey at least once every ten years. The Agency or, for a non-CWS, Public Health must review the results of each sanitary survey to determine~~

~~whether the existing monitoring frequency is adequate and what additional measures, if any, the supplier needs to undertake to improve drinking water quality.~~

~~2) In conducting a sanitary survey of a PWS using groundwater, information on sources of contamination within the delineated wellhead protection area that was collected in the course of developing and implementing the wellhead protection program should be considered instead of collecting new information, if the information was collected since the last time the PWS was subject to a sanitary survey.~~

~~b) Sanitary surveys must be performed by the Agency. The PWS is responsible for ensuring that the survey takes place.~~

~~c) A sanitary survey conducted by the Agency for the purposes of Subpart S of this Part may be used to meet the sanitary survey requirements of this Section.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(d) (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

Section 611.525 Fecal Coliform and E. Coli Testing (Repealed)

~~a) If any routine or repeat sample is total coliform positive, the supplier must analyze that total coliform positive culture medium to determine if fecal coliforms are present, except that the supplier may test for E. coli in lieu of fecal coliforms. If fecal coliforms or E. coli are present, the supplier must notify the Agency by the end of the day when the supplier is notified of the test result, unless the supplier is notified of the result after the Agency office is closed, in which case the supplier must notify the Agency before the end of the next business day. The supplier need not notify the Agency if the original sample was analyzed in an Agency laboratory.~~

~~b) The Agency may allow a supplier, on a case by case basis, to forgo fecal coliform or E. coli testing on a total coliform positive sample if that supplier assumes that the total coliform positive sample is fecal coliform positive or E. coli positive. Accordingly, the supplier must notify the Agency as specified in subsection (a) of this Section and the provisions of Section 611.325(b) apply.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(e) (2002).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

Section 611.526 Analytical Methodology (Repealed)

~~a) The standard sample volume required for total coliform analysis, regardless of analytical method used, is 100 mL.~~

~~b) Suppliers need only determine the presence or absence of total coliforms; a determination of total coliform density is not required.~~

~~c) Suppliers must conduct total coliform analyses in accordance with one of the following analytical methods, incorporated by reference in Section 611.102, or in accordance with an alternative method approved by the Agency pursuant to Section 611.480 (the time from sample collection to initiation of analysis may not exceed 30 hours, and the supplier is encouraged but not required to hold samples below 10° C during transit):~~

~~1) Total Coliform Fermentation Technique, as set forth in Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Methods 9221 A and B, as follows:~~

~~A) Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth if the supplier conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested and this comparison demonstrates that the false positive rate and false negative rate for total coliforms, using lactose broth, is less than 10 percent;~~

~~B) If inverted tubes are used to detect gas production, the media should cover these tubes at least one half to two thirds after the sample is added; and~~

~~C) No requirement exists to run the completed phase on 10 percent of all total coliform positive confirmed tubes.~~

~~2) Total Coliform Membrane Filter Technique, as set forth in Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Methods 9222 A, B, and C.~~

~~3) Presence Absence (P A) Coliform Test, as set forth in: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9221 D, as follows:~~

~~A) No requirement exists to run the completed phase on 10 percent of all total coliform positive confirmed tubes; and~~

~~B) Six times formulation strength may be used if the medium is filter sterilized rather than autoclaved.~~

~~4) ONPG MUG test: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9223. (The ONPG MUG test is also known as the Colilert® Test.)~~

5) Colisure™ Test (Colilert® Test). (The Colisure™ Test may be read after an incubation time of 24 hours.)

BOARD NOTE: USEPA included the P-A Coliform and Colisure™ Tests for testing finished water under the coliform rule, but did not include them for the purposes of the surface water treatment rule, under Section 611.531, for which quantitation of total coliforms is necessary. For these reasons, USEPA included Standard Methods, Method 9221 C for the surface water treatment rule, but did not include it for the purposes of the total coliform rule, under this Section.

6) E*Colite® Test (Charm Sciences, Inc.).

7) m-ColiBlue24® Test (Hatch Company).

8) Readycult® 2000.

9) Chromocult® Method.

10) Colitag® Test.

11) Modified Colitag™ Method.

12) Tecta EC/TC P-A Test.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 9221-A, B, and D; 9222-A, B, and C; and 9223 as approved alternative methods in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Modified Colitag™ Method as an approved alternative method in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 9221-A and B and 9223-B as approved alternative methods for total coliforms in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Methods 9221-A and B-06 and 9223-B-04 as approved alternative methods for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Methods 9221-A and B and 9223-B are the same version as Standard Methods Online, Methods 9221-A and B-06 and 9223-B-04, the Board has not listed the Standard Methods Online versions separately. USEPA added Tecta EC/TC P-A Test as an approved alternative method for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

d) This subsection corresponds with 40 CFR 141.21(f)(4), which USEPA has marked "reserved." This statement maintains structural consistency with the federal regulations.

e) Suppliers must conduct fecal coliform analysis in accordance with the following procedure:

1) When the MTF Technique or P-A Coliform Test is used to test for total coliforms, shake the lactose-positive presumptive tube or P-A vigorously and transfer the growth with a sterile 3-mm loop or sterile applicator stick into brilliant green lactose bile broth and EC medium, defined below, to determine the presence of total and fecal coliforms, respectively.

2) For approved methods that use a membrane filter, transfer the total coliform-positive culture by one of the following methods: remove the membrane containing the total coliform colonies from the substrate with sterile forceps and carefully curl and insert the membrane into a tube of EC medium; (the laboratory may first remove a small portion of selected colonies for verification); swab the entire membrane filter surface with a sterile cotton swab and transfer the inoculum to EC medium (do not leave the cotton swab in the EC medium); or inoculate individual total coliform-positive colonies into EC medium. Gently shake the inoculated tubes of EC medium to insure adequate mixing and incubate in a waterbath at 44.5±0.2° C for 24±2 hours. Gas production of any amount in the inner fermentation tube of the EC medium indicates a positive fecal coliform test.

3) EC medium is described in Standard Methods, 18th ed., 19th ed., 20th, or 22nd ed., Method 9221 E.

4) Suppliers need only determine the presence or absence of fecal coliforms; a determination of fecal coliform density is not required.

BOARD NOTE: USEPA added Standard Methods, 22nd ed., Method 9221 E as an approved alternative method for fecal coliforms in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 9221 E-06 as an approved alternative method for fecal coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9221 E is the same version as Standard Methods Online, Method 9221 E-06, the Board has not listed the Standard Methods Online version separately.

f) Suppliers must conduct analysis of E. coli in accordance with one of the following analytical methods, incorporated by reference in Section 611.102:

1) EC medium supplemented with 50 µg/ℓ of MUG (final concentration). EC medium is as described in subsection (e) of this Section. MUG may be added to EC medium before autoclaving. EC medium supplemented with 50 µg/ℓ MUG is commercially available. At least 10 mℓ of EC medium supplemented with MUG must be used. The inner inverted fermentation tube may be omitted. The procedure for transferring a total coliform-positive culture to EC medium supplemented with MUG is as in subsection (e) of this Section for transferring a total coliform-positive

culture to EC medium. Observe fluorescence with an ultraviolet light (366 nm) in the dark after incubating tube at 44.5±2° C for 24±2 hours; or

2) Nutrient agar supplemented with 100 µg/ℓ MUG (final concentration), as described in Standard Methods, 19th, 20th, or 22nd ed., Method 9222 G. This test is used to determine if a total coliform-positive sample, as determined by the MF technique, contains E. coli. Alternatively, Standard Methods, 18th ed., Method 9221 B may be used if the membrane filter containing a total coliform-positive colony or colonies is transferred to nutrient agar, as described in Method 9221 B (paragraph 3), supplemented with 100 µg/ℓ MUG. If Method 9221 B is used, incubate the agar plate at 35° Celsius for four hours, then observe the colony or colonies under ultraviolet light (366 nm) in the dark for fluorescence. If fluorescence is visible, E. coli are present.

3) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in Appendix D of this Part. (The Colilert® Test (Colisure™ Test) is a MMO-MUG test.) If the MMO-MUG test is total coliform positive after a 24 hour incubation, test the medium for fluorescence with a 366-nm ultraviolet light (preferably with a six-watt lamp) in the dark. If fluorescence is observed, the sample is E. coli-positive. If fluorescence is questionable (cannot be definitively read) after 24 hours incubation, incubate the culture for an additional four hours (but not to exceed 28 hours total), and again test the medium for fluorescence. The MMO-MUG test with hepes buffer is the only approved formulation for the detection of E. coli.

4) The Colisure™ Test (Colilert® Test).

5) The membrane filter method with MI agar.

6) The E*Colite® Test.

7) The m-ColiBlue24® Test.

8) Readycult® 2000.

9) Chromocult® Method.

10) Colitag® Test.

11) ONPG-MUG Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B.

12) Modified Colitag™ Method.

13) Tecta EC/TC P-A Test.

~~BOARD NOTE: USEPA added Standard Methods, 20th or 21st ed., Method 9223 B and Standard Methods Online, Method 9223 B 97 as approved alternative methods for E. coli in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). Because Standard Methods, 21st ed., Method 9223 B is the same version as Standard Methods Online, Method 9223 B 97, the Board has not listed the Standard Methods Online version separately. USEPA added Standard Methods, 22nd ed., Method 9223 B as an approved alternative method for E. coli in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 9223 B 04 as an approved alternative method for E. coli in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9223 B is the same version as Standard Methods Online, Method 9223 B 04, the Board has not listed the Standard Methods Online versions separately. USEPA added Tecta EC/TC P A Test as an approved alternative method for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).~~

~~g) As an option to the method set forth in subsection (f)(3) of this Section, a supplier with a total coliform positive, MUG negative MMO MUG test may further analyze the culture for the presence of E. coli by transferring a 0.1 mL, 28 hour MMO MUG culture to EC medium + MUG with a pipet. The formulation and incubation conditions of the EC medium + MUG, and observation of the results, are described in subsection (f)(1) of this Section.~~

~~h) This subsection corresponds with 40 CFR 141.21(f)(8), a central listing of all documents incorporated by reference into the federal microbiological analytical methods. The corresponding Illinois incorporations by reference are located at Section 611.102. This statement maintains structural parity with USEPA regulations.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(f) and appendix A to 40 CFR 141 (2014).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

Section 611.527 Response to Violation (Repealed)

~~a) A supplier that has exceeded the MCL for total coliforms in Section 611.325 must report the violation to the Agency no later than the end of the next business day after it learns of the violation, and notify the public in accordance with Subpart V.~~

~~b) A supplier that has failed to comply with a coliform monitoring requirement, including the sanitary survey requirement, must report the monitoring violation to the Agency within ten days after the supplier discovers the violation, and notify the public in accordance with Subpart V of this Part.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(g) (2002).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

Section 611.528 Transition from Subpart L to Subpart AA Requirements (Repealed)

~~The provisions of Sections 611.521 and 611.524 apply until March 31, 2016. The provisions of Sections 611.522, 611.523, 611.525, 611.526, and 611.527 apply until all required repeat monitoring under Section 611.522 and fecal coliform or E. coli testing under Section 611.525 that was initiated by a total coliform positive sample taken before April 1, 2016 is completed, as well as analytical method, reporting, recordkeeping, public notification, and consumer confidence report requirements associated with that monitoring and testing. Beginning April 1, 2016, the provisions of Subpart AA of this Part apply, with suppliers required to begin regular monitoring at the same frequency as the system specific frequency required on March 31, 2016.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(h) (2013).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.591 Violation of a State MCL (Repealed)

~~This Section applies to old MCLs that are marked as "additional State requirements" at Section 611.300, and for which no specific monitoring, reporting, or public notice requirements are specified below. If the result of analysis pursuant to this Part indicates that the level of any contaminant exceeds the old MCL, the CWS supplier shall do the following:~~

~~a) Report to the Agency within seven days, and initiate three additional analyses at the same sampling point within one month;~~

~~b) Notify the Agency and give public notice as specified in Subpart T of this Part, when the average of four analyses, rounded to the same number of significant figures as the old MCL for the contaminant in question, exceeds the old MCL; and~~

~~c) Monitor, after public notification, at a frequency designated by the Agency, and continue monitoring until the old MCL has not been exceeded in two consecutive samples, or until a monitoring schedule as a condition of a variance or enforcement action becomes effective.~~

~~BOARD NOTE: This is an additional State requirement.~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)

Section 611.TABLE A Total Coliform Monitoring Frequency (Repealed)

~~TOTAL COLIFORM MONITORING FREQUENCY FOR CWSs~~

~~Population Served~~			~~Minimum Number of Samples per Month~~
~~25~~	~~to~~	~~1000~~	~~1~~
~~1001~~	~~to~~	~~2500~~	~~2~~
~~2501~~	~~to~~	~~3300~~	~~3~~
~~3301~~	~~to~~	~~4100~~	~~4~~
~~4101~~	~~to~~	~~4900~~	~~5~~
~~4901~~	~~to~~	~~5800~~	~~6~~
~~5801~~	~~to~~	~~6700~~	~~7~~
~~6701~~	~~to~~	~~7600~~	~~8~~
~~7601~~	~~to~~	~~8500~~	~~9~~
~~8501~~	~~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~~

~~PWSs that have at least 15 service connections, but serve fewer than 25 persons are included are included in the entry for 25 to 1000 persons served.~~

~~BOARD NOTE: Derived from 40 CFR 141.21(a)(2) (2012).~~

(Source: Repealed at __ Ill. Reg. _____, effective _____)