

## POLLUTION CONTROL BOARD

## NOTICE OF PROPOSED AMENDMENTS

- 1) Heading of the Part: Primary Drinking Water Standards
- 2) Code Citation: 35 Ill. Adm. Code 611
- 3) 

<u>Section Numbers:</u>	<u>Proposed Actions:</u>
611.100	Amendment
611.101	Amendment
611.102	Amendment
611.103	Amendment
611.105	Amendment
611.108	Amendment
611.109	Amendment
611.110	Amendment
611.111	Amendment
611.112	Amendment
611.113	Amendment
611.114	Amendment
611.120	Repealed
611.121	Amendment
611.125	Amendment
611.126	Amendment
611.130	Amendment
611.131	Amendment
611.160	Amendment
611.161	Amendment
611.201	Repealed
611.202	Repealed
611.211	Amendment
611.212	Amendment
611.213	Amendment
611.220	Amendment
611.230	Repealed
611.231	Amendment
611.232	Repealed
611.233	Amendment
611.240	Amendment
611.241	Repealed
611.242	Amendment
611.250	Amendment

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611.261	Amendment
611.262	Amendment
611.276	Amendment
611.280	Amendment
611.290	Amendment
611.295	Amendment
611.296	Amendment
611.300	Amendment
611.301	Amendment
611.310	Amendment
611.311	Amendment
611.312	Amendment
611.313	Amendment
611.325	Amendment
611.330	Amendment
611.350	Amendment
611.351	Amendment
611.352	Amendment
611.353	Amendment
611.354	Amendment
611.355	Amendment
611.356	Amendment
611.357	Amendment
611.358	Amendment
611.359	Amendment
611.360	Amendment
611.361	Amendment
611.362	New Section
611.363	New Section
611.380	Amendment
611.381	Amendment
611.531	Amendment
611.532	Amendment
611.533	Amendment
611.560	Repealed
611.591	Amendment
611.592	Amendment
611.600	Amendment
611.611	Amendment

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611.641	Amendment
611.645	Amendment
611.648	Amendment
611.720	Amendment
611.731	Amendment
611.732	Amendment
611.733	Amendment
611.740	Amendment
611.741	Amendment
611.742	Amendment
611.801	Amendment
611.802	Amendment
611.840	Amendment
611.883	Amendment
611.884	Amendment
611.901	Amendment
611.902	Amendment
611.923	Amendment
611.954	Amendment
611.1001	Amendment
611.1002	Amendment
611.1006	Amendment
611.1013	Amendment
611.1015	Amendment
611.1052	Amendment
611.1350	New Section
611.1351	New Section
611.1352	New Section
611.1353	New Section
611.1354	New Section
611.1355	New Section
611.1356	New Section
611.1357	New Section
611.1358	New Section
611.1359	New Section
611.1360	New Section
611.1361	New Section
611.APPENDIX G	Amendment
611.APPENDIX H	Amendment

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611.TABLE F	Amendment
611.TABLE G	Repealed
611.TABLE R	New Section
611.TABLE Z	Amendment

- 4) Statutory 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].
- 5) A Complete Description of the Subjects and Issues Involved: The following briefly describes the subjects and issues involved in the docket R21-10 rulemaking which amends Part 611. A comprehensive description is contained in the Board's opinion and order of June 1, 2023, proposing amendments in docket R21-10/R22-2, which opinion and order is available from the address below.

The Board today proposes amendments to Illinois regulations that are “identical in substance” (IIS) to drinking water regulations adopted by the United States Environmental Protection Agency (USEPA) in the second half of 2020 and first half of 2021. USEPA took two actions relating to lead in drinking water and granted summary approval to about 17 additional alternative test procedures (ATPs) for analyzing contaminants in drinking water. The Board now adds these provisions to the Illinois drinking water rules. The Board also includes corrections and revisions that are not directly based on the present USEPA actions, but are needed, and adds them to this proposal. The most significant pertain to the Radionuclides Rule and removing several rules applicable to unfiltered system suppliers using surface water sources and groundwater under the direct influence of surface water. The Board also proposes stylistic changes, including many of the type ordinarily requested by JCAR, and corrections to errors in the text. Finally, the Board finds that additional time is needed to complete the amendments and extends the adoption deadline to October 1, 2023.

Sections 7.2 and 17.5 of the Illinois Environmental Protection Act (Act) [415 ILCS 5/7.2 and 17.5 (2020)] provide for quick adoption by the Board of regulations that are IIS to regulations that USEPA adopts to implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal Safe Drinking Water Act (SDWA) (42 U.S.C. 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (2021)). The National Primary Drinking Water Regulations (NPDWRs) implement these sections of SDWA. SDWA regulations are found at 40 C.F.R. 141 through 143.

The Board specifically requests public comment on the USEPA amendments requiring lead-free drinking water fixtures, revising the Lead and Copper Rule, and incorporating

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new ATPs into the Illinois rules. The Board also specifically requests comments on Board-initiated revisions: correcting the Radionuclides Rule, removing rules pertaining to unfiltered system suppliers, and making other corrections and changes.

The following paragraphs summarize USEPA's actions considered in this consolidated rulemaking in chronological order. Each includes a brief description of any Board action in response. The Board does not generally review the substance of USEPA actions in IIS rulemakings. Rather, the Board considers USEPA rules to ensure appropriate incorporating of the USEPA's requirements into the Illinois rules. Any person interested in the full substance and basis of USEPA's rules should begin by reviewing the associated Federal Register notices and other USEPA resources.

September 1, 2020 (85 Fed. Reg. 54235). USEPA revised standards for lead in plumbing fixtures and plumbing materials. The revised standards are consistent with the 2011 statutory revisions. The Board must incorporate USEPA's changes into the Illinois rules. January 15, 2021 (86 Fed. Reg. 4198). USEPA adopted the Lead and Copper Rule Revisions (LCRR), revising the Lead and Copper Rule (LCR). The Board must incorporate USEPA's changes into the Illinois rules.

March 12, 2021 (86 Fed. Reg. 14003). USEPA delayed the effective date of the January 15, 2021, LCRR until June 17, 2021. The delayed effective date has passed, requiring no Board action. Nevertheless, the Board notes USEPA's delayed date.

May 19, 2021 (86 Fed. Reg. 27226). USEPA updated the Clean Water Act (CWA) methods for effluent analyses. The Board must update the incorporation by reference to 40 C.F.R. 136.3(a) in 35 Ill. Adm. Code 611.102(b) to include USEPA's updates in Illinois' rules.

May 26, 2021 (86 Fed. Reg. 28277). USEPA designated 17 additional ATPs for 4 analyzing drinking water samples. Included are methods for inorganic, volatile organic, synthetic organic, radiochemical, and microbiological contaminants and disinfectant residuals. The Board must incorporate these new methods into Illinois' rules.

June 2, 2021 (86 Fed. Reg. 29526). USEPA corrected its May 26, 2021 designation. The Board must incorporate these corrections into the amendments.

June 16, 2021 (86 Fed. Reg. 31939). USEPA delayed the effective and compliance dates of the LCRR. USEPA delayed the effective date until December 16, 2021, and the

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January 16, 2024, compliance date until October 16, 2024. The Board must incorporate the delayed compliance date into the Illinois rule.

Lead-Free Fixtures Rule USEPA replaced the former rule banning using lead pipes, solder, and flux in 40 C.F.R. 141.43 with extensive new rules in subpart B of 40 C.F.R. 143. Statutory changes in SDWA in 2011 and 2013 prompted USEPA's action. The 2011 change revised the definition of "lead free" in the statutory prohibition on lead plumbing and fixtures. The 2013 change exempted fire hydrants from the ban. USEPA's rule prohibits using any pipe, plumbing fitting or fixture, or lead solder or flux (plumbing material) that is not lead-free as defined under the rule. The rule prohibits introducing any plumbing material to commerce that is not lead-free and requires certification of products sold as lead-free. There are exemptions focused on non-potable use or use where human consumption is unlikely, and the rule does not apply to lead joints necessary to repair cast iron pipes. Any solder containing lead or flux must bear a label stating its use in plumbing providing water for human consumption is illegal. USEPA's rule requires states to implement its use prohibitions and those in the SDWA. USEPA's rule provides that noncompliance may subject a person to enforcement action, and it authorizes USEPA to request information "to determine whether a person has acted or is acting in compliance". It also provides that "information, such as records requested, must be provided to the Administrator at a time and in a format as may be reasonably determined by the Administrator". The Board previously altered the Illinois prohibition against leaded plumbing materials to rely on a national standard. SDWA required USEPA to aid "third-party certifiers" to develop a consensus standard for lead in plumbing materials. After USEPA announced that the National Sanitation Foundation (NSF) Standard 61 was that standard, the Board incorporated that standard by reference in the Illinois rule. The Board later revised the prohibition in response to the federal statutory changes. These changes prompted USEPA's recent new rule prohibiting anything but lead-free plumbing materials. To avoid tying Illinois' rule to an evolving standard, the Board opted to remove the reference to it and define "lead free" using the statutory standard in SDWA. USEPA's new lead-free rule requires manufacturers and importers to certify their products before the latter of September 1, 2023, or when they introduce them into commerce. Manufacturers or importers must have an accredited third-party certification or self-certify their products. Certification requires the products to comply with USEPA's definition of "lead free", but does not require certification to a particular national standard. Although USEPA's discussion of the rule cites NSF/ANSI 37220 several times, the rule refers to the standard as an example in its definition of "accredited third party certification". This is convenient for the Board because USEPA's definition of "lead free" provides the standard and the method for determining compliance. The definition of "accredited third party certification body" determines what entity (other than the

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manufacturer or importer) may provide the required certification. USEPA's rule specifies standards for records retention for certifications and providing them to USEPA for inspection on request, but it does not require that certified products bear any marks substantiating certification or that the manufacturer or importer make this information publicly available.

- 6) Published studies or reports, and sources of underlying data, used to compose this rulemaking: None
- 7) Will this proposed rulemaking replace an emergency rule currently in effect? No
- 8) Does this rulemaking contain an automatic repeal date? No
- 9) Does this proposed rulemaking contain incorporations by reference? Yes

“ASTM D1293-18” means “Standard Test Methods for pH of Water”, approved 2018, referenced in Section 611.611.

“ASTM D1688-17 A” means “Standard Test Methods for Copper in Water”, “Test Method A – Atomic Absorption, Direct”, approved 2017, referenced in Section 611.611.

“ASTM D1688-17 C” means “Standard Test Methods for Copper in Water”, “Test Method C – Atomic Absorption, Graphite Furnace”, approved 2017, referenced in Section 611.611.

“ASTM D3223-17” means “Standard Test Method for Total Mercury in Water”, approved 2017, referenced in Section 611.611.

“ASTM D3454-18” means “Standard Test Method for Radium-226 in Water”, approved 2005, referenced in Section 611.720.

“ASTM D3697-17” means “Standard Test Method for Antimony in Water”, approved 2017, referenced in Section 611.611.

“ASTM D4327-17” means “Standard Test Method for Anions in Water by Ion Chromatography”, approved 2017, referenced in Section 611.611.

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“ASTM D6919-17” means “Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography”, approved 2017, referenced in Section 611.611.

Maine Methods. Available from Maine Health and Environmental Testing Laboratory, 221 State Street, Augusta, ME 04333 (207-287-2727).

“ME 531 (19)” means “Measurement of N-Methylcarbamoyloximes and N-Methylcarbamates in Drinking Water by LC-MS/MS”, version 1.0 (September 2019). Referenced in Section 611.645.

“Modified Colitag™ (20)” means “Modified Colitag™ Test Method for Simultaneous Detection of Total Coliforms and E. coli in Water”, Version 2.0, (June 2020). Available from Neogen Corporation, 620 Leshler Place, Lansing, MI 48912. Referenced in Sections 611.802 and 611.1052.

“Palintest 1001 (20)” means “Method 1001: Lead in Drinking Water by Differential Pulse Anodic Stripping Voltammetry”, May 2020, Revision 1.1, referenced in Section 611.611.

BOARD NOTE: Also available from USEPA, OGWDW (under “Inorganic Contaminants and Other Inorganic Constituents (PDF)”).

“Palintest ChlordioX Plus (20)” means “Chlorine Dioxide and Chlorite in Drinking Water by Amperometry using Disposable Sensors”, Version 1.1 (February 2020), referenced in Sections 611.381 and 611.531.

“Palintest ChloroSense (20)” means “Free and Total Chlorine in Drinking Water by Amperometry using disposable sensors”, Revision 1.1 (February 2020), referenced in Sections 611.381 and 611.531.

“RAPID'E. coli (20)” means “Simultaneous Detection of Total Coliform Bacteria and Escherichia coli Using RAPID'E. coli 2 (REC2) in Drinking Water” (May 2020). Available from Bio-Rad Laboratories, 2000 Nobel Drive, Hercules, California 94547. Referenced in Sections 611.802 and 611.1052.

“USEPA 127 (21)” means “Method 127: Determination of Monochloramine Concentration in Drinking Water”, document number EPA 815-B-21-004, Version 1.0 (January 2021). Available from USEPA, NSCEP (search for “815B21004”). Referenced in Section 611.531.



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BOARD NOTE: Also individually available from NEMI.

“USEPA 903.0 (21)” means “Method 903.0, Revision 1.0: Alpha-Emitting Radium Isotopes in Drinking Water”, doc. no. EPA 815-B-21-002 (January 2021). Available from USEPA, NSCEP (nepis.epa.gov; search: “815B21002”). Referenced in Section 611.720.

“USEPA 903.1 (21)” means “Method 903.1, Revision 1.0: Radium-226 in Drinking Water Radon Emanation Technique”, doc. no. EPA 815-B-21-003 (January 2021). Available from USEPA, NSCEP (nepis.epa.gov; search: “815B21003”). Referenced in Section 611.720.

19 CFR 101.1 (2022) (Definitions), referenced in Section 611.126.

40 CFR 3.3 (2021) (What Definitions Are Applicable to This Part?), referenced in Section 611.105.

40 CFR 3.10 (2021) (What Are the Requirements for Electronic Reporting to EPA?), referenced in Section 611.105.

40 CFR 3.2000 (2021) (What Are the Requirements Authorized State, Tribe, and Local Programs’ Reporting Systems Must Meet?), referenced in Section 611.105.

40 CFR 136.3(a) (2021), referenced in Section 611.1004.

Appendix B to 40 CFR 136 (2021), referenced in Sections 611.359, 611.609, and 611.646.

40 CFR 141.21(f)(6)(i) and (f)(6)(ii) (2021), referenced in Section 611.802.

40 CFR 142.20(b)(1) (2021), referenced in Section 611.112.

Subpart G of 40 CFR 142 (2021), referenced in Section 611.113.

- 10) Are there any proposed rulemakings to this Part pending? No
- 11) Statement of Statewide Policy Objectives: This proposed amendment does not create or enlarge a State mandate as defined in Section 3(b) of the State Mandates Act. [30 ILCS 805/3].

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- 12) Time, Place, and Manner in which interested persons may comment on this proposed rulemaking: The Board will accept written public comments on this proposal for a period of at least 45 days after the date of publication in the *Illinois Register*. Public comments should refer to Docket R21-10/R22-2 and be filed electronically through the Clerk's Office On-Line (COOL) on the Board's website at [pcb.illinois.gov](http://pcb.illinois.gov). Public comments may be addressed to:
- Clerk's Office  
Illinois Pollution Control Board  
60 E. Van Buren St., Ste. 630  
Chicago, IL 60605
- Interested persons may download copies of the Board's opinions and orders in R21-10/R22-2 from the Board's Web site at [www.pcb.illinois.gov](http://www.pcb.illinois.gov) and may also request copies by calling the Clerk's office at 312-814-3620.
- 13) Initial Regulatory Flexibility Analysis:
- A) Types of small businesses, small municipalities and not for profit corporations affected: None
- B) Reporting, bookkeeping or other procedures required for compliance: The proposed amendments in this rulemaking will not themselves require recordkeeping or reporting procedures for compliance.
- C) Types of Professional skills necessary for compliance: None
- 14) Small Business Impact Analysis: The Board does not expect that the proposed rules will impact small business.
- 15) Regulatory Agenda on which this rulemaking was summarized: This rulemaking was not summarized in either of the two most recent Regulatory Agendas.

The full text of the Proposed Amendments begins on the next page:

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TITLE 35: ENVIRONMENTAL PROTECTION  
SUBTITLE F: PUBLIC WATER SUPPLIES  
CHAPTER I: POLLUTION CONTROL BOARDPART 611  
PRIMARY DRINKING WATER STANDARDS

## SUBPART A: GENERAL

Section	
611.100	Purpose, Scope, and Applicability
611.101	Definitions
611.102	Incorporations by Reference
611.103	Severability
611.105	Electronic Reporting
611.107	Agency Inspection of PWS Facilities (Repealed)
611.108	Delegation to Local Government
611.109	Enforcement
611.110	Special Exception Permits
611.111	Relief Equivalent to SDWA Section 1415(a) Variances
611.112	Relief Equivalent to SDWA Section 1416 Exemptions
611.113	Alternative Treatment Techniques
611.114	Siting Requirements
611.115	Source Water Quantity (Repealed)
611.120	Effective Dates ( <a href="#">Repealed</a> )
611.121	Maximum Contaminant Levels
611.125	Fluoridation Requirement
611.126	<a href="#">Using Lead-Free Pipes, Fittings, Fixtures, Solder, and Flux for Drinking Water</a> <del>Prohibition on Use of Lead</del>
611.130	Special Requirements for Certain Variances and Adjusted Standards
611.131	Relief Equivalent to SDWA Section 1415(e) Small System Variance
611.160	Composite Correction Program
611.161	Case-by-Case Reduced Subpart Y Monitoring for Wholesale and Consecutive Systems

## SUBPART B: FILTRATION AND DISINFECTION

Section	
611.201	Requiring a Demonstration ( <a href="#">Repealed</a> )

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611.202	Procedures for Agency Determinations <a href="#">(Repealed)</a>
611.211	Filtration Required
611.212	Groundwater under Direct Influence of Surface Water
611.213	No Method of HPC Analysis
611.220	General Requirements
611.230	Filtration Effective Dates <a href="#">(Repealed)</a>
611.231	Source Water <a href="#">Limitation</a> <del>Quality Conditions</del>
611.232	Site-Specific Conditions <a href="#">(Repealed)</a>
611.233	Treatment Technique Violations
611.240	Disinfection
611.241	Unfiltered PWSs <a href="#">(Repealed)</a>
611.242	Filtered PWSs
611.250	Filtration
611.261	Unfiltered PWSs: Reporting and Recordkeeping
611.262	Filtered PWSs: Reporting and Recordkeeping
611.271	Protection during Repair Work (Repealed)
611.272	Disinfection Following Repair (Repealed)
611.276	Recycle Provisions

## SUBPART C: USE OF NON-CENTRALIZED TREATMENT DEVICES

Section	
611.280	Point-of-Entry Devices
611.290	<del>Use of</del> Point-of-Use Devices or Bottled Water

## SUBPART D: TREATMENT TECHNIQUES

Section	
611.295	General Requirements
611.296	Acrylamide and Epichlorohydrin
611.297	Corrosion Control (Repealed)

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

Section	
611.300	<del>State-Only</del> MCLs for Inorganic Chemical Contaminants
611.301	Revised MCLs for Inorganic Chemical Contaminants
611.310	State-Only Maximum Contaminant Levels (MCLs) for Organic Chemical

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## Contaminants

611.311	Revised MCLs for Organic Chemical Contaminants
611.312	Maximum Contaminant Levels (MCLs) for Disinfection Byproducts (DBPs)
611.313	Maximum Residual Disinfectant Levels (MRDLs)
611.320	Turbidity (Repealed)
611.325	Microbiological Contaminants
611.330	Maximum Contaminant Levels for Radionuclides
611.331	Beta Particle and Photon Radioactivity (Repealed)

## SUBPART G: LEAD AND COPPER

## Section

611.350	General Requirements
611.351	Applicability of Corrosion Control
611.352	Corrosion Control Treatment
611.353	Source Water Treatment
611.354	Lead Service Line <a href="#">Inventory and Replacing Lead Service Lines</a> <del>Replacement</del>
611.355	Public Education and Supplemental Monitoring <a href="#">and Mitigation</a>
611.356	Tap Water Monitoring for Lead and Copper
611.357	Monitoring for Water Quality Parameters
611.358	Monitoring for Lead and Copper in Source Water
611.359	Analytical Methods
611.360	Reporting
611.361	Recordkeeping
<a href="#">611.362</a>	<a href="#">Monitoring for Lead in Schools and Child Care Facilities</a>
<a href="#">611.363</a>	<a href="#">Small Supplier Compliance Flexibility</a>

SUBPART I: DISINFECTANT RESIDUALS, DISINFECTION BYPRODUCTS,  
AND DISINFECTION BYPRODUCT PRECURSORS

## Section

611.380	General Requirements
611.381	Analytical Requirements
611.382	Monitoring Requirements
611.383	Compliance Requirements
611.384	Reporting and Recordkeeping Requirements
611.385	Treatment Technique for Control of Disinfection Byproduct (DBP) Precursors

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## SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

## Section

611.480	Alternative Analytical Techniques
611.490	Certified Laboratories
611.491	Laboratory Testing Equipment (Repealed)
611.500	Consecutive PWSs
611.510	Special Monitoring for Unregulated Contaminants (Repealed)

SUBPART L: MICROBIOLOGICAL MONITORING  
AND ANALYTICAL REQUIREMENTS

## Section

611.521	Routine Coliform Monitoring (Repealed)
611.522	Repeat Coliform Monitoring (Repealed)
611.523	Invalidation of Total Coliform Samples (Repealed)
611.524	Sanitary Surveys (Repealed)
611.525	Fecal Coliform and E. Coli Testing (Repealed)
611.526	Analytical Methodology (Repealed)
611.527	Response to Violation (Repealed)
611.528	Transition from Subpart L to Subpart AA Requirements (Repealed)
611.531	Analytical Requirements
611.532	Unfiltered PWSs
611.533	Filtered PWSs

## SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

## Section

611.560	Turbidity <a href="#">(Repealed)</a>
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## SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

## Section

611.591	Violation of a <a href="#">State-OnlyState</a> MCL
611.592	Frequency of State Monitoring
611.600	Applicability
611.601	Monitoring Frequency
611.602	Asbestos Monitoring Frequency
611.603	Inorganic Monitoring Frequency

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611.604	Nitrate Monitoring
611.605	Nitrite Monitoring
611.606	Confirmation Samples
611.607	More Frequent Monitoring and Confirmation Sampling
611.608	Additional Optional Monitoring
611.609	Determining Compliance
611.610	Inorganic Monitoring Times
611.611	Inorganic Analysis
611.612	Monitoring Requirements for Old Inorganic MCLs
611.630	Special Monitoring for Sodium
611.631	Special Monitoring for Inorganic Chemicals (Repealed)

## SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section	
611.640	Definitions
611.641	<del>State-Only</del> MCLs
611.645	Analytical Methods for Organic Chemical Contaminants
611.646	Phase I, Phase II, and Phase V Volatile Organic Contaminants
611.647	Sampling for Phase I Volatile Organic Contaminants (Repealed)
611.648	Phase II, Phase IIB, and Phase V Synthetic Organic Contaminants
611.650	Monitoring for 36 Contaminants (Repealed)
611.657	Analytical Methods for 36 Contaminants (Repealed)
611.658	Special Monitoring for Organic Chemicals (Repealed)

## SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

Section	
611.680	Sampling, Analytical, and other Requirements (Repealed)
611.683	Reduced Monitoring Frequency (Repealed)
611.684	Averaging (Repealed)
611.685	Analytical Methods (Repealed)
611.686	Modification to System (Repealed)
611.687	Sampling for Maximum THM Potential (Repealed)
611.688	Applicability Dates (Repealed)

## SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section

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611.720	Analytical Methods
611.731	Gross Alpha
611.732	Beta Particle and Photon Radioactivity
611.733	General Monitoring and Compliance Requirements

SUBPART R: ENHANCED FILTRATION AND DISINFECTION:  
SYSTEMS THAT SERVE 10,000 OR MORE PEOPLE

Section	
611.740	General Requirements
611.741	Standards for Avoiding Filtration
611.742	Disinfection Profiling and Benchmarking
611.743	Filtration
611.744	Filtration Sampling Requirements
611.745	Reporting and Recordkeeping Requirements

## SUBPART S: GROUNDWATER RULE

Section	
611.800	General Requirements and Applicability
611.801	Sanitary Surveys for GWS Suppliers
611.802	Groundwater Source Microbial Monitoring and Analytical Methods
611.803	Treatment Technique Requirements for GWS Suppliers
611.804	Treatment Technique Violations for GWS Suppliers
611.805	Reporting and Recordkeeping for GWS Suppliers

## SUBPART T: REPORTING AND RECORDKEEPING

Section	
611.830	Applicability
611.831	Monthly Operating Report (Repealed)
611.832	Notice by Agency (Repealed)
611.833	Cross Connection Reporting (Repealed)
611.840	Reporting
611.851	Reporting MCL, MRDL, and other Violations (Repealed)
611.852	Reporting other Violations (Repealed)
611.853	Notice to New Billing Units (Repealed)
611.854	General Content of Public Notice (Repealed)
611.855	Mandatory Health Effects Language (Repealed)



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- 611.856 Fluoride Notice (Repealed)
- 611.858 Fluoride Secondary Standard (Repealed)
- 611.860 Record Maintenance
- 611.870 List of 36 Contaminants (Repealed)

## SUBPART U: CONSUMER CONFIDENCE REPORTS

## Section

- 611.881 Purpose and Applicability
- 611.882 Compliance Dates
- 611.883 Content of the Reports
- 611.884 Required Additional Health Information
- 611.885 Report Delivery and Recordkeeping

## SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

## Section

- 611.901 General Public Notification Requirements
- 611.902 Tier 1 Public Notice: Form, Manner, and Frequency of Notice
- 611.903 Tier 2 Public Notice: Form, Manner, and Frequency of Notice
- 611.904 Tier 3 Public Notice: Form, Manner, and Frequency of Notice
- 611.905 Content of the Public Notice
- 611.906 Notice to New Billing Units or New Customers
- 611.907 Special Notice of the Availability of Unregulated Contaminant Monitoring Results
- 611.908 Special Notice for Exceedance of the Fluoride Secondary Standard
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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;

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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. 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 in R17-12 at 42 Ill. Reg. 1140, effective January 4, 2018; amended in R18-9 at 42 Ill. Reg. 9316, effective May 29, 2018; amended in R18-17 at 43 Ill. Reg. 8206, effective July 26, 2019; amended in R19-16 at 44 Ill. Reg. 6996, effective April 17, 2020; amended in R18-26 at 47 Ill. Reg. 7556, effective May 16, 2023; amended in R21-9/R22-10 at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

## SUBPART A: GENERAL

**Section 611.100 Purpose, Scope, and Applicability**

- a) This Part satisfies the ~~mandate in~~requirement of Section 17.5 of the Environmental Protection Act (Act) ~~requiring that~~ the Board to adopt regulations that are identical in substance with federal regulations ~~promulgated by~~ the United States Environmental Protection Agency (USEPA) adopted under~~pursuant to~~ Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the Safe Drinking Water Act (SDWA) (42 USC 300g-1(b), 300g-3(c), 300g-6(a), and 300j-4(a)).
- b) This Part establishes primary drinking water regulations (NPDWRs) under~~pursuant to the~~ SDWA. This Part,~~and~~ also includes additional, related State requirements that are consistent with and more stringent than the USEPA regulations (Section 7.2(a)(6) of the Act). The Board marked the latter provisions are specifically marked as "additional State requirements". These additional State requirements ~~They~~ apply only to community water systems (CWSs).

BOARD NOTE: This subsection (b) derives from 40 CFR 141.1.

- c) This Part applies to "suppliers", owners and operators of "public water systems" ("PWSs, and persons affecting the quality of water the public consumes from suppliers or PWSs"). PWSs include CWSs, "non-community water systems ("non-CWSs"), and "non-transient non-community water systems ("NTNCWSs"), as these terms are defined in Section 611.101 defines these terms.

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- 1) ~~A CWS must~~~~suppliers are required to~~ obtain ~~a permit~~~~permits~~ from the Illinois Environmental Protection Agency (Agency) ~~under~~~~pursuant to~~ 35 Ill. Adm. Code 602.
- 2) ~~A non-CWS supplier is~~~~Non-CWS suppliers are~~ subject to additional ~~rules~~~~of regulations promulgated by~~ the Illinois Department of Public Health (Public Health or DPH) ~~under~~~~pursuant to~~ Section 9 of the Illinois Groundwater Protection Act [415 ILCS 55/9], including 77 Ill. Adm. Code 900.
- 3) ~~A non-CWS supplier needs not~~~~Non-CWS suppliers are not required to~~ obtain ~~a permit~~~~permits~~ or other ~~approval~~~~approvals~~ from the Agency, ~~or to~~ file reports or other documents with the Agency. Any provision in this Part ~~requiring a non-CWS supplier to obtain a permit or approval or file reports or other documents requires~~~~so providing is to be understood as requiring~~ the non-CWS supplier to obtain the comparable form of ~~permit or approval from,~~ or ~~to~~ file the comparable report or other document with Public Health.
- 4) ~~Any person introducing pipes; pipe or plumbing fittings; or fixtures, solder, or flux into commerce or installing or repairing a facility providing water for human consumption using these items must comply with Section 611.126.~~

BOARD NOTE: ~~Section 611.126, requiring lead-free pipes, fittings, fixtures, solder, and flux for drinking water, applies to persons other than suppliers and PWSs. Derived from 40 CFR 141.1 (2016).~~

- d) This Part applies to ~~each~~ PWS, unless the PWS meets ~~these~~~~call of the following~~ conditions:
  - 1) The PWS consists only of distribution and storage facilities (and does not have any collection and treatment facilities);
  - 2) The PWS obtains all of its water from, but is not owned or operated by, a supplier to which ~~apply this Part, 40 CFR 141, or the comparable rules of a sister state that USEPA authorized under 40 CFR 142~~~~such regulations~~ apply;

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- 3) The PWS does not sell water to any person; and
- 4) The PWS is not a carrier ~~conveying that conveys~~ passengers in interstate commerce.

BOARD NOTE: ~~This subsection (d) derives~~ Derived from 40 CFR 141.3 ~~(2016)~~. The text of 40 CFR 141.3 is nearly identical to section 1411 of ~~the federal~~ SDWA (42 USC 300g). On December 23, 2003 (at 68 Fed. Reg. 74233), USEPA ~~changed~~ ~~announced a change in~~ its policy relating to ~~section~~ Section 1411. USEPA determined that a property owner ~~that is~~ not otherwise subject to ~~the~~ SDWA national primary drinking water standards "submeters" water, and does not "sell" water within the meaning of ~~section~~ Section 1411(3), if the property owner meters water to tenants on its property and bills the tenants for the water. USEPA charged the State with determining whether water is "submetered" or "sold" in a particular situation. USEPA stated that eligibility for exclusion requires that the owner obtain water from a regulated water system. USEPA ~~gave set forth~~ factors ~~for consideration~~ to aid the ~~State's~~ State in making such a determination: the property has a limited distribution system with no known backflow or cross-connection issues; the majority of the plumbing is within a structure, rather than in the ground; and property ownership is single or within an association of owners. USEPA cited apartment buildings, co-ops, and condominiums as examples of eligible properties. USEPA ~~further stated that it~~ does not intend ~~that~~ the policy ~~to~~ apply to a large distribution system, ~~to~~ one ~~servicing that serves~~ a large population, or one ~~servicing that serves~~ a mixed commercial and residential population. USEPA cited "many military installations/facilities" and large mobile home parks as examples of systems to which the policy would not apply.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.101 Definitions**

TheAs used in this Part, the following terms this Section defines have the given meanings in this Part:

"Act" means the Environmental Protection Act [415 ILCS 5].

"Agency" means the Illinois Environmental Protection Agency.

BOARD NOTE: The Department of Public Health (Public Health or DPH)



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regulates ~~non-community water supplies~~ ("non-CWSs", including ~~non-transient, non-community water supplies~~ ("NTNCWSs") and ~~transient non-community water supplies~~ ("transient non-CWSs")). "Agency" ~~means~~will mean Public Health ~~if~~where implementation by Public Health occurs with regard to non-CWS suppliers.

"Approved source of bottled water", for the purposes of Section 611.130(d)(4), means a source of water and the packaged water ~~it provides therefrom~~, whether ~~it be~~ from a spring, artesian well, drilled well, municipal water supply, or any other source, that ~~the provider inspects, samples, analyzes, has been inspected and the water sampled, analyzed, and finds has found to be~~ a safe and sanitary quality ~~under~~according to applicable laws and regulations of State and local government agencies having jurisdiction, as evidenced by ~~the presence in the plant of~~ current certificates or notations of approval in the packaging plant from each government agency ~~or agencies~~ having jurisdiction over the source, the water it bottles, and ~~distributing the distribution of~~ the water in commerce.

BOARD NOTE: ~~This definition derives~~Derived from 40 CFR 142.62(g)(2) and 21 CFR 129.3(a). The Board cannot compile an exhaustive listing of all federal, State, and local laws ~~regulating to which~~ bottled water and bottling water ~~may be subjected~~. However, the ~~Board is aware of some statutes and regulations of which the Board is aware are the following:~~ the Illinois Food, Drug and Cosmetic Act [410 ILCS 620], the Bottled Water Act [815 ILCS 310], the DPH Water Well Construction Code (77 Ill. Adm. Code 920), the DPH Water Well Pump Installation Code (77 Ill. Adm. Code 925), the federal bottled water quality standards (21 CFR 103.35), the federal drinking water processing and bottling standards (21 CFR 129), the federal Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food (21 CFR 110), the federal Fair Packaging and Labeling Act (15 USC 1451 et seq.), and the federal Fair Packaging and Labeling regulations (21 CFR 201).

"Bag filters" means pressure-driven separation devices that remove particulate matter larger than one micrometer using an engineered porous filtration media. ~~These~~They are typically ~~constructed of~~ a non-rigid, fabric filtration media housed in a pressure vessel ~~wherein which~~ the direction of flow is from the inside to outside of the bag ~~to outside~~.

"Bank filtration" means a water treatment process ~~using that uses~~ a well to recover surface water ~~that has~~ naturally ~~infiltrating~~infiltrated into groundwater through a river bed or banks. A nearby pumping water supply or other wells typically

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~~enhances infiltration~~Infiltration is typically enhanced by the hydraulic gradient they impose imposed by a nearby pumping water supply or other wells.

"Best available technology" or "BAT" means the best technology, treatment techniques, or other means that USEPA ~~determines~~has found are available for the contaminant in question. ~~Subpart F specifies~~ BAT is specified in Subpart F.

"Bin classification" or "bin" means, ~~for the purposes of~~ Subpart Z, the appropriate of the four treatment categories (Bin 1, Bin 2, Bin 3, or Bin 4) that ~~is assigned to~~ a filtered system supplier ~~assigns itself~~ under Section 611.1010 based on the results of ~~the~~ source water Cryptosporidium monitoring ~~under Section 611.1001 described in the previous section~~. This bin classification determines the degree of additional Cryptosporidium treatment, if any, the filtered ~~system supplier~~ PWS must provide.

BOARD NOTE: ~~This definition derives~~ Derived from 40 CFR 141.710 and ~~the preamble discussion at~~ 71 Fed. Reg. 654, 657 (Jan. 5, 2006).

"Board" means the Illinois Pollution Control Board.

"Cartridge ~~filter~~ filters" means a pressure-driven separation ~~device~~ devices that ~~removes~~ remove particulate matter larger than 1 micrometer using an engineered porous filtration media. ~~A cartridge filter~~ They are typically ~~has~~ constructed as rigid or semi-rigid, self-supporting filter elements housed in a pressure ~~vessel~~ vessels in which flow is from ~~the~~ outside ~~to inside~~ of the cartridge ~~to the inside~~.

"CAS No." means "Chemical Abstracts Services Number".

"Clean compliance history" means, for ~~the purposes of~~ Subpart ~~AAA~~, a record of no MCL violations under Section 611.325; no monitoring violations under Subpart L or Subpart AA; and no coliform treatment technique trigger exceedances or treatment technique violations under Subpart AA.

"Coagulation" means a process using coagulant chemicals and mixing ~~that destabilizes and agglomerates~~ by which colloidal and suspended materials ~~are destabilized and agglomerated~~ into flocs.

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"Combined distribution system" means the interconnected distribution system ~~comprising~~consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water.

"Community water system" or "CWS" means a ~~public water system~~ (PWS ~~servicing~~) that serves at least 15 service connections used by year-round residents or regularly ~~servicing~~serves at least 25 year-round residents.

BOARD NOTE: This definition differs slightly from that of Section 3.145 of the Act.

"Compliance cycle" means the ~~nine-calendar-year~~nine-year calendar year cycle during which ~~public water systems~~ (PWSs) must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar cycle ~~ran calendar years~~began January 1, 1993 through, and ended December 31, 2001; the second ~~ran~~began January 1, 2002 through, and ended December 31, 2010; the third ~~ran~~began January 1, 2011 through, and ends December 31, 2019, etc.

"Compliance period" means a ~~three-calendar-year~~three-year calendar year period within a compliance cycle. Each compliance cycle has three three-year compliance periods. ~~For example, Within the first compliance cycle,~~ the first compliance period ~~ran~~calendar years~~from January 1, 1993 through to December 31, 1995;~~ the second ~~ran~~from January 1, 1996 through to December 31, 1998; and the third ~~ran~~from January 1, 1999 through to December 31, 2001 within the first compliance cycle.

"Comprehensive performance evaluation" or "CPE" is a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operational, and maintenance practices. ~~The supplier conducts a CPE~~It is conducted to identify factors that may ~~be~~ adversely ~~affect~~impacting a plant's ability to comply. ~~The supplier conducts a CPE~~ability to achieve compliance and ~~emphasize~~emphasizes approaches ~~it~~that can ~~implement~~be implemented without significant capital improvements.

BOARD NOTE: The final sentence of the definition of "comprehensive performance evaluation" in 40 CFR 141.2 is ~~codified as~~ Section 611.160(a)(2), since it contains substantive elements ~~that are more appropriately codified in a substantive provision.~~

"Confluent growth" means a continuous bacterial growth covering the entire filtration area or portion of a membrane filter ~~or a portion thereof~~, in which

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bacterial colonies are not discrete.

"Consecutive system" means a PWS receiving public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or ~~through~~ the distribution system of one or more consecutive systems.

"Contaminant" means any physical, chemical, biological, or radiological substance or matter in water.

"Conventional filtration treatment" means a series of processes, including coagulation, flocculation, sedimentation, and filtration, resulting in substantial "particulate removal".

"CT" or "CT<sub>calc</sub>" is the product of residual disinfectant concentration (RDC or C) in mg/l, determined before or at the first customer, and the corresponding disinfectant contact time (T) in minutes. If a supplier applies disinfectants at more than one point prior to the first customer, it must determine the CT of each disinfectant sequence before or at the first customer to determine the total percent inactivation or "total inactivation ratio". In determining the total inactivation ratio, the supplier must determine the RDC of each disinfection sequence and corresponding contact time before any subsequent disinfection application points. (See the definition of "CT<sub>99.9</sub>".)

"CT<sub>99.9</sub>" is the CT value required for 99.9 percent (3-log) inactivation of Giardia lamblia cysts. Tables 1.1 through 1.6, 2.1, and 3.1 of Appendix B list CT<sub>99.9</sub> values for a variety of disinfectants and conditions ~~appear in Tables 1.1 through 1.6, 2.1, and 3.1 of Appendix B.~~ (See the definition of "inactivation ratio".)

BOARD NOTE: This definition derives ~~Derived~~ from the definition of "CT" in 40 CFR 141.2.

"Diatomaceous earth filtration" means a process resulting in substantial particulate removal ~~in which the following occur:~~

The process deposits a ~~A~~ precoat cake of diatomaceous earth filter media ~~is deposited~~ on a support membrane (septum); and

The process continuously adds additional filter media, known as body feed, to the feed water to maintain permeability of the filter cake while

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

"Direct filtration" means a series of processes, including coagulation and filtration but excluding sedimentation, resulting in substantial particulate removal.

"Disinfectant" means any oxidant, including chlorine, chlorine dioxide, chloramines, and ozone, ~~that a supplier adds~~ added to water in any part of the treatment or distribution process, ~~that is intended~~ to kill or inactivate pathogenic microorganisms.

"Disinfectant contact time" or "T" means the time in minutes that ~~it takes for~~ water ~~move to~~ move from the point of disinfectant application or the previous point of RDC measurement to a point before or at the point where ~~the supplier measures~~ RDC ~~is measured~~.

~~If the supplier measures~~ Where only one RDC ~~is measured~~, T is the time in minutes that ~~it takes for~~ water ~~move to~~ move from the point of disinfectant application to a point before or at the point where RDC is measured.

~~If the supplier measures~~ Where more than one RDC ~~is measured~~, T is as follows:

For the first measurement of RDC, ~~T is~~ the time in minutes that ~~it takes for~~ water ~~move to~~ move from the first or only point of disinfectant application to a point before or at the point where ~~the supplier measures~~ the first RDC ~~is measured~~; and

For subsequent measurements of RDC, ~~T is~~ the time in minutes that ~~it takes for~~ water ~~move to~~ move from the previous RDC measurement point to the RDC measurement point ~~where the supplier calculates~~ for which the particular T ~~is being calculated~~.

~~In~~ in pipelines, ~~the supplier~~ must ~~calculate~~ ~~The calculated~~ based on "plug flow" by dividing the internal volume of the pipe by the maximum hourly flow rate through that pipe.

~~Within~~ ~~T within~~ mixing basins and storage reservoirs, ~~the supplier~~ must

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~~determine T using~~ ~~be determined by~~ tracer studies or an equivalent demonstration.

"Disinfection" means a process that inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

"Disinfection byproduct" or "DBP" means a chemical byproduct ~~forming that forms~~ when disinfectants used for microbial control react with naturally occurring compounds already present in source water. DBPs include bromodichloromethane, bromoform, chloroform, dichloroacetic acid, bromate, chlorite, dibromochloromethane, and certain haloacetic acids.

"Disinfection profile" is a summary of daily Giardia lamblia inactivation through ~~at the~~ treatment plant. The procedure for developing a disinfection profile is ~~contained~~ in Section 611.742.

"Distribution system" includes all points downstream of an "entry point" to the point of consumer ownership.

"Domestic or other non-distribution system plumbing problem" means a coliform contamination problem in a PWS ~~having with~~ more than one service connection that is limited to the specific service connection from which ~~the supplier took~~ the coliform-positive sample ~~was taken~~.

"Dose equivalent" means the product of the absorbed dose from ionizing radiation and ~~the such~~ factors ~~accounting as account~~ for differences in biological ~~effect effectiveness~~ due to the type of radiation and its distribution in the body ~~as specified by the International Commission on Radiological Units and Measurements (ICRU).~~

BOARD NOTE: The International Commission on Radiation Units and Measurements (ICRU) specifies "dose equivalent" as the product of the absorbed dose (D), quality factor (QF), dose distribution factor (DF), and other necessary factors. See "Radiation Quantities and Units", International Commission on Radiological Units and Measurements (ICRU) Report 10a, Handbook 84, U.S. Department of Commerce, National Bureau of Standards (1962).

"Dual sample set" means a set of two samples ~~the supplier collect~~ ~~collected~~ at the same time and same location, ~~analyzing with~~ one sample ~~analyzed~~ for TTHM and the other sample ~~analyzed~~ for HAA5. A supplier collects dual ~~Dual~~ sample sets to

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~~conduct are collected for the purposes of conducting~~ an IDSE under Subpart W and ~~determined determining~~ compliance with the TTHM and HAA5 MCLs under Subpart Y.

"E. coli" means Escherichia coli, a species of bacteria used as a specific indicator of fecal contamination and potential harmful pathogens.

BOARD NOTE: ~~This definition derives~~ Derived from ~~the discussion at~~ 78 Fed. Reg. 10270, 10271 (Feb. 13, 2013).

"Enhanced coagulation" means ~~adding the addition of~~ sufficient coagulant ~~to improve removing for improved removal of~~ disinfection byproduct (DBP) precursors by conventional filtration treatment.

"Enhanced softening" means ~~using precipitative softening to improve removing the improved removal of~~ disinfection byproduct (DBP) precursors ~~by precipitative softening~~.

"Entry point" means a point just downstream of the final treatment operation, but upstream of the first user and ~~upstream of~~ any mixing with other water. If ~~the supplier uses~~ raw water ~~is used~~ without treatment, the "entry point" is the raw water source. If a PWS receives treated water from another PWS, the "entry point" is a point just downstream of the other PWS, but upstream of the first user ~~on the receiving PWS~~, and ~~upstream of~~ any mixing with other water.

"Filter profile" is a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup ~~through to~~ backwash ~~inclusively, including that includes~~ an assessment of filter performance while ~~the supplier backwashes~~ another filter ~~is being backwashed~~.

"Filtration" means a process ~~passing water through porous media to remove for removing~~ particulate matter ~~from water by passage through porous media~~.

"Finished water" means water that ~~the supplier introduces is introduced~~ into the distribution system of a ~~PWS intending the water public water system which is intended~~ for distribution and consumption without further treatment, except ~~that~~ treatment ~~which is~~ necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals, etc.).

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"Flocculation" means a process ~~enhancing to enhance~~ agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle ~~hydraulic or mechanical~~ stirring ~~by hydraulic or mechanical means~~.

"Flowing stream" means a course of running water flowing in a definite channel.

"40/30 certification" means the certification ~~a supplier submits, submitted by the supplier~~ to the Agency under Section 611.923, that the supplier had no TTHM or HAA5 monitoring violations, and ~~that~~ no individual sample from its system exceeded 0.040 mg/l TTHM or 0.030 mg/l HAA5 during eight consecutive calendar quarters.

BOARD NOTE: ~~This definition derives~~ Derived from 40 CFR 141.603(a).

"GAC10" means granular activated carbon (GAC) filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 ~~a supplier uses that is used~~ as a best available technology ~~to comply for compliance~~ with the MCLs ~~set forth in Subpart Y~~ under Section 611.312(b)(2) is 120 days.

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

"GC" means "gas chromatography" or "gas-liquid phase chromatography".

"GC/MS" means gas chromatography (GC) followed by mass spectrometry (MS).

"Gross alpha particle activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

"Gross beta particle activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

"Groundwater system" or "GWS" means a ~~PWS using public water supply (PWS) that uses~~ only groundwater sources, including a consecutive system ~~that~~ ~~receiving~~ receives finished groundwater.

BOARD NOTE: ~~This definition derives~~ Derived from ~~40 CFR 141.23(b)(2), 141.24(f)(2) note, and~~ 40 CFR 141.400(b).



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"Groundwater under the direct influence of surface water" means any water beneath the ~~ground~~ ~~surface-of-the-ground~~ with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens, such as Giardia lamblia or Cryptosporidium, or significant and relatively rapid shifts in water characteristics, such as turbidity, temperature, conductivity, or pH, that closely correlate to climatological or surface water conditions. "Groundwater under the direct influence of surface water" is as determined ~~underin~~ Section 611.212.

"Haloacetic acids (five)" or "HAA5" means the sum of the concentrations in milligrams per liter (mg/l) of five haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after ~~summing~~ ~~addition~~.

"Halogen" means one of the chemical elements chlorine, bromine, or iodine.

"HPC" means "heterotrophic plate count", ~~as~~ measured ~~underas specified in~~ Section 611.531(a)(2)(C).

"Hydrogeologic sensitivity assessment," ~~for the purposes of~~ Subpart S, means a determination of whether a GWS supplier obtains water from a hydrogeologically sensitive setting.

BOARD NOTE: ~~This definition derives~~ ~~Derived~~ from 40 CFR 141.400(c)(5).

"Inactivation ratio" or "Ai" means ~~the ratios follows~~:

$$A_i = CT_{\text{calc}}/CT_{99.9}$$

The sum of the inactivation ratios, or "total inactivation ratio" (B), is calculated by adding together the inactivation ratio for each disinfection sequence ~~as follows~~:

$$B = \Sigma(A_i)$$

A total inactivation ratio equal to or greater than 1.0 ~~assumedly providesis~~ ~~assumed to provide~~ a 3-log inactivation of Giardia lamblia cysts.

BOARD NOTE: ~~This definition derives~~ ~~Derived~~ from the definition of "CT" in 40 CFR 141.2.

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"Initial compliance period" means the three-year compliance period that began January 1, 1993, except for the MCLs for dichloromethane, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, benzo(a)pyrene, dalapon, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, dinoseb, diquat, endothall, endrin, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram, simazine, 2,3,7,8-TCDD, antimony, beryllium, cyanide, nickel, and thallium, as they apply to a supplier whose system has fewer than 150 service connections, for which "[initial compliance period](#)"# means the three-year compliance period that began ~~on~~ January 1, 1996.

"Initial distribution system evaluation" or "IDSE" means the evaluation, performed by the supplier under Section 611.921(c), to determine the locations in a distribution system that are representative of high TTHM and HAA5 concentrations throughout the distribution system. An IDSE is used in conjunction with, but is distinct from, the compliance monitoring undertaken to identify and select monitoring locations used to determine compliance with Subpart I.

BOARD NOTE: [This definition derives](#)~~Derived~~ from 40 CFR 141.601(c).

"Inorganic contaminants" or "IOCs" refers to that group of contaminants designated as such in ~~United States Environmental Protection Agency (USEPA)~~ regulatory discussions and guidance documents. IOCs include antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, mercury, nickel, nitrate, nitrite, selenium, and thallium.

BOARD NOTE: [This definition derives](#)~~The IOCs are derived~~ from 40 CFR 141.23(a)(4).

"ℓ" means "liter".

"Lake or reservoir" means a natural or man made basin or hollow on the Earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

"Legionella" means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.

"Level 1 assessment" means 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. [The](#)

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~~system owner or operator conducts a~~ Level 1 assessment ~~is conducted by the system operator or owner~~. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality ~~is~~was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, ~~if~~where appropriate (e.g., whether a groundwater system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The supplier must conduct the assessment consistent with any Agency-imposed permit conditions that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.

"Level 2 assessment" means 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. A Level 2 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. A ~~person approved by the Agency in a SEP conducts a~~ Level 2 assessment ~~is conducted by a person approved by a SEP granted by the Agency~~, and that person may include the system operator. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality ~~is~~was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, ~~if~~where appropriate (e.g., whether a groundwater system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The ~~person conducting the Level 2 assessment and the~~ supplier must conduct the assessment consistent with any Agency-imposed permit conditions that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system. The ~~person conducting the Level 2 assessment and the~~ supplier must comply with any expedited actions or additional actions ~~therequired by a SEP requires~~ in the instance of an E. coli MCL violation.

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"Locational running annual average" or "LRAA" means the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

"Man-made beta particle and photon emitters" means all radionuclides emitting beta particles or photons listed in NBS Handbook 69 (63), incorporated by reference in Section 611.102, except the daughter products of thorium-232, uranium-235 and uranium-238.

BOARD NOTE: The USEPA-recognized naturally occurring daughter products are <sup>227,228</sup>Ac, <sup>210,212</sup>Bi, <sup>212</sup>Pb, <sup>232</sup>Pa, <sup>210</sup>Pb, <sup>210</sup>Po, <sup>223,224, 226,228</sup>Ra, <sup>220,222</sup>Rn, <sup>227, 230,231,232,234</sup>Th, and <sup>234,235,238</sup>U. See 56 Fed. Reg. 33050, 33063-65 (July 18, 1991).

"Maximum contaminant level" or "MCL" means the maximum permissible concentration level of a contaminant in water a supplier delivers that is delivered to any user of its PWS a public water system. (See Section 611.121.)

"Maximum contaminant level goal" or "MCLG" means the maximum concentration level of a contaminant in drinking water that USEPA determined will cause at which no known or anticipated adverse effect on the health of persons would occur, allowing and which allows an adequate margin of safety. MCLGs are nonenforceable health goals.

BOARD NOTE: The Board has not routinely adopted the regulations relating to the federal MCLGs because they are outside the scope of the Board's identical-in-substance mandate under Section 17.5 of the Act.

"Maximum residual disinfectant level" or "MRDL" means the maximum permissible concentration level of a disinfectant added for water treatment that USEPA determined a supplier may add and may not exceed may not be exceeded at the consumer's tap without an unacceptable risk possibility of adverse health effects. MRDLs are enforceable in the same manner as are MCLs. (See Section 611.313 and Section 611.383.)

"Maximum residual disinfectant level goal" or "MRDLG" means the maximum concentration level of a disinfectant that USEPA determined a supplier may add added for water treatment that would not cause any at which no known or anticipated adverse effect on the health of persons would occur, allowing and which allows an adequate margin of safety. MRDLGs are nonenforceable health goals and do not reflect the benefit of the addition of the chemical for control of

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waterborne microbial contaminants.

"Maximum total trihalomethane potential" or "MTP" means the maximum concentration of total trihalomethanes (TTHMs) produced in a given water containing a disinfectant residual after seven days at a temperature of 25° C or above.

"Membrane filtration" means a ~~pressure-pressure~~ or ~~vacuum-driven~~ ~~vacuum-driven~~ separation process in which particulate matter larger than one micrometer is rejected by an engineered barrier, primarily through a size exclusion mechanism, ~~having and which has~~ a measurable removal efficiency of a target organism that ~~is verifiable using~~ ~~can be verified through the application of~~ a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

"Method detection limit" or "MDL" means the minimum concentration of a substance that analysis can measure and report with 99 percent confidence that the analyte concentration is greater than zero, from analysis of a sample in a given matrix containing the analyte.

"MFL" means millions of fibers per liter larger than 10 micrometers.

BOARD NOTE: ~~This definition derives~~ ~~Derived~~ from 40 CFR 141.23(a)(4)(i).

"mg" means milligrams (1/1000 of a gram).

"µg" means micrograms (1/1,000,000 of a gram).

"mg/ℓ" means milligrams per liter.

"µg/ℓ" means micrograms per liter.

"Mixed system" means a PWS ~~using~~ ~~that uses~~ both groundwater and surface water sources.

BOARD NOTE: Derived from 40 CFR ~~141.400(b)~~ ~~141.23(b)(2)~~ ~~and 141.24(f)(2)~~ ~~note.~~

"MUG" means 4-methyl-umbelliferyl-beta-d-glucuronide (IUPAC name: (2S,3S,4S,5R,6S)-3,4,5-trihydroxy-6-((4-methyl-2-oxo-2Hchromen-7-

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[yl\)oxy\)tetrahydro-2H-pyran-2-carboxylic acid; CAS no. 881005-91-0\).](#)

"Near the first service connection" means at one of the 20 percent of all service connections in the entire system that are nearest the ~~public water system (PWS)~~ treatment facility, as measured by water transport time within the distribution system.

"nm" means nanometer (1/1,000,000,000 of a meter).

"Non-community water system" or "NCWS" or "non-CWS" means a ~~public water system (PWS)~~ that is not a ~~community water system (CWS)~~. A ~~non-CWS non-community water system~~ is either a "transient non-community water system (TWS)" or a ~~"non-transient non-community water system (NTNCWS)"~~.

"Non-transient, non-community water system" ~~or "non-transient, non-CWS"~~ or "NTNCWS" means a ~~public water system (PWS)~~ that is not a ~~community water system (CWS)~~ and that regularly serves at least 25 of the same persons over six months per year.

"NPDWR" means "national primary drinking water regulation".

"NTU" means "nephelometric turbidity units".

~~"Old MCL" means one of the inorganic maximum contaminant levels (MCLs), codified at Section 611.300, or organic MCLs, codified at Section 611.310, including any marked as "additional State requirements".~~

~~BOARD NOTE: Old MCLs are those derived prior to the implementation of the USEPA "Phase II" regulations. The Section 611.640 definition of this term, which applies only to Subpart O, differs from this definition in that the definition does not include the Section 611.300 inorganic MCLs.~~

"P-A Coliform Test" means "Presence-Absence Coliform Test".

"Paired sample" means two samples of water for ~~total organic carbon~~ ~~Total Organic Carbon~~ (TOC). One sample is of raw water ~~the supplier take~~ ~~taken~~ prior to any treatment. The ~~supplier takes the~~ other sample ~~is taken~~ after the point of combined filter effluent ~~and is~~ representative of the treated water. ~~The supplier takes these~~ ~~These~~ samples ~~are taken~~ at the same time. (See Section 611.382.)

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"Performance evaluation sample" or "PE sample" means a reference sample ~~the Agency provides~~provided to a laboratory for ~~the purpose of~~ demonstrating that the laboratory can successfully analyze the sample within limits of performance ~~specified by~~ the Agency specifies. ~~For; or, for~~ bacteriological laboratories, Public Health provides the sample. ~~For; or, for~~ radiological laboratories, the Illinois Emergency Management Agency provides the sample~~Department of Nuclear Safety~~. The laboratory does not know the true value of the concentration of the reference material ~~is unknown to the laboratory~~ at the time of ~~the~~ analysis.

"Person" means an individual, corporation, company, association, partnership, state, unit of local government, or federal agency.

"Phase I" refers to that group of chemical contaminants and the accompanying regulations promulgated by USEPA on July 8, 1987, at 52 Fed. Reg. 25712.

"Phase II" refers to that group of chemical contaminants and the accompanying regulations promulgated by USEPA on January 30, 1991, at 56 Fed. Reg. 3578.

"Phase IIB" refers to that group of chemical contaminants and the accompanying regulations promulgated by USEPA on July 1, 1991, at 56 Fed. Reg. 30266.

"Phase V" refers to that group of chemical contaminants promulgated by USEPA on July 17, 1992, at 57 Fed. Reg. 31776.

"Picocurie" or "pCi" means the quantity of radioactive material producing 2.22 nuclear transformations per minute.

"Plant intake" means the works or structures at the head of a conduit diverting through which water ~~is diverted~~ from a source (e.g., a river or lake) into the treatment plant.

"Point of disinfectant application" is the point where a supplier applies~~at which~~ the disinfectant ~~is applied~~ and downstream of where the~~which~~ water is not subject to recontamination by surface water runoff.

"Point-of-entry treatment device" or "POE device" is a treatment device a consumer applies~~applied~~ to the drinking water entering a house or building to reduce~~for the purpose of reducing~~ contaminants in the drinking water distributed throughout the house or building.

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"Point-of-use treatment device", point-of-use device, or "POU" is a water treatment device ~~a consumer applies~~applied to a single tap ~~to reduce~~used for the purpose of reducing contaminants in drinking water at that ~~one~~ tap. Under Subpart G, a manufacturer, importer, or accredited third-party certifying body must certify a POU device as complying with NSF/ANSI 53 as in effect on the date of manufacture or import to satisfy the rule.

BOARD NOTE: NSF/ANSI 53 is the health-based standard for lead and several other contaminants for water filter devices, including tap filter-type treatment devices. Identifying a device as certified under NSF/ANSI 53 at the time of purchase is possible. NSF maintains an on-line list of certified devices at [info.nsf.org/Certified/dwtu/listings\\_leadreduction.asp](http://info.nsf.org/Certified/dwtu/listings_leadreduction.asp). See the definition of "accredited third-party certifying body" in 35 Ill. Adm. Code 611.126(b) relating to NSF/ANSI 372.

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

"Public Health" or "DPH" means the Illinois Department of Public Health.

BOARD NOTE: See the definition of "Agency" in this Section.

"Public water system" or "PWS" means a system ~~providing water for the provision~~of water to the public ~~for human consumption through pipes or other constructed conveyances~~; if ~~the~~such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. A PWS is either a ~~community water system (CWS)~~ or ~~a non-community water system (non-CWS)~~. A PWS does not include any ~~facility defined as "special irrigation district"~~. "PWS"~~Such term~~ includes certain facilities~~the following~~:

Any collection, treatment, storage, and distribution facilities under control of the PWS operator ~~that the operator uses of such system and used primarily~~ in connection with ~~the~~such system; and

Any collection or pretreatment storage facilities not under ~~such~~ control of the PWS operator that ~~the operator uses are used~~ primarily in connection with ~~the~~such system.

BOARD NOTE: SDWA and USEPA rules use "public water system". The Act



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uses "public water supply". The Board intends that ~~Where used in Subpart F,~~ "public water supply" means the same as "public water system" and both terms refer both to the facilities providing water and the persons owning and operating those facilities.

"Radioactive contaminants" ~~means those refers to that group of~~ contaminants for which Section 611.330 imposes an MCL designated "radioactive contaminants" in USEPA regulatory discussions and guidance documents. "Radioactive contaminants" include radium-226 and -228, tritium, strontium-89, strontium-90, iodine-131, cesium-134, uranium, gross alpha emitters, gross beta emitters, photon emitters, and other nuclides emitting energetic nuclear particles or photons.

BOARD NOTE: ~~This definition derives~~ Derived from Table C in 40 CFR 141.25(c), 141.66, appendix A to subpart O, and appendices A and B to subpart Q of 40 CFR 141-Table B. These radioactive contaminants must be reported in Consumer Confidence Reports under Subpart U when they are detected above the levels indicated in Section 611.720(e)(3).

"Reliably and consistently below the MCL" ~~below a specified level~~ for a contaminant means an Agency determination based on analytical results following the initial detection of a contaminant to determine the qualitative condition of water from an individual sampling point or source. The Agency must base this determination on the consistency of analytical results, the degree below the MCL, the susceptibility of source water to variation, and other vulnerability factors pertinent to the detected contaminant ~~detected~~ that may influence the quality of water.

BOARD NOTE: ~~This definition derives~~ Derived from 40 CFR 141.23(b)(9), (c)(8), (d)(2), and (e)(3) and 141.24(f)(11)(ii), and 141.24(f)(11)(iii), (f)(12), (h)(6)(ii), and (h)(8).

"Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem (mrem)" is 1/1000 of a rem.

"Repeat compliance period" means a compliance period that begins after the initial compliance period.

"Representative" means that a sample ~~reflects~~ must reflect the quality of water a supplier delivers that is delivered to consumers under conditions when the supplier uses all raw water sources it requires ~~required~~ to supply water under normal use

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conditions ~~are in use~~ and all treatment ~~is~~ properly ~~operates~~operating.

"Residual disinfectant concentration"  ~~("RDC" or the variable "C" in CT calculations)~~ means the concentration of disinfectant measured in mg/l in a representative sample of water. For purposes of the requirement of Section 611.241(d) of maintaining a detectable RDC in the distribution system, "RDC" means a residual of free or combined chlorine.

"Safe Drinking Water Act" or "SDWA" means the Public Health Service Act, as amended by the Safe Drinking Water Act, Pub. L. 93-523, 42 USC 300f et seq.

"Sanitary defect" means a defect that could provide a pathway of entry for microbial contamination ~~of a supplier's into the~~ distribution system or ~~that indicates which is indicative of~~ a failure or imminent failure in ~~an existing~~a barrier to microbial contamination ~~that is already in place~~.

"Sanitary survey" means an onsite review of the delineated WHPAs (identifying sources of contamination within the WHPAs and evaluations or the hydrogeologic sensitivity of the delineated WHPAs ~~the Agency~~ conducted under source water assessments or utilizing other relevant information ~~if where~~ available), facilities, equipment, operation, maintenance, and monitoring compliance of a ~~public water system (PWS supplier)~~ to evaluate the adequacy of the system, its sources, and operations for the production and distribution of safe drinking water.

BOARD NOTE: ~~This definition derives~~Derived from 40 CFR 141.2 and 40 CFR 142.16(o)(2).

"Seasonal system" means a non-CWS ~~that is not~~ operatingoperated as a PWS on a year-round basis and ~~starting which starts~~ up and ~~shuttingshuts~~ down at the beginning and end of each operating season.

"Sedimentation" means a process for ~~removingremoval of~~ solids before filtration by gravity or separation.

"SEP" means special exception permit ~~the Agency~~ issued under 35 Ill. Adm. Code 602.600.

"Service connection", as used in the definition of ~~PWSpublic water system~~, does not include a connection to a system ~~deliveringthat delivers~~ water by a constructed conveyance other than a pipe if any of ~~certain conditions exist~~the

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following is true:

~~Consumers use the~~The water ~~is used~~ exclusively for purposes other than residential use (consisting of drinking, bathing, and cooking, or other similar uses);

The Agency ~~issues a SEP determining~~determines by issuing a SEP that ~~the supplier provides~~ alternative water for residential use or similar uses for drinking and cooking ~~is provided~~ to achieve the equivalent level of public health protection ~~that provided by~~ the applicable national primary drinking water regulations ~~provide~~; or

The Agency ~~issues a SEP determining~~determines by issuing a SEP that the water provided for residential use or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of ~~public health~~ protection ~~to that provided by~~ the applicable national primary drinking water regulations ~~provide~~.

BOARD NOTE: See ~~SDWA~~ sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) ~~of SDWA~~ (42 USC 300f(4)(B)(i)(II) and (4)(B)(i)(III)).

"Significant deficiency" means a deficiency ~~identified by~~ the Agency ~~identifies~~ in a groundwater system under Section 611.803. A significant deficiency might include a defect in system design, operation, or maintenance or a failure or malfunction of the sources, treatment, storage, or distribution system that the Agency determines ~~causes to be causing~~ or ~~could cause~~ have potential for causing ~~the~~ introduction of contamination into the water ~~the supplier delivers~~ delivered to consumers.

BOARD NOTE: ~~This definition derives~~ Derived from 40 CFR 142.16(o)(2)(iv). The Agency must submit to USEPA a definition and description of at least one significant deficiency in each of the eight sanitary survey elements listed in Section 611.801(c) as part of the federal primacy requirements. The Board added the general description of what a significant deficiency might include in non-limiting terms, ~~not intending to limit Agency discretion submitting what USEPA requires in order to provide this important definition within the body of the Illinois rules.~~ ~~What the~~ No Agency ~~submits~~ submission to USEPA ~~cannot~~ can provide a definition within the ~~context of~~ Board regulations ~~without Board rulemaking action~~.

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"Slow sand filtration" means a process involving ~~passing~~passage of raw water through a bed of sand at low velocity (generally less than 0.4 meters per hour (m/h)) resulting in physical and biological mechanisms substantially removing~~substantial~~ particulate material~~removal by physical and biological mechanisms~~.

"SOC" or "Synthetic organic chemical contaminant" refers to that group of contaminants designated as "SOCs" ~~in Section 611.311(c), or "synthetic organic chemicals" or "synthetic organic contaminants", in USEPA regulatory discussions and guidance documents.~~ "SOCs" include alachlor, aldicarb, aldicarb sulfone, aldicarb sulfoxide, atrazine, benzo(a)pyrene, carbofuran, chlordane, dalapon, dibromoethylene (ethylene dibromide or EDB), dibromochloropropane (DBCP), di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, dinoseb, diquat, endothall, endrin, glyphosate, heptachlor, heptachlor epoxide, hexachlorobenzene, hexachlorocyclopentadiene, lindane, methoxychlor, oxamyl, pentachlorophenol, picloram, simazine, toxaphene, polychlorinated biphenyls (PCBs), 2,4-D, 2,3,7,8-TCDD, and 2,4,5-TP.

~~BOARD NOTE: See the Board note appended to Section 611.311 for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.~~

"Source" means a well, reservoir, or other source of raw water.

"Special irrigation district" means an irrigation district in existence prior to May 18, 1994 that provides primarily agricultural service through a piped water system with only incidental residential use or similar use ~~if, where~~ the Agency issues a SEP making either of two determinations~~system or the residential users or similar users of the system comply with either of the following exclusion conditions:~~

The Agency determines ~~by issuing a SEP~~ that the supplier or another person provides alternative water ~~is provided~~ for residential use or similar uses for drinking or cooking to achieve the equivalent level of public health protection ~~that provided by~~ the applicable national primary drinking water regulations provide; or

The Agency issues a SEP determining~~determines by issuing a SEP~~ that the water provided for residential use or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to protect public health at a

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~~level~~ achieve the equivalent ~~that level of protection provided by~~ the applicable ~~NPDWRs provide national primary drinking water regulations.~~

BOARD NOTE: ~~This definition derives~~ Derived from 40 CFR 141.2 and sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42 USC 300f(4)(B)(i)(II) and (4)(B)(i)(III)).

"Standard monitoring" means the monitoring, ~~performed by~~ the supplier ~~performs~~ under Section 611.921(a) and (b), at various specified locations in ~~its~~ a distribution system, including near entry points, at points ~~representing that represent~~ the average residence time in ~~its~~ the distribution system, and at points in ~~its~~ the distribution system ~~representing that are representative of~~ high TTHM and HAA5 concentrations throughout the ~~distribution~~ system.

BOARD NOTE: ~~This definition derives~~ Derived from 40 CFR 141.601(a) and (b).

"Standard sample" means the aliquot of finished drinking water ~~the supplier or laboratory examines that is examined~~ for the presence of coliform bacteria.

"State-only MCL" means one of the inorganic maximum contaminant levels (MCLs) in Section 611.300 or organic MCLs in Section 611.310.

BOARD NOTE: State-only MCLs are those derived prior to the implementation of the USEPA "Phase II" regulations. The Section 611.640 definition of this term, applying only to Subpart O, does not include the Section 611.300 inorganic MCLs.

"Subpart B system" means a ~~PWS using public water system that uses~~ surface water or groundwater under the direct influence of surface water as a source ~~that and which~~ is subject to ~~the requirements of~~ Subpart B and the analytical and monitoring requirements of Sections 611.531, 611.532, and 611.533 ~~and~~ Appendices B and C.

BOARD NOTE: USEPA rules define these "subpart H systems".

"Subpart I compliance monitoring" means monitoring required ~~under Subpart I~~ to demonstrate compliance with ~~requirements for~~ disinfectant residuals, disinfection byproducts, and disinfection byproduct precursors ~~requirements of Subpart I.~~

BOARD NOTE: The equivalent to Subpart I is subpart L of 40 CFR 141 under USEPA's rules.

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~~"Subpart I system" means a public water system that uses surface water or groundwater as a source and which is subject to the disinfectant residuals, disinfection byproducts, and disinfection byproduct precursors requirements of Subpart I.~~

"Subpart Y compliance monitoring" or "Subpart Y monitoring" means monitoring ~~Subpart Y requires~~required to demonstrate compliance with Stage 2 requirements for disinfection byproducts ~~requirements of Subpart Y~~.

BOARD NOTE: The equivalent to Subpart Y is subpart V of 40 CFR 141 under USEPA's rules.

"Supplier ~~of water~~" or "supplier" means any person owning or operating a who owns or operates a public water system (PWS). This term includes the "official custodian". Under several rules, "supplier" includes a person performing a compliance-related activity on behalf of the owner or operator (e.g., a laboratory performing analyses; an engineer performing an assessment, design review, system evaluation, or other work; or a property owner or occupant sampling a tap).

"Surface water" means anyall water that is open to the atmosphere and subject to surface runoff.

"SUVA" means specific ultraviolet absorption at 254 nanometers (nm), ~~which is~~ an indicator of the humic content of water. "SUVA" is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nm ( $UV_{254}$ ) (in  $m^{-1}$ ) divided by its concentration of dissolved organic carbon (in  $mg/l$ ).

"SWS" means "surface water system", a ~~public water supply (PWS using) that uses~~ only surface water sources, including "groundwater under the direct influence of surface water".

BOARD NOTE: This definition derives~~Derived~~ from 40 CFR 141.23(a)(2) note, 141.24(h)(2) note, 141.70(a), and 141.88(a)(1)(ii)~~141.23(b)(2) and 141.24(f)(2) note.~~

"System-specific study plan" means the plan ~~a, submitted by the~~ supplier submits to the Agency under Section 611.922, for studying the occurrence of TTHM and HAA5 in ~~the~~ supplier's distribution system based on either monitoring results or modelling of the system.

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BOARD NOTE: ~~This definition derives~~Derived from 40 CFR 141.602.

"System with a single service connection" means a system ~~supplying that supplies~~ drinking water to consumers via a single service line.

"Too numerous to count" means that the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

"Total organic carbon" or "TOC" means total organic carbon (in mg/ℓ) measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these ~~to oxidize oxidants that convert~~ organic carbon to carbon dioxide, rounded to two significant figures.

"Total trihalomethanes" or "TTHM" means the sum of the concentration of trihalomethanes (THMs); in milligrams per liter (mg/ℓ), rounded to two significant figures.

BOARD NOTE: ~~The~~See the definition of "trihalomethanes" ~~lists for a listing of~~ the four compounds that USEPA considers TTHMs ~~to comprise~~.

"Transient, non-community water system" or "transient non-CWS" means a non-CWS ~~that does not~~ regularly ~~servingserve~~ at least 25 of the same persons over six months of the year.

BOARD NOTE: The federal regulations apply to all "public water systems", ~~which are~~ defined as all systems ~~having that have~~ at least 15 service connections or ~~which~~ regularly ~~servingserve~~ water to at least 25 persons. (See 42 USC 300f(4).) The Act mandates that the Board and the Agency regulate "public water supplies", ~~defined which it defines~~ as having at least 15 service connections or regularly serving 25 persons daily at least 60 days per year. (See Section 3.365 of the Act.) The Department of Public Health regulates transient ~~non-CWSs, non-community water systems~~.

"Treatment" means any process ~~changing that changes~~ the physical, chemical, microbiological, or radiological properties of water ~~that,~~ is under the control of the supplier; and is not a point-of-use treatment device or a point-of-entry treatment device ~~as defined in this Section~~. Treatment includes aeration, coagulation, sedimentation, filtration, activated carbon treatment, disinfection, or fluoridation.

"Trihalomethane" or "THM" means one of ~~four specific the family of organic~~

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~~compounds, named as~~ derivatives of methane, in which ~~halogens substitute~~ three of the four hydrogen atoms ~~in methane are each substituted by a halogen atom~~ in the molecular structure. ~~There are four~~The THMs ~~are the following compounds:~~

Trichloromethane (chloroform),  
Dibromochloromethane,  
Bromodichloromethane, and  
Tribromomethane (bromoform)

"Two-stage lime softening" means a process in which ~~adding~~ chemical ~~precipitant addition~~ and ~~precipitating~~ hardness ~~precipitation~~ occur in ~~each of~~ two distinct ~~unit~~ clarification ~~process units~~~~processes~~ in series prior to filtration.

~~"µg" means micrograms (1/1,000,000 of a gram).~~

"USEPA" means the U.S. Environmental Protection Agency.

"Uncovered finished water storage facility" is a tank, reservoir, or other facility ~~directly open to the atmosphere a supplier uses that is used~~ to store water ~~that which~~ will undergo no further treatment to reduce microbial pathogens except residual disinfection ~~and which is directly open to the atmosphere.~~

"Very small system waiver" means ~~at the~~ conditional waiver from ~~the requirements of~~ Subpart W ~~available under Section 611.924~~ applicable to a supplier ~~servicing that serves~~ fewer than 500 persons ~~that took and which has taken~~ TTHM and HAA5 samples under Subpart I.

BOARD NOTE: ~~This definition derives~~ Derived from 40 CFR 141.604.

"Virus" means a virus of fecal origin that is infectious to humans by waterborne transmission.

"VOC" or "volatile organic chemical contaminant" refers to that group of contaminants designated as "VOCs" ~~in Section 611.311(a), "volatile organic chemicals", or "volatile organic contaminants", in USEPA regulatory discussions and guidance documents. "VOCs" include benzene, dichloromethane, tetrachloromethane (carbon tetrachloride), trichloroethylene, vinyl chloride, 1,1,1-trichloroethane (methyl chloroform), 1,1-dichloroethylene, 1,2-dichloroethane, cis-1,2-dichloroethylene, ethylbenzene, monochlorobenzene, o-dichlorobenzene, styrene, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, tetrachloroethylene,~~



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~~toluene, trans-1,2-dichloroethylene, xylene, and 1,2-dichloropropane.~~

"Waterborne disease outbreak" means ~~at~~the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a ~~public water system (PWS)~~ that is deficient in treatment, as determined by ~~an~~the appropriate local or State agency.

"Wellhead protection area" or "WHPA" means the surface and subsurface recharge area surrounding a ~~CWScommunity water supply~~ well or well field, delineated outside of any applicable setback zones (under Section 17.1 of the Act) under Illinois' Wellhead Protection Program, through which contaminants are reasonably likely to move toward such well or well field.

BOARD NOTE: The Agency uses two guidance documents for identification of WHPAs:

"Guidance Document for Groundwater Protection Needs Assessments", Illinois Environmental Protection Agency, Illinois State Water Survey, and Illinois State Geologic Survey joint report, January 1995; and

"The Illinois Wellhead Protection Program under Section 1428 of the Federal Safe Drinking Water Act", Illinois Environmental Protection Agency, No. 22480, October 1992.

"Wellhead protection program" means the Illinois wellhead protection program ~~for the State of Illinois~~, approved by USEPA under section 1428 of the SDWA, 42 USC 300h-7.

BOARD NOTE: This definition derives~~Derived~~ from 40 CFR 141.71(b). The wellhead protection program includes the "groundwater protection needs assessment" under Section 17.1 of the Act and 35 Ill. Adm. Code 615 through 617.

"Wholesale system" means a ~~PWS treating public water system that treats~~ source water as necessary to produce finished water, ~~delivering which then delivers~~ some or all of that finished water to another ~~PWSpublic water system~~. ~~A~~Delivery by a wholesale system may ~~deliver water~~be through a direct connection or through the distribution system of one or more consecutive systems.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.2 and other sources as noted.

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(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.102 Incorporations by Reference**

- a) Analytical Methods. The Board incorporates by reference the following analytical methods. The ~~methods appear in the body of the rules~~ [refer to the methods](#) by the defined short-form ~~names given them~~ [name indicated](#) in this Section.

"AMI Turbiwell (09)" means "Continuous Measurement of Turbidity Using a SWAN AMI Turbiwell Turbidimeter" (August 10, 2009). Available from SWAN Analytische Instrumente AG, Studbachstrasse 13, CH-8340, Hinwil, Switzerland. Referenced in Section 611.531. Available from the publisher; NEMI; and USEPA, OGWDW (under "Surface Water Treatment Rule (PDF)").

ASTM Methods. Available from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 (610-832-9585 or [www.astm.org/Standard/standards-and-publications](http://www.astm.org/Standard/standards-and-publications)).

"ASTM D511-93 A" means "Standard Test Methods for Calcium and Magnesium in Water", "Test Method A – Complexometric Titration", approved 1993, referenced in Section 611.611.

"ASTM D511-03 A" means "Standard Test Methods for Calcium and Magnesium in Water", "Test Method A – Complexometric Titration", approved 2003, referenced in Section 611.611.

"ASTM D511-09 A" means "Standard Test Methods for Calcium and Magnesium in Water", "Test Method A – Complexometric Titration", approved 2009, referenced in Section 611.611.

"ASTM D511-14 A" means "Standard Test Methods for Calcium and Magnesium in Water", "Test Method A – Complexometric Titration", approved 2014, referenced in Section 611.611.

"ASTM D511-93 B" means "Standard Test Methods for Calcium and Magnesium in Water", "Test Method B – Atomic Absorption

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Spectrophotometric", approved 1993, referenced in Section 611.611.

"ASTM D511-03 B" means "Standard Test Methods for Calcium and Magnesium in Water", "Test Method B – Atomic Absorption Spectrophotometric", approved 2003, referenced in Section 611.611.

"ASTM D511-09 B" means "Standard Test Methods for Calcium and Magnesium in Water", "Test Method B – Atomic Absorption Spectrophotometric", approved 2009, referenced in Section 611.611.

"ASTM D511-14 B" means "Standard Test Methods for Calcium and Magnesium in Water", "Test Method B – Atomic Absorption Spectrophotometric", approved 2014, referenced in Section 611.611.

"ASTM D515-88 A" means "Standard Test Methods for Phosphorus in Water", "Test Method A – Colorimetric Ascorbic Acid Reduction", approved August 19, 1988, referenced in Section 611.611.

"ASTM D859-94" means "Standard Test Method for Silica in Water", approved 1994, referenced in Section 611.611.

"ASTM D859-00" means "Standard Test Method for Silica in Water", approved 2000, referenced in Section 611.611.

"ASTM D859-05" means "Standard Test Method for Silica in Water", approved 2005, referenced in Section 611.611.

"ASTM D859-10" means "Standard Test Method for Silica in Water", approved 2010, referenced in Section 611.611.

"ASTM D859-16" means "Standard Test Method for Silica in Water", approved 2016, referenced in Section 611.611.

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"ASTM D1067-92 B" means "Standard Test Methods for Acidity or Alkalinity in Water", "Test Method B – Electrometric or Color-Change Titration", approved May 15, 1992, referenced in Section 611.611.

"ASTM D1067-02 B" means "Standard Test Methods for Acidity or Alkalinity in Water", "Test Method B – Electrometric or Color-Change Titration", approved in 2002, referenced in Section 611.611.

"ASTM D1067-06 B" means "Standard Test Methods for Acidity or Alkalinity in Water", "Test Method B – Electrometric or Color-Change Titration", approved in 2006, referenced in Section 611.611.

"ASTM D1067-11 B" means "Standard Test Methods for Acidity or Alkalinity in Water", "Test Method B – Electrometric or Color-Change Titration", approved in 2011, referenced in Section 611.611.

"ASTM D1067-16 B" means "Standard Test Methods for Acidity or Alkalinity in Water", "Test Method B – Electrometric or Color-Change Titration", approved in 2006, referenced in Section 611.611.

"ASTM D1125-95 (1999) A" means "Standard Test Methods for Electrical Conductivity and Resistivity of Water", "Test Method A – Field and Routine Laboratory Measurement of Static (Non-Flowing) Samples", approved 1995, reapproved 1999, referenced in Section 611.611.

"ASTM D1179-93 B" means "Standard Test Methods for Fluoride in Water", "Test Method B – Ion Selective Electrode", approved 1993, referenced in Section 611.611.

"ASTM D1179-99 B" means "Standard Test Methods for Fluoride in Water", "Test Method B – Ion Selective Electrode", approved 1999, referenced in Section 611.611.

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"ASTM D1179-04 B" means "Standard Test Methods for Fluoride in Water", "Test Method B – Ion Selective Electrode", approved 2004, referenced in Section 611.611.

"ASTM D1179-10 B" means "Standard Test Methods for Fluoride in Water", "Test Method B – Ion Selective Electrode", approved 2010, referenced in Section 611.611.

"ASTM D1179-16 B" means "Standard Test Methods for Fluoride in Water", "Test Method B – Ion Selective Electrode", approved 2010, referenced in Section 611.611.

"ASTM D1253-86" means "Standard Test Method for Residual Chlorine in Water", reapproved 1992, referenced in Section 611.381.

"ASTM D1253-96" means "Standard Test Method for Residual Chlorine in Water", approved 1996, referenced in Section 611.381.

"ASTM D1253-03" means "Standard Test Method for Residual Chlorine in Water", approved 2003, referenced in Sections 611.381 and 611.531.

"ASTM D1253-08" means "Standard Test Method for Residual Chlorine in Water", approved 2008, referenced in Sections 611.381 and 611.531.

"ASTM D1253-14" means "Standard Test Method for Residual Chlorine in Water", approved 2014, referenced in Sections 611.381 and 611.531.

"ASTM D1293-95" means "Standard Test Methods for pH of Water", approved 1995, referenced in Section 611.611.

"ASTM D1293-99" means "Standard Test Methods for pH of Water", approved 1999, referenced in Section 611.611.

"ASTM D1293-12" means "Standard Test Methods for pH of Water", approved 2012, referenced in Section 611.611.

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["ASTM D1293-18" means "Standard Test Methods for pH of Water", approved 2018, referenced in Section 611.611.](#)

"ASTM D1688-95 A" means "Standard Test Methods for Copper in Water", "Test Method A – Atomic Absorption, Direct", approved 1995, referenced in Section 611.611.

"ASTM D1688-02 A" means "Standard Test Methods for Copper in Water", "Test Method A – Atomic Absorption, Direct", approved 2002, referenced in Section 611.611.

"ASTM D1688-07 A" means "Standard Test Methods for Copper in Water", "Test Method A – Atomic Absorption, Direct", approved 2007, referenced in Section 611.611.

"ASTM D1688-12 A" means "Standard Test Methods for Copper in Water", "Test Method A – Atomic Absorption, Direct", approved 2012, referenced in Section 611.611.

["ASTM D1688-17 A" means "Standard Test Methods for Copper in Water", "Test Method A – Atomic Absorption, Direct", approved 2017, referenced in Section 611.611.](#)

"ASTM D1688-95 C" means "Standard Test Methods for Copper in Water", "Test Method C – Atomic Absorption, Graphite Furnace", approved 1995, referenced in Section 611.611.

"ASTM D1688-02 C" means "Standard Test Methods for Copper in Water", "Test Method C – Atomic Absorption, Graphite Furnace", approved 2002, referenced in Section 611.611.

"ASTM D1688-07 C" means "Standard Test Methods for Copper in Water", "Test Method C – Atomic Absorption, Graphite Furnace", approved 2007, referenced in Section 611.611.

"ASTM D1688-12 C" means "Standard Test Methods for Copper in Water", "Test Method C – Atomic Absorption, Graphite Furnace", approved 2012, referenced in Section 611.611.

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["ASTM D1688-17 C" means "Standard Test Methods for Copper in Water", "Test Method C – Atomic Absorption, Graphite Furnace", approved 2017, referenced in Section 611.611.](#)

"ASTM D2036-98 A" means "Standard Test Methods for Cyanide in Water", "Test Method A – Total Cyanides after Distillation", approved 1998, referenced in Section 611.611.

"ASTM D2036-06 A" means "Standard Test Methods for Cyanide in Water", "Test Method A – Total Cyanides after Distillation", approved 2006, referenced in Section 611.611.

"ASTM D2036-98 B" means "Standard Test Methods for Cyanide in Water", "Test Method B – Cyanides Amenable to Chlorination by Difference", approved 1998, referenced in Section 611.611.

"ASTM D2036-06 B" means "Standard Test Methods for Cyanide in Water", "Test Method B – Cyanides Amenable to Chlorination by Difference", approved 2006, referenced in Section 611.611.

"ASTM D2459-72" means "Standard Test Method for Gamma Spectrometry in Water", approved July 28, 1972, discontinued 1988, referenced in Section 611.720.

"ASTM D2460-97" means "Standard Test Method for Radionuclides of Radium in Water", approved 1997, referenced in Section 611.720.

"ASTM D2460-07" means "Standard Test Method for Radionuclides of Radium in Water", approved 2007, referenced in Section 611.720.

"ASTM D2907-97" means "Standard Test Methods for Microquantities of Uranium in Water by Fluorometry", approved 1997, referenced in Section 611.720.

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"ASTM D2972-97 B" means "Standard Test Methods for Arsenic in Water", "Test Method B – Atomic Absorption, Hydride Generation", approved 1997, referenced in Section 611.611.

"ASTM D2972-03 B" means "Standard Test Methods for Arsenic in Water", "Test Method B – Atomic Absorption, Hydride Generation", approved 2003, referenced in Section 611.611.

"ASTM D2972-15 B" means "Standard Test Methods for Arsenic in Water", "Test Method B – Atomic Absorption, Hydride Generation", approved 2015, referenced in Section 611.611.

"ASTM D2972-97 C" means "Standard Test Methods for Arsenic in Water", "Test Method C – Atomic Absorption, Graphite Furnace", approved 1997, referenced in Section 611.611.

"ASTM D2972-03 C" means "Standard Test Methods for Arsenic in Water", "Test Method C – Atomic Absorption, Graphite Furnace", approved 2003, referenced in Section 611.611.

"ASTM D2972-15 C" means "Standard Test Methods for Arsenic in Water", "Test Method C – Atomic Absorption, Graphite Furnace", approved 2015, referenced in Section 611.611.

"ASTM D3223-97" means "Standard Test Method for Total Mercury in Water", approved 1997, referenced in Section 611.611.

"ASTM D3223-02" means "Standard Test Method for Total Mercury in Water", approved 2002, referenced in Section 611.611.

"ASTM D3223-12" means "Standard Test Method for Total Mercury in Water", approved 2012, referenced in Section 611.611.

["ASTM D3223-17" means "Standard Test Method for Total Mercury in Water", approved 2017, referenced in Section 611.611.](#)

"ASTM D3454-97" means "Standard Test Method for Radium-226 in Water", approved 1997, referenced in Section 611.720.



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"ASTM D3454-05" means "Standard Test Method for Radium-226 in Water", approved 2005, referenced in Section 611.720.

["ASTM D3454-18" means "Standard Test Method for Radium-226 in Water", approved 2005, referenced in Section 611.720.](#)

"ASTM D3559-96 D" means "Standard Test Methods for Lead in Water", "Test Method D – Atomic Absorption, Graphite Furnace", approved August 6, 1990, referenced in Section 611.611.

"ASTM D3559-03 D" means "Standard Test Methods for Lead in Water", "Test Method D – Atomic Absorption, Graphite Furnace", approved 2003, referenced in Section 611.611.

"ASTM D3559-08 D" means "Standard Test Methods for Lead in Water", "Test Method D – Atomic Absorption, Graphite Furnace", approved 2008, referenced in Section 611.611.

"ASTM D3559-15 D" means "Standard Test Methods for Lead in Water", "Test Method D – Atomic Absorption, Graphite Furnace", approved 2015, referenced in Section 611.611.

"ASTM D3645-97 B" means "Standard Test Methods for Beryllium in Water", "Method B – Atomic Absorption, Graphite Furnace", approved 1997, referenced in Section 611.611.

"ASTM D3645-03 B" means "Standard Test Methods for Beryllium in Water", "Method B – Atomic Absorption, Graphite Furnace", approved 2003, referenced in Section 611.611.

"ASTM D3645-08 B" means "Standard Test Methods for Beryllium in Water", "Method B – Atomic Absorption, Graphite Furnace", approved 2008, referenced in Section 611.611.

"ASTM D3645-15 B" means "Standard Test Methods for Beryllium in Water", "Method B – Atomic Absorption, Graphite Furnace", approved 2015, referenced in Section 611.611.

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"ASTM D3649-91" means "Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water", approved 1991, referenced in Section 611.720.

"ASTM D3649-98a" means "Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water", approved 1998, referenced in Section 611.720.

"ASTM D3649-06" means "Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water", approved 2006, referenced in Section 611.720.

"ASTM D3697-92" means "Standard Test Method for Antimony in Water", approved 1992, referenced in Section 611.611.

"ASTM D3697-02" means "Standard Test Method for Antimony in Water", approved 2002, referenced in Section 611.611.

"ASTM D3697-07" means "Standard Test Method for Antimony in Water", approved 2007, referenced in Section 611.611.

"ASTM D3697-12" means "Standard Test Method for Antimony in Water", approved 2012, referenced in Section 611.611.

["ASTM D3697-17" means "Standard Test Method for Antimony in Water", approved 2017, referenced in Section 611.611.](#)

"ASTM D3859-98 A" means "Standard Test Methods for Selenium in Water", "Method A – Atomic Absorption, Hydride Method", approved 1998, referenced in Section 611.611.

"ASTM D3859-03 A" means "Standard Test Methods for Selenium in Water", "Method A – Atomic Absorption, Hydride Method", approved 2003, referenced in Section 611.611.

"ASTM D3859-08 A" means "Standard Test Methods for Selenium in Water", "Method A – Atomic Absorption, Hydride Method", approved 2008, referenced in Section 611.611.

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"ASTM D3859-15 A" means "Standard Test Methods for Selenium in Water", "Method A – Atomic Absorption, Hydride Method", approved 2015, referenced in Section 611.611.

"ASTM D3859-98 B" means "Standard Test Methods for Selenium in Water", "Method B – Atomic Absorption, Graphite Furnace", approved 1998, referenced in Section 611.611.

"ASTM D3859-03 B" means "Standard Test Methods for Selenium in Water", "Method B – Atomic Absorption, Graphite Furnace", approved 2003, referenced in Section 611.611.

"ASTM D3859-08 B" means "Standard Test Methods for Selenium in Water", "Method B – Atomic Absorption, Graphite Furnace", approved 2008, referenced in Section 611.611.

"ASTM D3859-15 B" means "Standard Test Methods for Selenium in Water", "Method B – Atomic Absorption, Graphite Furnace", approved 2015, referenced in Section 611.611.

"ASTM D3867-90 A" means "Standard Test Methods for Nitrite-Nitrate in Water", "Test Method A – Automated Cadmium Reduction", approved 1990, referenced in Section 611.611.

"ASTM D3867-90 B" means "Standard Test Methods for Nitrite-Nitrate in Water", "Test Method B – Manual Cadmium Reduction", approved January 10, 1990, referenced in Section 611.611.

"ASTM D3972-97" means "Standard Test Method for Isotopic Uranium in Water by Radiochemistry", approved 1997, referenced in Section 611.720.

"ASTM D3972-02" means "Standard Test Method for Isotopic Uranium in Water by Radiochemistry", approved 2002, referenced in Section 611.720.

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"ASTM D3972-09" means "Standard Test Method for Isotopic Uranium in Water by Radiochemistry", approved 2009, referenced in Section 611.720.

"ASTM D4107-91" means "Standard Test Method for Tritium in Drinking Water", approved 1991, referenced in Section 611.720.

"ASTM D4107-98" means "Standard Test Method for Tritium in Drinking Water", approved 1998, referenced in Section 611.720.

"ASTM D4107-08" means "Standard Test Method for Tritium in Drinking Water", approved 2008, referenced in Section 611.720.

"ASTM D4327-97" means "Standard Test Method for Anions in Water by Ion Chromatography", approved 1997, referenced in Section 611.611.

"ASTM D4327-03" means "Standard Test Method for Anions in Water by Ion Chromatography", approved 2003, referenced in Section 611.611.

"ASTM D4327-11" means "Standard Test Method for Anions in Water by Ion Chromatography", approved 2011, referenced in Section 611.611.

["ASTM D4327-17" means "Standard Test Method for Anions in Water by Ion Chromatography", approved 2017, referenced in Section 611.611.](#)

"ASTM D4785-93" means "Standard Test Method for Low-Level Iodine-131 in Water", approved 1993, referenced in Section 611.720.

"ASTM D4785-00a" means "Standard Test Method for Low-Level Iodine-131 in Water", approved 2000, referenced in Section 611.720.

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"ASTM D4785-08" means "Standard Test Method for Low-Level Iodine-131 in Water", approved 2008, referenced in Section 611.720.

"ASTM D5174-97" means "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry", approved 1997, referenced in Section 611.720.

"ASTM D5174-02" means "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry", approved 2002, referenced in Section 611.720.

"ASTM D5174-07" means "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry", approved 2007, referenced in Section 611.720.

"ASTM D5317-93" means "Standard Test Method for Determination of Chlorinated Organic Acid Compounds in Water by Gas Chromatography with an Electron Capture Detector", approved 1993, referenced in Section 611.645.

"ASTM D5317-98(2003)" means "Standard Test Method for Determination of Chlorinated Organic Acid Compounds in Water by Gas Chromatography with an Electron Capture Detector", approved 1998 (reapproved 2003), referenced in Section 611.645.

"ASTM D5673-03" means "Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry", approved 2003, referenced in Section 611.720.

"ASTM D5673-05" means "Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry", approved 2005, referenced in Section 611.720.

"ASTM D5673-10" means "Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry", approved 2010, referenced in Section 611.720.

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"ASTM D5673-16" means "Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry", approved 2016, referenced in Section 611.720.

"ASTM D6239-09" means "Standard Test Method for Uranium in Drinking Water by High-Resolution Alpha-Liquid-Scintillation Spectrometry", approved 2009, referenced in Section 611.720.

"ASTM D6508-00(2005)" means "Standard Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte", approved 2000 (revised 2005), referenced in Section 611.611.

"ASTM D6508-15" means "Standard Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte", approved 2015, referenced in Section 611.611.

"ASTM D6581-00" means "Standard Test Method for Bromate, Bromide, Chlorate, and Chlorite in Drinking Water by Chemically Suppressed Ion Chromatography", approved 2000, referenced in Section 611.381.

"ASTM D6581-08 A" means "Standard Test Method for Bromate, Bromide, Chlorate, and Chlorite in Drinking Water by Suppressed Ion Chromatography", "Test Method A – Chemically Suppressed Ion Chromatography", approved 2008, referenced in Section 611.381.

"ASTM D6581-08 B" means "Standard Test Method for Bromate, Bromide, Chlorate, and Chlorite in Drinking Water by Suppressed Ion Chromatography", "Test Method B – Electrolytically Suppressed Ion Chromatography", approved 2008, referenced in Section 611.381.

"ASTM D6888-04" means "Standard Test Method for Available Cyanide with Ligand Displacement and Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection", approved 2004, referenced in Section 611.611.

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"ASTM D6919-03" means "Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography", approved 2003, referenced in Section 611.611.

"ASTM D6919-09" means "Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography", approved 2009, referenced in Section 611.611.

["ASTM D6919-17" means "Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography", approved 2017, referenced in Section 611.611.](#)

"ASTM D7283-17" means "Standard Test Method for Alpha and Beta Activity in Water by Liquid Scintillation Counting", approved 2017, referenced in Section 611.720.

"ATI Orion Technical Bulletin 601 (94)" means "Standard Method of Testing for Nitrate in Drinking Water" (July 1994), Part Number 221890-001. Available from Thermo-Fisher Scientific, 168 Third Ave, Waltham, MA 02451 (800-556-2323; www.thermofisher.com). Referenced in Section 611.611.

"Charm Fast Phage (12)" means "Fast Phage Test: Presence/Absence for Coliphage in Ground Water with Same Day Positive Prediction", ATP Case No. D09-0007, Version 009 (November 28, 2012). Available from Charm Sciences, Inc., 659 Andover St., Lawrence, MA 01843-1032. Referenced in Section 611.802 and USEPA, OGWDW (under "Ground Water Rule (PDF)").

"Chromocult® (00)" means "Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters", Version 1.0 (November 2000). Available from EMD Millipore (division of Merck KGaA, Darmstadt, Germany), 290 Concord Road, Billerica, MA 01821 (800-645-5476 or 781-533-6000) and USEPA,

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OGWDW (under "Ground Water Rule (PDF)" and "Revised Total Coliforms Rules (PDF)"). Referenced in Sections 611.802 and 611.1052.

"E\*Colite (98)" means "Alternative Test Procedure Case #D95-0007: Charm E\*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Drinking Water" (January 9, 1998). Available from Charm Sciences, Inc., 659 Andover St., Lawrence, MA 01843-1032 and USEPA, OGWDW (under "Ground Water Rule (PDF)" and "Revised ~~Total~~ ~~Totasl~~ Coliforms Rules (PDF)"). Referenced in Sections 611.802 and 611.1052.

EML Methods. Available from USEPA, OGWDW (listed under "Radionuclides (PDF)" by individual method numbers).

EML (90). In "EML Procedures Manual", HASL 300, Volumes 1 and 2, 27<sup>th</sup> ed. (November 1990).

"EML (90) Ga-01" means section 4.5.2.3, Ga-01, "Gamma Radioassay", in section 4.5.2.3, "Radiometry", in 27<sup>th</sup> ed. Referenced in Section 611.720. USEPA, OGWDW lists EML (90) Ga-01 as "4.5.2.3".

"EML (90) Ra-05" means Ra-05, "Radium-226 in Tap Water, Urine, and Feces", in section 4.5.4, "Radiochemical", in 27<sup>th</sup> ed. Referenced in Section 611.720.

"EML (90) Sr-01" means Sr-01, "Strontium-89", in section 4.5.4, "Radiochemical", in 27<sup>th</sup> ed. Referenced in Section 611.720.

"EML (90) Sr-02" means Sr-02, "Strontium-90", in section 4.5.4, "Radiochemical", in 27<sup>th</sup> ed. Referenced in Section 611.720.

"EML (90) U-02" means U-02, "Isotopic Uranium in Biological and Environmental Materials", in section 4.5.4, "Radiochemical", in 27<sup>th</sup> ed.



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"EML (90) U-04" means U-04, "Uranium in Biological and Environmental Materials", in section 4.5.4, "Radiochemical", in 27<sup>th</sup> ed. Referenced in Section 611.720.

EML (97). In "EML Procedures Manual", HASL 300, Volumes 1 and 2, 28<sup>th</sup> ed., Revision 0 (February 1997). Currently available on-line from United States Department of Homeland Security, Science and Technology Directorate (formerly United States Department of Energy, Environmental Measurements Laboratory) ([www.hsd.org/?abstract&doc=100185&coll=limited](http://www.hsd.org/?abstract&doc=100185&coll=limited) or [www.wipp.energy.gov/namp/emllegacy/procman.htm](http://www.wipp.energy.gov/namp/emllegacy/procman.htm)).

"EML (97) Ga-01-R" means Ga-01-R, "Gamma Radioassay", in section 4.5.2, "Radiometrology", in 28<sup>th</sup> ed. Referenced in Section 611.720.

"EML (97) Ra-04" means Ra-04-RC, "Radium-226 in Tap Water, Urine, and Feces", in section 4.5.4, "Radiochemical", in 28<sup>th</sup> ed. Referenced in Section 611.720.

"EML (97) Sr-01" means Sr-01-RC, "Strontium-89", in section 4.5.4, "Radiochemical", in 28<sup>th</sup> ed. Referenced in Section 611.720.

"EML (97) Sr-02" means Sr-02-RC, "Strontium-90", in section 4.5.4, "Radiochemical", in 28<sup>th</sup> ed. Referenced in Section 611.720.

"EML (97) U-02" means U-02-RC, "Isotopic Uranium in Biological and Environmental Materials", in section 4.5.4, "Radiochemical", in 28<sup>th</sup> ed.

"EML (97) U-04" means U-04-RC, "Uranium in Biological and Environmental Materials", in section 4.5.4, "Radiochemical", in 28<sup>th</sup> ed. Referenced in Section 611.720.

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"Enterolert (96)" means "Evaluation of Enterolert for Enumeration of Enterococci in Recreational Waters", Applied and Environmental Microbiology, Oct. 1996, vol. 62, no. 10, p. 3881. Available from American Society for Microbiology, 1752 N Street N.W., Washington, DC 20036 (202-737-3600). Referenced in Section 611.802.

BOARD NOTE: ~~In At the table to~~ 40 CFR 141.402(c)(2), USEPA approved the method ~~as described in~~ the above literature review ~~describes~~. The method itself is ~~embodied~~ in the printed instructions to the proprietary kit available from IDEXX Laboratories, Inc. (accessible on-line and available by download from [www.asm.org](http://www.asm.org), as "Enterolert™ Procedure"). ASTM approved the method as "Standard Test Method for Enterococci in Water Using Enterolert™", which is available in two versions from ASTM: ASTM D6503-99 and ASTM D6503-99(2005). While it is more conventional to incorporate by reference the method as presented in the kit instructions or as approved by ASTM, the Board is constrained to incorporate by reference the version that USEPA ~~has~~ explicitly ~~approves~~ ~~approved~~, which is the version ~~that appears in~~ the technical literature ~~describes~~.

"Georgia Radium (04)" means "Method for the Determination of Radium-226 and Radium-228 in Drinking Water by Gamma-ray Spectrometry Using HPGE or Ge(Li) Detectors", Revision 1.2 (December 2004). Available from Georgia Tech Research Institute, Robert Rosson, 925 Dalney Road, Atlanta, GA 30332 (404-407-6339) and USEPA, OGWDW (under "Radionuclides (PDF)"). Referenced in Section 611.720.

"GLI Method 2 (92)" means "Turbidity GLI Method 2" (November 2, 1992). Available from Great Lakes Instruments, Inc., 8855 North 55<sup>th</sup> Street, Milwaukee, WI 53223. Also available from USEPA, OGWDW (under "Surface Water Treatment Rule (PDF)"). Referenced in Section 611.531.

"Guidance Manual for Filtration and Disinfection (91)" means "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources" (March 1991), EPA 570/3-91-001, USEPA, Office of Drinking Water, Criteria and Standards Division, Science and Technology Branch. Available from NTRL (document number PB93-222933) and USEPA, NSCEP (search "570391001"). Referenced in Sections 611.111 and 611.212.

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Hach Methods. Available from Hach Company, P.O. Box 389, Loveland, CO 80539-0389 (800-227-4224 or [www.hach.com](http://www.hach.com)).

"Hach 8026 (15)" means Hach Method 8026, "Spectrophotometric Measurement of Copper in Finished Drinking Water", Revision 1.2 (December 2015). Referenced in Section 611.611.

BOARD NOTE: Also available from USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)").

"Hach 8195 (18)" means Hach Method 8195, "Determination of Turbidity by Nephelometry", Revision 3.0 (March 2018). Referenced in Section 611.531.

"Hach 10029 (99) (m-ColiBlue24<sup>®</sup>)" means m-ColiBlue24<sup>®</sup> Test, Method No. 10029, "Total Coliforms and E. coli Membrane Filtration Method with m-ColiBlue24<sup>®</sup> Broth", Revision 2 (August 17, 1999), document number DOC316.53.001213. Referenced in Sections 611.802 and 611.1052.

BOARD NOTE: Also available from USEPA, OGWDW (under "Ground Water Rule (PDF)").

"Hach 10133 (00) (FilterTrak)" means Hach FilterTrak Method 10133, "Determination of Turbidity by Laser Nephelometry", Revision 2.0 (January 7, 2000) in Appendix A of "Introduction to Laser Nephelometry: An Alternative to Conventional Particulate Analysis Methods". Referenced in Section 611.531.

BOARD NOTE: Also available from USEPA, OGWDW (under "Surface Water Treatment Rule (PDF)").

"Hach 10206 (11) (TNTplus 835/836)" means Hach TNTplus 835/836 Method 10206, "Spectrophotometric Measurement of Nitrate in Water and Wastewater", Revision 2.0 (January 2011). Referenced in Section 611.611.

BOARD NOTE: Also available from USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)").

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"Hach 10225 (11) (SPADNS 2)" means Hach SPADNS 2 Method 10225, "Fluoride, USEPA SPADNS 2 Method 10225", Revision 2.0 (January 2011). Referenced in Section 611.611.

BOARD NOTE: Also available from USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)").

"Hach 10241 (15)" means Hach Method 10241, "Spectrophotometric Measurement of Free Chlorine (Cl<sub>2</sub>) in Finished Drinking Water", Revision 1.2 (November 2015). Referenced in Sections 611.381 and 611.531.

BOARD NOTE: Also available from USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)").

"Hach 10258 (16)" means Hach Method 10258, "Determination of Turbidity by 360° Nephelometry", Revision 1.0 (January 2016). Referenced in Section 611.531.

BOARD NOTE: Also available from USEPA, OGWDW (under "Surface Water Treatment Rule (PDF)").

"Hach 10258 (18)" means Hach Method 10258, "Determination of Turbidity by 360° Nephelometry", Revision 2.0 (March 2018). Referenced in Section 611.531.

"Hach 10260 (13)" means Hach Method 10260, "Determination of Chlorinated Oxidants (Free and Total) in Water Using Disposable Planar Reagent-filled Cuvettes and Mesofluic Channel Colorimetry" (April 2013). Referenced in Sections 611.381 and 611.531.

BOARD NOTE: Also available from USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)").

"Hach 10261 (15)" means Hach Method 10261, "Total Organic Carbon in Finished Drinking Water by Catalyzed Ozone Hydroxyl Radical Oxidation Infrared Analysis", Revision 1.2 (December 2015). Referenced in Section 611.381.

BOARD NOTE: Also available from USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)").

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"Hach 10267 (15)" means Hach Method 10267, "Spectrophotometric Measurement of Total Organic Carbon (TOC) in Finished Drinking Water", Revision 1.2 (December 2015). Referenced in Section 611.381.  
BOARD NOTE: Also available from USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)").

"Hach 10272 (15)" means Hach Method 10272, "Spectrophotometric Measurement of Copper in Finished Drinking Water", Revision 1.2 (December 2015). Referenced in Section 611.611.  
BOARD NOTE: Also available from USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)").

"ITS D99-003 (03)" means "Method # (D99-003): Free Chlorine Species (HOCl- and OCl-) by Test Strip", Revision 3.0 (November 21, 2003). Available from Industrial Test Systems, Inc., 1875 Langston St., Rock Hill, SC 29730 (803-329-2999) and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Section 611.381.

"Kelada 01 (01)" means "Method Kelada-01: Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, and Thiocyanate", Revision 1.2 (August 2001), USEPA Office of Water, document number EPA 821/B-01-009. Available from NTRL (document number PB2001-108275) and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)"). Referenced in Section 611.611.

Lovibond Methods. Available from Tintometer, Inc., 6456 Parkland Drive, Sarasota, FL 34243 (800-922-5242, 941-758-6410, or [www.lovibond.us](http://www.lovibond.us)) and USEPA, OGWDW (under "Surface Water Treatment Rule (PDF)").

"Lovibond PTV 1000 (16)" means "Continuous Measurement of Drinking Water Turbidity Using a Lovibond PTV 1000 White Light LED Turbidimeter", Revision 1.0 (December 20, 2016). Referenced in Section 611.531.

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"Lovibond PTV 2000 (16)" means "Continuous Measurement of Drinking Water Turbidity Using a Lovibond PTV 2000 660-nm LED Turbidimeter", Revision 1.0 (December 20, 2016). Referenced in Section 611.531.

"Lovibond PTV 6000 (16)" means "Continuous Measurement of Drinking Water Turbidity Using a Lovibond PTV 6000 Laser Turbidimeter", Revision 1.0 (December 20, 2016). Referenced in Section 611.531.

[Maine Methods. Available from Maine Health and Environmental Testing Laboratory, 221 State Street, Augusta, ME 04333 \(207-287-2727\).](#)

"ME355.01 (09)" means "Determination of Cyanide in Drinking Water by GC/MS Headspace Analysis", Revision 1 (May 26, 2009). ~~Available from H&E Testing Laboratory, 221 State Street, Augusta, ME 04333 (207-287-2727).~~ Referenced in Section 611.611. ~~Also available~~ Available from ~~the publisher;~~ NEMI; and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)").

["ME 531 \(19\)" means "Measurement or N-Methylcarbamoyloximes and N-Methylcarbamates in Drinking Water by LC-MS/MS", version 1.0 \(September 2019\). Referenced in Section 611.645.](#)

Mitchell Methods. Available from Leck Mitchell, PhD, PE, 656 Independence Valley Dr., Grand Junction, CO 81507 (920-244-8661); , NEMI (except for Mitchell M5331 (16)); and USEPA, OGWDW (under "Surface Water Treatment Rule (PDF)").

"Mitchell M5271 (09)" means Mitchell Method M5271, "Determination of Turbidity by Laser Nephelometry", Revision 1.1 (March 5, 2009). Referenced in Section 611.531.

"Mitchell M5331 (09)" means Mitchell Method M5331, "Determination of Turbidity by Laser Nephelometry", Revision 1.1 (March 2009). Referenced in Section 611.531.

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"Mitchell M5331 (16)" means Mitchell Method M5331, "Determination of Turbidity by Laser Nephelometry", Revision 1.2 (February 2016). Referenced in Section 611.531.

"Modified Colitag™ (09)" means "Modified Colitag™ Test Method for Simultaneous Detection of E. coli and other Total Coliforms in Water", (ATP D05-0035) (August 28, 2009). Available from CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA 95403 (800-878-7654; www.cpiinternational.com); NEMI; and USEPA, OGWDW (under "Ground Water Rule (PDF)" and "Revised Total Coliforms Rules (PDF)"). Referenced in Sections 611.802 and 611.1052.

["Modified Colitag™ \(20\)" means "Modified Colitag™ Test Method for Simultaneous Detection of Total Coliforms and E. coli in Water", Version 2.0, \(June 2020\). Available from Neogen Corporation, 620 Lesher Place, Lansing, MI 48912. Referenced in Sections 611.802 and 611.1052.](#)

"NBS Handbook 69 (63)" means "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure" (August 1963), U.S. Department of Commerce, National Bureau of Standards. Available from International Atomic Energy Agency (IAEA), Vienna International Centre, PO Box 100, 1400 Vienna, Austria, ((+43-1) 2600-0; www.iaea.org/Public/048/37048205.pdf) or Oak Ridge Associated Universities (ORAU), MC100-44, PO Box 117, Oak Ridge, TN 37831-0117 (865-576-3146). Referenced in Sections 611.101 and 611.330.

BOARD NOTE: The 1963 version of National Bureau of Standards Handbook 69 modifies the 1959 publication of the National Committee on Radiation Protection, NCRP Report No. 22, of the same title. The version available on the NCRP website is the 1959 document.

"NECi Nitrate Reductase (06)" means "Method for Nitrate Reductase Nitrate-Nitrogen Analysis of Drinking Water", Version 1.0, Revision 2.0 (February 1, 2016). Available from Superior Enzymes Inc., 334 Hecla Street, Lake Linden, Michigan 49945 (906-296-1115). Also available from USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)"). Referenced in Section 611.611.

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"New Jersey Radium (90)" means "Determination of Ra-228 in Drinking Water" (August 1990), New Jersey Department of Environmental Protection, Division of Environmental Quality, Bureau of Radiation and Inorganic Analytical Services. Available from publisher, 9 Ewing Street, Trenton, NJ 08625. Referenced in Section 611.720.

"New York Radium (82)" means "Determination of 226Ra and 228Ra, Ra-02" (January 1980, revised June 1982), Radiological Sciences Institute, Center for Laboratories and Research, New York State Department of Health. Available from publisher, Empire State Plaza, Albany, NY 12201. Referenced in Section 611.720.

"OIA-1677 (04)" means "Method OIA-1677 DW, Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry" (January 2004), document number EPA 821/R-04/001. Referenced in Section 611.611. Available from ALPKEM, Division of OI Analytical, P.O. Box 9010, College Station, TX 77842-9010, telephone: 979-690-1711, Internet: [www.oico.com](http://www.oico.com); USEPA, NSCEP (search "821R04001"); and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)").

"Orion AQ4500 (09)" means "Determination of Turbidity by LED Nephelometry", Revision 5 (March 12, 2009). Available from ThermoFisher Scientific, 168 Third Ave, Waltham, MA 02451 (800-556-2323 or [www.thermofisher.com](http://www.thermofisher.com)); NEMI; and USEPA, OGWDW (under "Surface Water Treatment Rule (PDF)"). Referenced in Section 611.531.

Palintest Methods. Available from Palintest, Ltd., [600 Corporate Circle, Suite F, Golden, CO 80401 \(720-221-6878\)](http://www.palintest.com)~~1455 Jamike Avenue, Suite 100, Erlanger, KY (800-835-9629)~~.

"Palintest 1001 (99)" means "Method 1001: Lead in Drinking Water by Differential Pulse Anodic Stripping Voltammetry", August 1999, referenced in Section 611.611.

BOARD NOTE: Also available from USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)").



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["Palintest 1001 \(20\)" means "Method 1001: Lead in Drinking Water by Differential Pulse Anodic Stripping Voltammetry", May 2020, Revision 1.1, referenced in Section 611.611.](#)

[BOARD NOTE: Also available from USEPA, OGWDW \(under "Inorganic Contaminants and Other Inorganic Constituents \(PDF\)"\).](#)

"Palintest ChlordioX Plus (13)" means "Chlorine Dioxide and Chlorite in Drinking Water by Amperometry using Disposable Sensors", November 2013, referenced in Sections 611.381 and 611.531.

BOARD NOTE: Also available from USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)").

["Palintest ChlordioX Plus \(20\)" means "Chlorine Dioxide and Chlorite in Drinking Water by Amperometry using Disposable Sensors", Version 1.1 \(February 2020\), referenced in Sections 611.381 and 611.531.](#)

"Palintest ChloroSense (09)" means "Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense", September 2009, referenced in Sections 611.381 and 611.531.

BOARD NOTE: Also available from NEMI and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)").

["Palintest ChloroSense \(20\)" means "Free and Total Chlorine in Drinking Water by Amperometry using disposable sensors", Revision 1.1 \(February 2020\), referenced in Sections 611.381 and 611.531.](#)

"QuikChem 10-204-00-1-X (00)" means "Digestion and distillation of total cyanide in drinking and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis", Revision 2.1 (November 30, 2000). Available from Lachat Instruments, 6645 W. Mill Rd., Milwaukee, WI 53218 (414-358-4200) and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)"). Referenced in Section 611.611.

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"RAPID'E. coli (20)" means "Simultaneous Detection of Total Coliform Bacteria and Escherichia coli Using RAPID'E. coli 2 (REC2) in Drinking Water" (May 2020). Available from Bio-Rad Laboratories, 2000 Nobel Drive, Hercules, California 94547. Referenced in Sections 611.802 and 611.1052.

"Readycult® (07)" means "Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters", Version 1.1 (January 2007). Available from EMD Millipore (division of Merck KGaA, Darmstadt, Germany), 290 Concord Road, Billerica, MA 01821 (800-645-5476 or 781-533-6000) and USEPA, OGWDW (under "Ground Water Rule (PDF)" and "Revised Total Coliforms Rules (PDF)"). Referenced in Sections 611.802 and 611.1052.

"SimPlate (00)" means "IDEXX SimPlate™ HPC Test Method for Heterotrophs in Water" (November 29, 2000). ~~Available~~Available from IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092 (800-321-0207). Referenced in Section 611.531.

SM Methods. Approved as the version in the indicated editions of "Standard Methods for the Examination of Water and Wastewater" Available from the American Public Health Association, 800 I Street NW, Washington, DC 20005, 202-777-2742, www.awwa.org/store; American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235, 303-794-7711; Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314, 800-666-0206, www.wef.org; or Standard Methods Online, 800-633-4931, www.standardmethods.org.

BOARD NOTE: The Board ~~did~~does not separately list versions of methods from Standard Methods Online ~~that~~also appearing~~appear in the same version~~ in a printed edition. Using a~~Use of the approved~~ method in the approved version as available~~indicated~~ from Standard Methods Online is acceptable.

"SM 302 (71)" means Method 302, "Gross Alpha and Gross Beta Radioactivity in Water (Total, Suspended, and Dissolved)", only the version in the 13<sup>th</sup> edition. Referenced in Section 611.720.

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"SM 303 (71)" means Method 303, "Total Radioactive Strontium and Strontium 90 in Water", only the version in the 13<sup>th</sup> edition. Referenced in Section 611.720.

"SM 304 (71)" means Method 304, "Radium in Water by Precipitation", only the version in the 13<sup>th</sup> edition. Referenced in Section 611.720.

"SM 305 (71)" means Method 305, "Radium 226 by Radon in Water (Soluble, Suspended, and Total)", only the version in the 13<sup>th</sup> edition. Referenced in Section 611.720.

"SM 306 (71)" means Method 306, "Tritium in Water", in "Standard Methods for the Examination of Water and Wastewater", only the version in the 13<sup>th</sup> edition. Referenced in Section 611.720.

"SM 2130 B (88)" means Method 2130 B, "Turbidity", "Nephelometric Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 2130 B (94)" means Method 2130 B, "Turbidity", "Nephelometric Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.531.

"SM 2130 B (01)" means Method 2130 B, "Turbidity", "Nephelometric Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.531.

"SM 2320 B (91)" means Method 2320 B, "Alkalinity", "Titration Method", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.611.

"SM 2320 B (97)" means Method 2320 B, "Alkalinity", "Titration Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

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"SM 2510 B (91)" means Method 2510 B, "Conductivity", "Laboratory Method", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.611.

"SM 2510 B (97)" means Method 2510 B, "Conductivity", "Laboratory Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 2550 (88)" means Method 2550, "Temperature, Laboratory and Field Methods", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 2550 (93)" means Method 2550, "Temperature, Laboratory and Field Methods", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.611.

"SM 2550 (00)" means Method 2550, "Temperature, Laboratory and Field Methods", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.611.

"SM 2550 (10)" means Method 2550, "Temperature, Laboratory and Field Methods", only the version in the 22<sup>nd</sup> and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 3111 B (89)" means Method 3111 B, "Metals by Flame Atomic Absorption Spectrometry", "Direct Air-Acetylene Flame Method", only the version in the 18<sup>th</sup> edition. Referenced in Sections 611.611 and 611.612.

"SM 3111 B (93)" means Method 3111 B, "Metals by Flame Atomic Absorption Spectrometry", "Direct Air-Acetylene Flame Method", only the version in the 19<sup>th</sup> edition. Referenced in Sections 611.611 and 611.612.

"SM 3111 B (99)" means Method 3111 B, "Metals by Flame Atomic Absorption Spectrometry", "Direct Air-Acetylene Flame Method". Referenced in Sections 611.611 and 611.612.

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"SM 3111 D (89)" means Method 3111 D, "Metals by Flame Atomic Absorption Spectrometry", "Direct Nitrous Oxide-Acetylene Flame Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 3111 D (93)" means Method 3111 D, "Metals by Flame Atomic Absorption Spectrometry", "Direct Nitrous Oxide-Acetylene Flame Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 3111 D (99)" means Method 3111 D, "Metals by Flame Atomic Absorption Spectrometry", "Direct Nitrous Oxide-Acetylene Flame Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 3112 B (88)" means Method 3112 B, "Metals by Cold-Vapor Atomic Absorption Spectrometry", "Cold-Vapor Atomic Absorption Spectrometric Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 3112 B (93)" means Method 3112 B, "Metals by Cold-Vapor Atomic Absorption Spectrometry", "Cold-Vapor Atomic Absorption Spectrometric Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 3112 B (99)" means Method 3112 B, "Metals by Cold-Vapor Atomic Absorption Spectrometry", "Cold-Vapor Atomic Absorption Spectrometric Method", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.611.

"SM 3112 B (09)" means Method 3112 B, "Metals by Cold-Vapor Atomic Absorption Spectrometry", "Cold-Vapor Atomic Absorption Spectrometric Method", only the version in the 22<sup>nd</sup> and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 3113 B (89)" means Method 3113 B, "Metals by Electrothermal Atomic Absorption Spectrometry", "Electrothermal Atomic Absorption Spectrometric Method", only the version in the 18<sup>th</sup> edition. Referenced in Sections 611.611 and 611.612.

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"SM 3113 B (93)" means Method 3113 B, "Metals by Electrothermal Atomic Absorption Spectrometry", "Electrothermal Atomic Absorption Spectrometric Method", only the version in the 19<sup>th</sup> edition. (The same version appears in the 20<sup>th</sup> edition but USEPA ~~does has not approve approved~~ that edition.) Referenced in Sections 611.611 and 611.612.

"SM 3113 B (99)" means Method 3113 B, "Metals by Electrothermal Atomic Absorption Spectrometry", "Electrothermal Atomic Absorption Spectrometric Method", only the version in the 21<sup>st</sup> edition. Referenced in Sections 611.611 and 611.612.

"SM 3113 B (04)" means Method 3113 B, "Metals by Electrothermal Atomic Absorption Spectrometry", "Electrothermal Atomic Absorption Spectrometric Method", only the version from Standard Methods Online as Method 3113 B-04. Referenced in Sections 611.611 and 611.612.

"SM 3113 B (10)" means Method 3113 B, "Metals by Electrothermal Atomic Absorption Spectrometry", "Electrothermal Atomic Absorption Spectrometric Method", only the version in the 22<sup>nd</sup> and 23<sup>rd</sup> editions. Referenced in Sections 611.611 and 611.612.

"SM 3114 B (89)" means Method 3114 B, "Metals by Hydride Generation/Atomic Absorption Spectrometry", "Manual Hydride Generation/Atomic Absorption Spectrometric Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 3114 B (93)" means Method 3114 B, "Metals by Hydride Generation/Atomic Absorption Spectrometry", "Manual Hydride Generation/Atomic Absorption Spectrometric Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 3114 B (97)" means Method 3114 B, "Metals by Hydride Generation/Atomic Absorption Spectrometry", "Manual Hydride Generation/Atomic Absorption Spectrometric Method", only the version in the 21<sup>st</sup> edition. (The same version appears in the 20<sup>th</sup>

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edition, but USEPA ~~does~~ has not ~~approve~~ approved that edition.)  
Referenced in Section 611.611.

"SM 3114 B (09)" means Method 3114 B, "Metals by Hydride Generation/Atomic Absorption Spectrometry", "Manual Hydride Generation/Atomic Absorption Spectrometric Method", only the version in the 22<sup>nd</sup> and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 3120 B (89)" means Method 3120 B, "Metals by Plasma Emission Spectroscopy", "Inductively Coupled Plasma (ICP) Method", only the version in the 18<sup>th</sup> edition. Referenced in Sections 611.611 and 611.612.

"SM 3120 B (93)" means Method 3120 B, "Metals by Plasma Emission Spectroscopy", "Inductively Coupled Plasma (ICP) Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.611 and 611.612.

"SM 3120 B (99)" means Method 3120 B, "Metals by Plasma Emission Spectroscopy", "Inductively Coupled Plasma (ICP) Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Sections 611.611 and 611.612.

"SM 3125 (97)" means Method 3125, "Metals by Inductively Coupled Plasma/Mass Spectrometry", only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Section 611.720.

"SM 3500-Ca B (97)" means Method 3500-Ca B, "Calcium", "EDTA Titrimetric Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 3500-Ca D (91)" means Method 3500-Ca D, "Calcium", "EDTA Titrimetric Method", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.611.

"SM 3500-Mg B (97)" means Method 3500-Mg B, "Magnesium", "Calculation Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

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"SM 3500-Mg E (90)" means Method 3500-Mg E, "Magnesium", "Calculation Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 3500-Mg E (91)" means Method 3500-Mg E, "Magnesium", "Calculation Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4110 B (90)" means Method 4110 B, "Determination of Anions by Ion Chromatography", "Ion Chromatography with Chemical Suppression of Eluent Conductivity", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4110 B (91)" means Method 4110 B, "Determination of Anions by Ion Chromatography", "Ion Chromatography with Chemical Suppression of Eluent Conductivity", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4110 B (97)" means Method 4110 B, "Determination of Anions by Ion Chromatography", "Ion Chromatography with Chemical Suppression of Eluent Conductivity", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4110 B (00)" means Method 4110 B, "Determination of Anions by Ion Chromatography", "Ion Chromatography with Chemical Suppression of Eluent Conductivity", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-Cl D (89)" means Method 4500-Cl D, "Chlorine (Residual)", "Amperometric Titration Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-Cl D (93)" means Method 4500-Cl D, "Chlorine (Residual)", "Amperometric Titration Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.381 and 611.531.



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"SM 4500-Cl D (00)" means Method 4500-Cl D, "Chlorine (Residual)", "Amperometric Titration Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl E (89)" means Method 4500-Cl E, "Chlorine (Residual)", "Low-Level Amperometric Titration Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-Cl E (93)" means Method 4500-Cl E, "Chlorine (Residual)", "Low-Level Amperometric Titration Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl E (00)" means Method 4500-Cl E, "Chlorine (Residual)", "Low-Level Amperometric Titration Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl F (89)" means Method 4500-Cl F, "Chlorine (Residual)", "DPD Ferrous Titrimetric Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-Cl F (93)" means Method 4500-Cl F, "Chlorine (Residual)", "DPD Ferrous Titrimetric Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl F (00)" means Method 4500-Cl F, "Chlorine (Residual)", "DPD Ferrous Titrimetric Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl G (89)" means Method 4500-Cl G, "Chlorine (Residual)", "DPD Colorimetric Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-Cl G (93)" means Method 4500-Cl G, "Chlorine (Residual)", "DPD Colorimetric Method", only the version in the

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19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl G (00)" means Method 4500-Cl G, "Chlorine (Residual)", "DPD Colorimetric Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl H (89)" means Method 4500-Cl H, "Chlorine (Residual)", "Syringaldazine (FACTS) Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-Cl H (93)" means Method 4500-Cl H, "Chlorine (Residual)", "Syringaldazine (FACTS) Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl H (00)" means Method 4500-Cl H, "Chlorine (Residual)", "Syringaldazine (FACTS) Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl I (89)" means Method 4500-Cl I, "Chlorine (Residual)", "Iodometric Electrode Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-Cl I (93)" means Method 4500-Cl I, "Chlorine (Residual)", "Iodometric Electrode Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-Cl I (00)" means Method 4500-Cl I, "Chlorine (Residual)", "Iodometric Electrode Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-ClO<sub>2</sub> C (88)" means Method 4500-ClO<sub>2</sub> C, "Chlorine Dioxide", "Amperometric Method I", only the version in the 18<sup>th</sup> edition. Referenced in Sections 611.381 and 611.531.

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"SM 4500-ClO<sub>2</sub> C (93)" means Method 4500-ClO<sub>2</sub> C, "Chlorine Dioxide", "Amperometric Method I", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.531.

"SM 4500-ClO<sub>2</sub> C (00)" means Method 4500-ClO<sub>2</sub> C, "Chlorine Dioxide", "Amperometric Method I", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.531.

"SM 4500-ClO<sub>2</sub> D (88)" means Method 4500-ClO<sub>2</sub> D, "Chlorine Dioxide", "DPD Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-ClO<sub>2</sub> D (93)" means Method 4500-ClO<sub>2</sub> D, "Chlorine Dioxide", "DPD Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-ClO<sub>2</sub> D (00)" means Method 4500-ClO<sub>2</sub> D, "Chlorine Dioxide", "DPD Method", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.381.

"SM 4500-ClO<sub>2</sub> E (88)" means Method 4500-ClO<sub>2</sub> E, "Chlorine Dioxide", "Amperometric Method II (Proposed)", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-ClO<sub>2</sub> E (93)" means Method 4500-ClO<sub>2</sub> E, "Chlorine Dioxide", "Amperometric Method II", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-ClO<sub>2</sub> E (00)" means Method 4500-ClO<sub>2</sub> E, "Chlorine Dioxide", "Amperometric Method II", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Sections 611.381 and 611.531.

"SM 4500-CN<sup>-</sup> C (90)" means Method 4500-CN<sup>-</sup> C, "Cyanide", "Total Cyanide after Distillation", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.611.

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"SM 4500-CN<sup>-</sup> C (97)" means Method 4500-CN<sup>-</sup> C, "Cyanide", "Total Cyanide after Distillation", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> C (99)" means Method 4500-CN<sup>-</sup> C, "Cyanide", "Total Cyanide after Distillation", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> C (16)" means Method 4500-CN<sup>-</sup> C, "Cyanide", "Total Cyanide after Distillation", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> E (90)" means Method 4500-CN<sup>-</sup> E, "Cyanide", "Colorimetric Method", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> E (97)" means Method 4500-CN<sup>-</sup> E, "Cyanide", "Colorimetric Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> E (99)" means Method 4500-CN<sup>-</sup> E, "Cyanide", "Colorimetric Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> E (16)" means Method 4500-CN<sup>-</sup> E, "Cyanide", "Colorimetric Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> F (90)" means Method 4500-CN<sup>-</sup> F, "Cyanide", "Cyanide-Selective Electrode Method", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> F (97)" means Method 4500-CN<sup>-</sup> F, "Cyanide", "Cyanide-Selective Electrode Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> F (99)" means Method 4500-CN<sup>-</sup> F, "Cyanide", "Cyanide-Selective Electrode Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

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"SM 4500-CN<sup>-</sup> F (16)" means Method 4500-CN<sup>-</sup> F, "Cyanide", "Cyanide-Ion Selective Electrode Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> G (90)" means Method 4500-CN<sup>-</sup> G, "Cyanide", "Cyanides Amenable to Chlorination after Distillation", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> G (97)" means Method 4500-CN<sup>-</sup> G, "Cyanide", "Cyanides Amenable to Chlorination after Distillation", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> G (99)" means Method 4500-CN<sup>-</sup> G, "Cyanide", "Cyanides Amenable to Chlorination after Distillation", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

"SM 4500-CN<sup>-</sup> G (16)" means Method 4500-CN<sup>-</sup> G, "Cyanide", "Cyanides Amenable to Chlorination after Distillation", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> B (88)" means Method 4500-F<sup>-</sup> B, "Fluoride", "Preliminary Distillation Step", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> B (94)" means Method 4500-F<sup>-</sup> B, "Fluoride", "Preliminary Distillation Step", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> B (97)" means Method 4500-F<sup>-</sup> B, "Fluoride", "Preliminary Distillation Step", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> C (88)" means Method 4500-F<sup>-</sup> C, "Fluoride", "Ion-Selective Electrode Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

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"SM 4500-F<sup>-</sup> C (94)" means Method 4500-F<sup>-</sup> C, "Fluoride", "Ion-Selective Electrode Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> C (97)" means Method 4500-F<sup>-</sup> C, "Fluoride", "Ion-Selective Electrode Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> D (88)" means Method 4500-F<sup>-</sup> D, "Fluoride", "SPADNS Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> D (94)" means Method 4500-F<sup>-</sup> D, "Fluoride", "SPADNS Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> D (97)" means Method 4500-F<sup>-</sup> D, "Fluoride", "SPADNS Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> E (88)" means Method 4500-F<sup>-</sup> E, "Fluoride", "Complexone Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> E (94)" means Method 4500-F<sup>-</sup> E, "Fluoride", "Complexone Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-F<sup>-</sup> E (97)" means Method 4500-F<sup>-</sup> E, "Fluoride", "Complexone Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-H<sup>+</sup> B (90)" means Method 4500-H<sup>+</sup> B, "pH Value", "Electrometric Method", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.611.

"SM 4500-H<sup>+</sup> B (96)" means Method 4500-H<sup>+</sup> B, "pH Value", "Electrometric Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

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"SM 4500-H<sup>+</sup> B (00)" means Method 4500-H<sup>+</sup> B, "pH Value", "Electrometric Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> D (88)" means Method 4500-NO<sub>3</sub><sup>-</sup> D, "Nitrogen (Nitrate)", "Nitrate Electrode Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> D (93)" means Method 4500-NO<sub>3</sub><sup>-</sup> D, "Nitrogen (Nitrate)", "Nitrate Electrode Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> D (97)" means Method 4500-NO<sub>3</sub><sup>-</sup> D, "Nitrogen (Nitrate)", "Nitrate Electrode Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> D (00)" means Method 4500-NO<sub>3</sub><sup>-</sup> D, "Nitrogen (Nitrate)", "Nitrate Electrode Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> D (16)" means Method 4500-NO<sub>3</sub><sup>-</sup> D, "Nitrogen (Nitrate)", "Nitrate Electrode Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> E (88)" means Method 4500-NO<sub>3</sub><sup>-</sup> E, "Nitrogen (Nitrate)", "Cadmium Reduction Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> E (93)" means Method 4500-NO<sub>3</sub><sup>-</sup> E, "Nitrogen (Nitrate)", "Cadmium Reduction Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> E (97)" means Method 4500-NO<sub>3</sub><sup>-</sup> E, "Nitrogen (Nitrate)", "Cadmium Reduction Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

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"SM 4500-NO<sub>3</sub><sup>-</sup> E (00)" means Method 4500-NO<sub>3</sub><sup>-</sup> E, "Nitrogen (Nitrate)", "Cadmium Reduction Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> E (16)" means Method 4500-NO<sub>3</sub><sup>-</sup> E, "Nitrogen (Nitrate)", "Cadmium Reduction Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> F (88)" means Method 4500-NO<sub>3</sub><sup>-</sup> F, "Nitrogen (Nitrate)", "Automated Cadmium Reduction Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> F (93)" means Method 4500-NO<sub>3</sub><sup>-</sup> F, "Nitrogen (Nitrate)", "Automated Cadmium Reduction Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> F (97)" means Method 4500-NO<sub>3</sub><sup>-</sup> F, "Nitrogen (Nitrate)", "Automated Cadmium Reduction Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> F (00)" means Method 4500-NO<sub>3</sub><sup>-</sup> F, "Nitrogen (Nitrate)", "Automated Cadmium Reduction Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

"SM 4500-NO<sub>3</sub><sup>-</sup> F (16)" means Method 4500-NO<sub>3</sub><sup>-</sup> F, "Nitrogen (Nitrate)", "Automated Cadmium Reduction Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>2</sub><sup>-</sup> B (88)" means Method 4500-NO<sub>2</sub><sup>-</sup> B, "Nitrogen (Nitrite)", "Colorimetric Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-NO<sub>2</sub><sup>-</sup> B (93)" means Method 4500-NO<sub>2</sub><sup>-</sup> B, "Nitrogen (Nitrite)", "Colorimetric Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.611.



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"SM 4500-NO<sub>2</sub><sup>-</sup> B (00)" means Method 4500-NO<sub>2</sub><sup>-</sup> B, "Nitrogen (Nitrite)", "Colorimetric Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-O<sub>3</sub> B (88)" means Method 4500-O<sub>3</sub> B, "Ozone (Residual) (Proposed)", "Indigo Colorimetric Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-O<sub>3</sub> B (93)" means Method 4500-O<sub>3</sub> B, "Ozone (Residual)", "Indigo Colorimetric Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.531.

"SM 4500-O<sub>3</sub> B (97)" means Method 4500-O<sub>3</sub> B, "Ozone (Residual)", "Indigo Colorimetric Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.531.

"SM 4500-P E (88)" means Method 4500-P E, "Phosphorus", "Ascorbic Acid Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-P E (93)" means Method 4500-P E, "Phosphorus", "Ascorbic Acid Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-P E (97)" means Method 4500-P E, "Phosphorus", "Ascorbic Acid Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-P E (99)" means Method 4500-P E, "Phosphorus", "Ascorbic Acid Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

"SM 4500-P E (05)" means Method 4500-P E, "Phosphorus", "Ascorbic Acid Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-P F (88)" means Method 4500-P F, "Phosphorus", "Automated Ascorbic Acid Reduction Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

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"SM 4500-P F (93)" means Method 4500-P F, "Phosphorus", "Automated Ascorbic Acid Reduction Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-P F (97)" means Method 4500-P F, "Phosphorus", "Automated Ascorbic Acid Reduction Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-P F (99)" means Method 4500-P F, "Phosphorus", "Automated Ascorbic Acid Reduction Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.611.

"SM 4500-P F (05)" means Method 4500-P F, "Phosphorus", "Automated Ascorbic Acid Reduction Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.611.

"SM 4500-Si D (88)" means Method 4500-Si D, "Silica", "Molybdosilicate Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-Si D (93)" means Method 4500-Si D, "Silica", "Molybdosilicate Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-Si E (88)" means Method 4500-Si E, "Silica", "Molybdosilicate Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-Si E (93)" means Method 4500-Si E, "Silica", "Molybdosilicate Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-Si F (88)" means Method 4500-Si F, "Silica", "Molybdosilicate Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.611.

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"SM 4500-Si F (93)" means Method 4500-Si F, "Silica", "Molybdosilicate Method", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.611.

"SM 4500-SiO<sub>2</sub> C (97)" means Method 4500-SiO<sub>2</sub> C, "Silica", "Molybdosilicate Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-SiO<sub>2</sub> D (97)" means Method 4500-SiO<sub>2</sub> D, "Silica", "Heteropoly Blue Method", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 4500-SiO<sub>2</sub> E (97)" means Method 4500-SiO<sub>2</sub> E, "Silica", "Automated Method for Molybdate-Reactive Silica", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.611.

"SM 5310 B (92)" means Method 5310 B, "Total Organic Carbon (TOC)", "Combustion-Infrared Method", only the version in the supplement to the 19<sup>th</sup> edition. Referenced in Section 611.381.

"SM 5310 B (96)" means Method 5310 B, "Total Organic Carbon (TOC)", "High-Temperature Combustion Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.381.

"SM 5310 B (00)" means Method 5310 B, "Total Organic Carbon (TOC)", "High-Temperature Combustion Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.381.

"SM 5310 B (14)" means Method 5310 B, "Total Organic Carbon (TOC)", "High-Temperature Combustion Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.381.

"SM 5310 C (92)" means Method 5310 C, "Total Organic Carbon (TOC)", "Persulfate-Ultraviolet Oxidation Method", only the version in the supplement to the 19<sup>th</sup> edition. Referenced in Section 611.381.

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"SM 5310 C (96)" means Method 5310 C, "Total Organic Carbon (TOC)", "Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.381.

"SM 5310 C (00)" means Method 5310 C, "Total Organic Carbon (TOC)", "Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.381.

"SM 5310 C (14)" means Method 5310 C, "Total Organic Carbon (TOC)", "Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.381.

"SM 5310 D (92)" means Method 5310 D, "Total Organic Carbon (TOC)", "Wet-Oxidation Method", only the version in the supplement to the 19<sup>th</sup> edition. Referenced in Section 611.381.

"SM 5310 D (96)" means Method 5310 D, "Total Organic Carbon (TOC)", "Wet-Oxidation Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.381.

"SM 5310 D (00)" means Method 5310 D, "Total Organic Carbon (TOC)", "Wet-Oxidation Method", only the version in the 21<sup>st</sup> and 22<sup>nd</sup> editions. Referenced in Section 611.381.

"SM 5910 B (94)" means Method 5910 B, "UV-Absorbing Organic Constituents", "Ultraviolet Absorption Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.381.

"SM 5910 B (00)" means Method 5910 B, "UV-Absorbing Organic Constituents", "Ultraviolet Absorption Method", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.381.

"SM 5910 B (11)" means Method 5910 B, "UV-Absorbing Organic Constituents", "Ultraviolet Absorption Method", only the version in the 22<sup>nd</sup> edition. Referenced in Section 611.381.

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"SM 5910 B (13)" means Method 5910 B, "UV-Absorbing Organic Constituents", "Ultraviolet Absorption Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.381.

"SM 6251 B (94)" means Method 6251 B, "Disinfection By-Products: Haloacetic Acids and Trichlorophenol", "Micro Liquid-Liquid Extraction Gas Chromatographic Method", only the version in the 19<sup>th</sup>, 20<sup>th</sup>, and 21<sup>st</sup> editions. Referenced in Section 611.381.

"SM 6251 B (07)" means Method 6251 B, "Disinfection By-Products: Haloacetic Acids and Trichlorophenol", "Micro Liquid-Liquid Extraction Gas Chromatographic Method", only the version in the 22<sup>nd</sup> and 23<sup>rd</sup> editions. Referenced in Section 611.381.

"SM 6610 (92)" means Method 6610, "Carbamate Pesticides (Proposed)", only the version in the supplement to the 18<sup>th</sup> edition and the 19<sup>th</sup> edition. Referenced in Section 611.645.

"SM 6610 (96)" means Method 6610, "Carbamate Pesticides", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.645.

"SM 6610 B (99)" means Method 6610, "Carbamate Pesticides", "High-Performance Liquid Chromatographic Method", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.645.

"SM 6610 B (04)" means Method 6610, "Carbamate Pesticides", "High-Performance Liquid Chromatographic Method", only the version in 22<sup>nd</sup> and 23<sup>rd</sup> editions. Referenced in Section 611.645.

"SM 6640 B (01)" means Method 6640 B, "Acidic Herbicide Compounds", "Micro Liquid-Liquid Extraction Gas Chromatographic Method", only the version in 21<sup>st</sup> edition. Referenced in Section 611.645.

"SM 6640 B (06)" means Method 6640 B, "Acidic Herbicide Compounds", "Micro Liquid-Liquid Extraction Gas

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Chromatographic Method", only the version in 22<sup>nd</sup> and 23<sup>rd</sup> editions. Referenced in Section 611.645.

"SM 6651 B (91)" means Method 6651 B, "Glyphosate Herbicide (Proposed)", "Liquid Chromatographic Post-Column Fluorescence Method", only the version in 18<sup>th</sup> edition, or "Glyphosate Herbicide", "Liquid Chromatographic Post-Column Fluorescence Method", in 19<sup>th</sup> edition. Referenced in Section 611.645.

"SM 6651 B (96)" means Method 6651 B, "Glyphosate Herbicide", "Liquid Chromatographic Post-Column Fluorescence Method", only the version in 20<sup>th</sup> edition. Referenced in Section 611.645.

"SM 6651 B (00)" means Method 6651 B, "Glyphosate Herbicide", "Liquid Chromatographic Post-Column Fluorescence Method", only the version in 21<sup>st</sup> edition. Referenced in Section 611.645.

"SM 6651 B (05)" means Method 6651 B, "Glyphosate Herbicide", "Liquid Chromatographic Post-Column Fluorescence Method", only the version in 22<sup>nd</sup> and 23<sup>rd</sup> editions. Referenced in Section 611.645.

"SM 7110 B (85)" means Method 7110 B, "Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved)", "Counting Method", only the version in 17<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7110 B (91)" means Method 7110 B, "Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved)", "Evaporation Method for Gross Alpha-Beta", only the version in 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7110 B (96)" means Method 7110 B, "Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved)", "Evaporation Method for Gross Alpha-Beta", only the version in 20<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7110 B (00)" means Method 7110 B, "Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved)", "Evaporation

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Method for Gross Alpha-Beta", only the version in 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7110 C (91)" means Method 7110 C, "Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved)", "Coprecipitation Method for Gross Alpha Radioactivity in Drinking Water (Proposed)", only the version in 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7110 C (96)" means Method 7110 C, "Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved)", "Coprecipitation Method for Gross Alpha Radioactivity in Drinking Water", only the version in 20<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7110 C (00)" means Method 7110 C, "Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved)", "Coprecipitation Method for Gross Alpha Radioactivity in Drinking Water", only the version in 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7110 D (17)" means Method 7110 D, "Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved)", "Liquid Scintillation Spectroscopic Method for Gross Alpha-Beta Radioactivity in Drinking Water", only the version from Standard Methods Online as Method 7110 D-17. Referenced in Section 611.720.

"SM 7120 (94)" means Method 7120, "Gamma-Emitting Radionuclides", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7120 (97)" means Method 7120, "Gamma-Emitting Radionuclides", only the version in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-Cs B (88)" means Method 7500-Cs B, "Radioactive Cesium", "Precipitation Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

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"SM 7500-Cs B (93)" means Method 7500-Cs B, "Radioactive Cesium", "Precipitation Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-Cs B (00)" means Method 7500-Cs B, "Radioactive Cesium", "Precipitation Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-I B (88)" means Method 7500-I B, "Radioactive Iodine", "Precipitation Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-I B (93)" means Method 7500-I B, "Radioactive Iodine", "Precipitation Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-I B (00)" means Method 7500-I B, "Radioactive Iodine", "Precipitation Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-I C (88)" means Method 7500-I C, "Radioactive Iodine", "Ion-Exchange Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-I C (93)" means Method 7500-I C, "Radioactive Iodine", "Ion-Exchange Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-I C (00)" means Method 7500-I C, "Radioactive Iodine", "Ion-Exchange Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-I D (88)" means Method 7500-I D, "Radioactive Iodine", "Distillation Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-I D (93)" means Method 7500-I D, "Radioactive Iodine", "Distillation Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.



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"SM 7500-I D (00)" means Method 7500-I D, "Radioactive Iodine", "Distillation Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra B (88)" means Method 7500-Ra B, "Radium", "Precipitation Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra B (93)" means Method 7500-Ra B, "Radium", "Precipitation Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra B (01)" means Method 7500-Ra B, "Radium", "Precipitation Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra C (88)" means Method 7500-Ra C, "Radium", "Emanation Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra C (93)" means Method 7500-Ra C, "Radium", "Emanation Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra C (01)" means Method 7500-Ra C, "Radium", "Emanation Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra D (88)" means Method 7500-Ra D, "Radium", "Sequential Precipitation Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra D (93)" means Method 7500-Ra D, "Radium", "Sequential Precipitation Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.

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"SM 7500-Ra D (01)" means Method 7500-Ra D, "Radium", "Sequential Precipitation Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-Ra E (01)" means Method 7500-Ra E, "Radium", "Gamma Spectrometry Method", only the version in the 22<sup>nd</sup> edition. Referenced in Section 611.720.

"SM 7500-Ra E (07)" means Method 7500-Ra E, "Radium", "Gamma Spectrometry Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.720.

"SM 7500-Sr B (88)" means Method 7500-Sr B, "Total Radioactive Strontium and Strontium 90", "Precipitation Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-Sr B (93)" means Method 7500-Sr B, "Total Radioactive Strontium and Strontium 90", "Precipitation Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-Sr B (01)" means Method 7500-Sr B, "Total Radioactive Strontium and Strontium 90", "Precipitation Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-<sup>3</sup>H B (88)" means Method 7500-<sup>3</sup>H B, "Tritium", "Liquid Scintillation Spectrometric Method", only the version in the 17<sup>th</sup> and 18<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-<sup>3</sup>H B (93)" means Method 7500-<sup>3</sup>H B, "Tritium", "Liquid Scintillation Spectrometric Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-<sup>3</sup>H B (00)" means Method 7500-<sup>3</sup>H B, "Tritium", "Liquid Scintillation Spectrometric Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

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"SM 7500-U B (88)" means Method 7500-U B, "Uranium", "Radiochemical Method (Proposed)", only the version in the 17<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7500-U B (91)" means only Method 7500-U B, "Uranium", "Radiochemical Method (Proposed)", the version in the 18<sup>th</sup> edition, and "Uranium", "Radiochemical Method", the version in the 19<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7500-U B (96)" means Method 7500-U B, "Uranium", "Radiochemical Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7500-U B (00)" means Method 7500-U B, "Uranium", "Radiochemical Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 7500-U C (88)" means Method 7500-U C, "Uranium", "Fluorometric Method (Proposed)", only the version in the 17<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7500-U C (91)" means Method 7500-U C, "Uranium", "Isotopic Method (Proposed)", only the version in the 18<sup>th</sup> and 19<sup>th</sup> editions. Referenced in Section 611.720.

"SM 7500-U C (96)" means Method 7500-U C, "Uranium", "Isotopic Method", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.720.

"SM 7500-U C (00)" means Method 7500-U C, "Uranium", "Isotopic Method", only the version in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions. Referenced in Section 611.720.

"SM 9060 A (97)" means Method 9060 A, "Samples", "Collection", only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Section 611.1052.

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"SM 9215 B (88)" means Method 9215 B, "Heterotrophic Plate Count", "Pour Plate Method", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9215 B (94)" means Method 9215 B, "Heterotrophic Plate Count", "Pour Plate Method", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.531.

"SM 9215 B (00)" means Method 9215 B, "Heterotrophic Plate Count", "Pour Plate Method", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.531.

"SM 9215 B (04)" means Method 9215 B, "Heterotrophic Plate Count", "Pour Plate Method", only the version in the 22<sup>nd</sup> edition. Referenced in Section 611.531.

"SM 9215 B (16)" means Method 9215 B, "Heterotrophic Plate Count", "Pour Plate Method", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.531.

"SM 9221 A (93)" means Method 9221 A, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Introduction", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9221 A (94)" means Method 9221 A, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Introduction", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.531.

"SM 9221 A (99)" means Method 9221 A, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Introduction", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.531.

"SM 9221 A (06)" means Method 9221 A, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Introduction", only the version in the 22<sup>nd</sup> edition. Referenced in Section 611.531.

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"SM 9221 A (14)" means Method 9221 A, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Introduction", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.531.

"SM 9221 B (93)" means Method 9221 B, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Standard Total Coliform Fermentation Technique", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9221 B (94)" means Method 9221 B, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Standard Total Coliform Fermentation Technique", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Sections 611.531 and 611.1052.

"SM 9221 B (99)" means Method 9221 B, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Standard Total Coliform Fermentation Technique", only the version in the 21<sup>st</sup> edition. Referenced in Sections 611.531 and 611.1052.

"SM 9221 B (06)" means Method 9221 B, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Standard Total Coliform Fermentation Technique", only the version in the 22<sup>nd</sup> edition. Referenced in Sections 611.531 and 611.1052.

"SM 9221 B (14)" means Method 9221 B, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Standard Total Coliform Fermentation Technique", only the version in the 23<sup>rd</sup> edition. Referenced in Sections 611.531 and 611.1052.

"SM 9221 C (93)" means Method 9221 C, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Estimation of Bacterial Density", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

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"SM 9221 C (94)" means Method 9221 C, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Estimation of Bacterial Density", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.531.

"SM 9221 C (99)" means Method 9221 C, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Estimation of Bacterial Density", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.531.

"SM 9221 C (06)" means Method 9221 C, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Estimation of Bacterial Density", only the version in the 22<sup>nd</sup> edition. Referenced in Section 611.531.

"SM 9221 C (14)" means Method 9221 C, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Estimation of Bacterial Density", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.531.

"SM 9221 D (94)" means Method 9221 D, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Presence-Absence (P-A) Coliform", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.1052.

"SM 9221 D (99)" means Method 9221 D, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Presence-Absence (P-A) Coliform", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.1052.

"SM 9221 D (14)" means Method 9221 D, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Presence-Absence (P-A) Coliform", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.1052.

"SM 9221 E (93)" means Method 9221 E, "Multiple-Tube Fermentation Technique for Members of the Coliform Group",

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"Fecal Coliform Procedure", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9221 E (94)" means Method 9221 E, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Fecal Coliform Procedure", only the version in the 19<sup>th</sup> and 20<sup>th</sup> editions. Referenced in Section 611.531.

"SM 9221 E (99)" means Method 9221 E, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Fecal Coliform Procedure", only the version in the 21<sup>st</sup> edition. Referenced in Section 611.531.

"SM 9221 E (06)" means Method 9221 E, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Fecal Coliform Procedure", only the version in the 22<sup>nd</sup> edition. Referenced in Section 611.531.

"SM 9221 E (14)" means Method 9221 E, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Thermotolerant (Fecal) Coliform Procedure", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.531.

"SM 9221 F (94)" means Method 9221 F, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Escherichia Coli Procedure (Proposed)", only the version in the 20<sup>th</sup> edition. Referenced in Sections 611.802 and 611.1052.

"SM 9221 F (06)" means Method 9221 F, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Escherichia Coli Procedure Using Fluorogenic Substrate", only the version in the 22<sup>nd</sup> edition. Referenced in Sections 611.802 and 611.1052.

"SM 9221 F (14)" means Method 9221 F, "Multiple-Tube Fermentation Technique for Members of the Coliform Group", "Escherichia Coli Procedure Using Fluorogenic Substrate", only the version in the 23<sup>rd</sup> edition. Referenced in Sections 611.802 and 611.1052.

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"SM 9222 A (91)" means Method 9222 A, "Membrane Filter Technique for Members of the Coliform Group", "Introduction", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9222 A (94)" means Method 9222 A, "Membrane Filter Technique for Members of the Coliform Group", "Introduction", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9222 A (97)" means Method 9222 A, "Membrane Filter Technique for Members of the Coliform Group", "Introduction", only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Section 611.531.

"SM 9222 A (06)" means Method 9222 A, "Membrane Filter Technique for Members of the Coliform Group", "Introduction", only the version in the 22<sup>nd</sup> edition. Referenced in Section 611.531.

"SM 9222 A (15)" means Method 9222 A, "Membrane Filter Technique for Members of the Coliform Group", "Introduction", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.531.

"SM 9222 B (91)" means Method 9222 B, "Membrane Filter Technique for Members of the Coliform Group", "Standard Total Coliform Membrane Filter Procedure", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9222 B (94)" means Method 9222 B, "Membrane Filter Technique for Members of the Coliform Group", "Standard Total Coliform Membrane Filter Procedure", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9222 B (97)" means Method 9222 B, "Membrane Filter Technique for Members of the Coliform Group", "Standard Total



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Coliform Membrane Filter Procedure", only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Sections 611.531 and 611.1052.

"SM 9222 B (15)" means Method 9222 B, "Membrane Filter Technique for Members of the Coliform Group", "Standard Total Coliform Membrane Filter Procedure using Endo Media", only the version in the 23<sup>rd</sup> edition. Referenced in Sections 611.531 and 611.1052.

"SM 9222 C (91)" means Method 9222 C, "Membrane Filter Technique for Members of the Coliform Group", "Delayed-Incubation Total Coliform Procedure", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9222 C (94)" means Method 9222 C, "Membrane Filter Technique for Members of the Coliform Group", "Delayed-Incubation Total Coliform Procedure", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9222 C (97)" means Method 9222 C, "Membrane Filter Technique for Members of the Coliform Group", "Delayed-Incubation Total Coliform Procedure", only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Sections 611.531 and 611.1052.

"SM 9222 C (15)" means Method 9222 C, "Membrane Filter Technique for Members of the Coliform Group", "Delayed-Incubation Total Coliform Procedure", only the version in the 23<sup>rd</sup> edition. Referenced in Sections 611.531 and 611.1052.

"SM 9222 D (91)" means Method 9222 D, "Membrane Filter Technique for Members of the Coliform Group", "Fecal Coliform Membrane Filter Procedure", only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9222 D (94)" means Method 9222 D, "Membrane Filter Technique for Members of the Coliform Group", "Fecal Coliform Membrane Filter Procedure", only the version in the 19<sup>th</sup> edition. Referenced in Section 611.531.

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"SM 9222 D (97)" means Method 9222 D, "Membrane Filter Technique for Members of the Coliform Group", "Fecal Coliform Membrane Filter Procedure", only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Sections 611.531 and 611.1004.

"SM 9222 D (06)" means Method 9222 D, "Membrane Filter Technique for Members of the Coliform Group", "Thermotolerant (Fecal) Coliform Membrane Filter Procedure", only the version in the 22<sup>nd</sup> edition. Referenced in Section 611.531.

"SM 9222 D (15)" means Method 9222 D, "Membrane Filter Technique for Members of the Coliform Group", "Thermotolerant (Fecal) Coliform Membrane Filter Procedure", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.531.

"SM 9222 G (97)" means Method 9222 G, "Membrane Filter Technique for Members of the Coliform Group", "MF Partition Procedure", only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Sections 611.802, 611.1004, and 611.1052.

"SM 9222 H (15)" means Method 9222 H, "Membrane Filter Technique for Members of the Coliform Group", "Partitioning E. coli from MF Total Coliform and E. coli using EC-MUG Broth", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.1052.

"SM 9222 I (15)" means Method 9222 I, "Membrane Filter Technique for Members of the Coliform Group", "Partitioning E. coli from MF Total Coliform and E. coli using NA-MUG Agar", only the version in the 23<sup>rd</sup> edition. Referenced in Sections 611.802 and 611.1052.

"SM 9222 J (15)" means Method 9222 J, "Membrane Filter Technique for Members of the Coliform Group", "Simultaneous Detection of Total Coliform and E. coli by Dual-Chromogen Membrane Filter Procedure", only the version in the 23<sup>rd</sup> edition. Referenced in Sections 611.802 and 611.1052.

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"SM 9223 (92)" means Method 9223, "Chromogenic Substrate Coliform Test (Proposed)" (also referred to as the variations "Colilert<sup>®</sup>" and "Colisure<sup>™</sup>" depending on the medium used), only the version in the 18<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9223 (94)" means Method 9223, "Chromogenic Substrate Coliform" (also referred to as the variations "Colilert<sup>®</sup>" and "Colisure<sup>™</sup>" depending on the medium used), only the version in the 19<sup>th</sup> edition. Referenced in Section 611.531.

"SM 9223 (97)" means Method 9223, "Enzyme Substrate Coliform" (also referred to as the variations "Colilert<sup>®</sup>" and "Colisure<sup>™</sup>" depending on the medium used), only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Sections 611.531.

"SM 9223 B (92)" means Method 9223 B, "Chromogenic Substrate Coliform Test (Proposed)", "Chromogenic Substrate" (also referred to as the variations "Colilert<sup>®</sup>", "Colisure<sup>™</sup>", and "Colilert-18<sup>®</sup>" depending on the medium used), only the version in the 18<sup>th</sup> edition. Referenced in Section 611.1004.

"SM 9223 B (94)" means Method 9223 B, "Chromogenic Substrate Coliform", "Chromogenic Substrate" (also referred to as the variations "Colilert<sup>®</sup>" and "Colisure<sup>™</sup>" depending on the medium used), only the version in the 19<sup>th</sup> edition. Referenced in Section 611.1004.

"SM 9223 B (97)" means Method 9223 B, "Enzyme Substrate Coliform", "Chromogenic Substrate" (also referred to as the variations "Colilert<sup>®</sup>" and "Colisure<sup>™</sup>" depending on the medium used), only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Sections 611.802 and 611.1004.

"SM 9223 B (04)" means Method 9223 B, "Enzyme Substrate Coliform", "Enzyme Substrate" (also referred to as the variations "Colilert<sup>®</sup>" and "Colisure<sup>™</sup>" depending on the medium used), only the version in the 22<sup>nd</sup> edition. Referenced in Sections 611.531, 611.802, and 611.1004.

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"SM 9223 B (16)" means Method 9223 B, "Enzyme Substrate Coliform", "Enzyme Substrate" (also referred to as the variations "Colilert<sup>®</sup>" and "Colisure<sup>™</sup>" depending on the medium used), only the version in the 23<sup>rd</sup> edition. Referenced in Sections 611.531, 611.802, and 611.1052.

"SM 9230 B (93)" means Method 9230 B, "Fecal Streptococcus and Enterococcus Groups", "Multiple-Tube Techniques", only the version in the 20<sup>th</sup> and 21<sup>st</sup> editions. Referenced in Section 611.802.

"SM 9230 B (04)" means Method 9230 B, "Fecal Streptococcus and Enterococcus Groups", "Multiple-Tube Techniques", only the version from Standard Methods Online as Method 9230 B-04. Referenced in Section 611.802.

"SM 9230 C (93)" means Method 9230 C, "Fecal Streptococcus and Enterococcus Groups", "Membrane Filter Techniques", only the version in the 20<sup>th</sup> edition. Referenced in Section 611.802.

"SM 9230 C (13)" means Method 9230 C, "Fecal Enterococcus/Streptococcus Groups", "Membrane Filter Techniques", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.802.

"SM 9230 D (13)" means Method 9230 D, "Fecal Enterococcus/Streptococcus Groups", "Fluorogenic Substrate Enterococcus", only the version in the 23<sup>rd</sup> edition. Referenced in Section 611.802.

BOARD NOTE: The publication dates of the several ~~editions of~~ "Standard Methods for the Examination of Water and Wastewater" ~~editions containing that contain~~ approved methods are as follows:

13<sup>th</sup> edition, 1971  
17<sup>th</sup> edition, 1989  
18<sup>th</sup> edition, 1992  
Supplement to 18<sup>th</sup> edition, 1994  
19<sup>th</sup> edition, 1995

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Supplement to 19<sup>th</sup> edition, 1996  
20<sup>th</sup> edition, 1998  
21<sup>st</sup> edition, 2005  
22<sup>nd</sup> edition, 2012  
23<sup>rd</sup> edition, 2017

"Syngenta AG-625 (01)" means "Method AG-625: Atrazine in Drinking Water by Immunoassay" (February 2001), Syngenta Crop Protection, Inc. Available from publisher, 410 Swing Road, Post Office Box 18300, Greensboro, NC 27419 (336-632-6000). Referenced in Section 611.645.

"Systea Easy (1-Reagent) (09)" means "Nitrate by Discrete Analysis: Systea Easy (1-Reagent) Nitrate Method (Colorimetric, Automated, 1 Reagent)" (February 4, 2009). Available from Systea Scientific LLC, 900 Jorie Blvd., Suite 35, Oak Brook, IL 60523 (630-645-0600); NEMI; and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)"). Referenced in Section 611.611.

Technicon Methods. Available from Bran + Luebbe, 1025 Busch Parkway, Buffalo Grove, IL 60089.

"Technicon #129-71W (72)" means "Fluoride in Water and Wastewater" (December 1972), Industrial Method #129-71W. Referenced in Section 611.611. See 40 CFR 141.23(k)(1), footnote 11.

"Technicon #380-75WE (76)" means "Fluoride in Water and Wastewater" (February 1976), #380-75WE. See 40 CFR 141.23(k)(1), footnote 11, referenced in Section 611.611.

Tecta Methods. Available from Pathogen Detection Systems, Inc., 382 King Street, Kingston, Ontario, Canada K7K 2Y2 (844-215-7122 or www.tecta-pds.ca) and USEPA, OGWDW (under "Ground Water Rule (PDF)" and "Revised Total Coliforms Rules (PDF)").

"Tecta (14)" means "TECTA™ EC/TC medium and the TECTA™ Instrument: a Presence/Absence Method for Simultaneous Detection of Total Coliforms and Escherichia coli (E.coli) in

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"Drinking Water", Version 1.0 (May 22, 2014). Referenced in Sections 611.802 and 611.1052.

"Tecta (17)" means "TECTA™ EC/TC medium and the TECTA™ Instrument: a Presence/Absence Method for Simultaneous Detection of Total Coliforms and Escherichia coli (E.coli) in Drinking Water", Version 2.0 (March 20, 2017). Referenced in Sections 611.802 and 611.1052.

"Thermo-Fisher 557.1 (17)" means "Thermofisher Method 557.1: Determination of Haloacetic Acids in Drinking Water using Two-Dimensional Ion Chromatography with Suppressed Conductivity Detection", Version 1.0 (January 2017). Available from Thermo-Fisher Scientific, 490 Lakeside Dr, Sunnyvale, CA 94085 (800-556-2323; www.thermofisher.com) and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Section 611.611.

"Thermo-Fisher Discrete Analyzer (16)" means "Application Note: Drinking Water Orthophosphate Method for Thermo Scientific Gallery Discrete Analyzer", Revision 5 (February 18, 2016). Available from Thermo-Fisher Scientific, Ratastie 2, 01620 Vantaa, Finland and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)"). Referenced in Section 611.611.

## USEPA Methods

## Numbered Methods

"USEPA H-02 (84)" means Method H-02, "Radiochemical Determination of Tritium in Water – Dioxane Method", in USEPA Radiochemistry Procedures (84). Referenced in Section 611.720.

BOARD NOTE: Also available from USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA Ra-03 (84)" means Method Ra-03, "Radiochemical Determination of Radium-226 in Water Samples", in USEPA Radiochemistry Procedures (84). Referenced in Section 611.720.

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BOARD NOTE: Also available from USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA Ra-04 (84)" means Method Ra-04, "Radiochemical Determination of Radium-226 – De-emanation Procedure", in USEPA Radiochemistry Procedures (84). Referenced in Section 611.720.

BOARD NOTE: Also available from USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA Ra-05 (84)" means Method Ra-05, "Radiochemical Determination of Radium-228 in Water Samples", in USEPA Radiochemistry Procedures (84). Referenced in Section 611.720.

BOARD NOTE: Also available from USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA Sr-04 (84)" means Method Sr-04, "Radiochemical Determination of Radiostrontium in Water, Sea Water and Other Aqueous Media", in USEPA Radiochemistry Procedures (84). Referenced in Section 611.720.

BOARD NOTE: Also available from USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 00-01 (84)" means Method 00-01, "Radiochemical Determination of Gross Alpha and Gross Beta Activity in Water", in USEPA Radiochemistry Procedures (84). Referenced in Section 611.720.

BOARD NOTE: Also available from USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 00-02 (84)" means Method 00-02, "Radiochemical Determination of Gross Alpha Activity in Drinking Water by Coprecipitation", in USEPA Radiochemistry Procedures (84). Referenced in Section 611.720.

BOARD NOTE: Also available from USEPA, OGWDW (under "Radionuclides (PDF)").

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"USEPA 00-07 (84)" means Method 00-07, "Radiochemical Determination of Thorium and Uranium in Water", in USEPA Radiochemistry Procedures (84). Referenced in Section 611.720.

BOARD NOTE: Also available from USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 100.1 (83)" means "Method 100.1: Analytical Method for Determination of Asbestos in Water" (September 1983), USEPA, Environmental Research Laboratory, document number EPA 600/4-83-043. Available from NEMI; NTRL (document number PB83-260471) and USEPA, NSCEP (search for "600483043"). Referenced in Section 611.611.

"USEPA 100.2 (94)" means "Method 100.2: Determination of Asbestos Structures over 10-mm in Length in Drinking Water" (June 1994), USEPA, Environmental Monitoring Systems Laboratory, document number EPA 600/R-94-134. Available from NEMI; NTRL (document number PB94-201902); USEPA, NSCEP (search for "600R94134"); and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)"). Referenced in Section 611.611.

["USEPA 127 \(21\)" means "Method 127: Determination of Monochloramine Concentration in Drinking Water", document number EPA 815-B-21-004, Version 1.0 \(January 2021\). Available from USEPA, NSCEP \(search for "815B21004"\). Referenced in Section 611.531. BOARD NOTE: Also individually available from NEMI.](#)

"USEPA 150.1 (71)" means "pH: Method 150.1 (Electrometric)" (1971), in USEPA Inorganic Methods (83). Referenced in Section 611.611.  
BOARD NOTE: Also individually available from NEMI.

"USEPA 150.2 (82)" means "pH, Continuous Monitoring (Electrometric) – Method 150.2" (December 1982), in



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USEPA Inorganic Methods (83). Referenced in Section 611.611.

BOARD NOTE: Also individually available from NEMI.

"USEPA 150.3 (17)" means "Method 150.3: Determination of pH in Drinking Water", Version 1.0 (February 2017), USEPA, Office of Ground Water and Drinking Water, document number EPA 815/B-17/001. Available from USEPA, NSCEP (search for "815B17001") and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)" and "Inorganic Contaminants and Other Inorganic Constituents (PDF)"). Referenced in Section 611.611.

"USEPA 180.1 (93)" means "Method 180.1: Determination of Turbidity by Nephelometry", Revision 2.0 (August 1993), in USEPA Environmental Inorganic Methods (93). Referenced in Section 611.531.  
BOARD NOTE: Also individually available from NEMI.

"USEPA 200.5 (03)" means "Method 200.5: Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry", Revision 4.2 (October 2003), USEPA, National Exposure Research Laboratory, document number EPA 600/R-06/115. Available from NEMI; USEPA, NSCEP (search for "600R06115"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)," "Inorganic Contaminants and Other Inorganic Constituents (PDF)," and "Secondary Contaminants (PDF)"). Referenced in Sections 611.611 and 611.612.

"USEPA 200.7 (94)" means "Method 200.7: Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry", Revision 4.4 (May 1994), in USEPA Environmental Metals Methods (94). Referenced in Sections 611.600, 611.611, and 611.612.  
BOARD NOTE: Also individually available from NEMI.

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"USEPA 200.8 (94)" means "Method 200.8: Determination of Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry", Revision 5.3 (May 1994), in USEPA Environmental Metals Methods (94). Referenced in Sections 611.600, 611.611, 611.612, and 611.720.  
BOARD NOTE: Also individually available from NEMI.

"USEPA 200.9 (94)" means "Method 200.9: Determination of Metals and Trace Elements in Water by Ultrasonic Nebulization Inductively Coupled Plasma-Atomic Emission Spectrometry", Revision 2.2 (May 1994), in USEPA Environmental Metals Methods (94). Referenced in Sections 611.600, 611.611, and 611.612.  
BOARD NOTE: Also individually available from NEMI.

"USEPA 245.1 (91)" means "Method 245.1: Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry", Revision 2.3 (April 1991), in USEPA Environmental Metals Methods (94). Referenced in Section 611.611.  
BOARD NOTE: Also individually available from NEMI.

"USEPA 245.2 (74)" means "Mercury: Method 245.2 (Automated Cold Vapor Technique)" (1974), in USEPA Inorganic Methods (83). Referenced in Section 611.611.  
BOARD NOTE: Also individually available from NEMI.

"USEPA 300.0 (93)" means "Method 300.0: Determination of Inorganic Anions by Ion Chromatography", Revision 2.1 (August 1993), in USEPA Environmental Inorganic Methods (93). Referenced in Sections 611.381 and 611.611.  
BOARD NOTE: Also individually available from NEMI.

"USEPA 300.1 (97)" means "Method 300.1: Determination of Inorganic Anions in Drinking Water by Ion Chromatography", Revision 1.0 (September 1997), in

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USEPA Organic and Inorganic Methods (00). Referenced in Sections 611.381 and 611.611.

BOARD NOTE: Also individually available from NEMI.

"USEPA 302.0 (09)" means "Method 302.0: Determination of Bromate in Drinking Water Using Two-Dimensional Ion Chromatography with Suppressed Conductivity Detection" (September 2009), USEPA, Office of Water, document number EPA 815/B-09/014. Available from NEMI; USEPA, NSCEP (search "815B09014"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Sections 611.381 and 611.382.

"USEPA 317.0 (01)" means "Method 317.0: Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis", Revision 2.0 (July 2001), USEPA, Office of Ground Water and Drinking Water, Technical Support Center, document number EPA 815/B-01/001. Available from NEMI; USEPA, NSCEP (search "815B01001"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Sections 611.381 and 611.382.

"USEPA 321.8 (97)" means "Method 321.8: Determination of Bromate in Drinking Waters by Ion Chromatography Inductively Coupled Plasma/Mass Spectrometry", Revision 1.0 (December 1997), in USEPA Organic and Inorganic Methods (00). Referenced in Sections 611.381 and 611.382.

BOARD NOTE: Also individually available from NEMI.

"USEPA 326.0 (02)" means "Method 326.0: Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis", Revision 1.0 (June 2002), USEPA, Office of Ground Water

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and Drinking Water, Technical Support Center, document number EPA 815/R-03/007. Available from NEMI; NTRL (document number PB2003-107402); USEPA, NSCEP (search "815R03007"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Sections 611.381 and 611.382.

"USEPA 327.0 (05)" means "Method 327.0: Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry", Revision 1.1 (May 2005), USEPA, Office of Ground Water and Drinking Water, Technical Support Center, document number EPA 815/R-05/008. Available from NEMI; USEPA, NSCEP (search "815R05008"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Sections 611.381 and 611.531.

"USEPA 334.0 (09)" means "Method 334.0: Determination of Residual in Drinking Water Using an On-line Chlorine Analyzer", Version 1.0 (September 2009), USEPA, Office of Ground Water and Drinking Water, Technical Support Center, document number EPA 815/B-09/013. Available from NEMI; USEPA, NSCEP (search "815B09013"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Sections 611.381 and 611.531.

"USEPA 335.4 (93)" means "Method 335.4: Determination of Total Cyanide by Semi-Automated Colorimetry", Revision 1.0 (August 1993), in USEPA Environmental Inorganic Methods (93). Referenced in Section 611.611.

BOARD NOTE: Also individually available from NEMI.

"USEPA 353.2 (93)" means "Method 353.2: Determination of Inorganic Anions by Ion Chromatography", Revision 2.0 (August 1993), in USEPA

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Environmental Inorganic Methods (93). Referenced in Section 611.611.

BOARD NOTE: Also individually available from NEMI.

"USEPA 365.1 (93)" means "Method 365.1: Determination of Phosphorus by Automated Colorimetry", Revision 2.0 (August 1993), in USEPA Environmental Inorganic Methods (93). Referenced in Section 611.611. BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)").

"USEPA 415.3 (05)" means "Method 415.3: Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water", Revision 1.1 (February 2005), USEPA, National Exposure Research Laboratory, document number EPA 600/R05-055. Available from USEPA, NSCEP (search "600R05055") and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Section 611.381.

"USEPA 415.3 (09)" means "Method 415.3, Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water", Revision 1.2 (September 2009), USEPA, National Exposure Research Laboratory, document number EPA 600/R09-122. Referenced in Section 611.381. Available from NEMI; USEPA, NSCEP (search "600R09122"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)").

"USEPA 502.2 (95)" means "Method 502.2: Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Revision 2.1 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Sections 611.381 and 611.645. BOARD NOTE: Also individually available from NEMI.

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"USEPA 504.1 (95)" means "Method 504.1: 1,2-Dibromomethane (EDB), 1,2-Dibromo-3-Chloropropane (DBCP), and 1,2,3-Trichloropropane (123TCP) in Water by Microextraction and Gas Chromatography", Revision 1.1 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 505 (95)" means "Method 505: Analysis of Organohalide Pesticides and Commercial Polychlorinated Biphenyl (PCB) Products in Water by Microextraction and Gas Chromatography", Revision 2.1 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Sections 611.645 and 611.648.

BOARD NOTE: Also individually available from NEMI.

"USEPA 506 (95)" means "Method 506: Determination of Phthalate and Adipate Esters in Drinking Water by Liquid-Liquid Extraction or Liquid-Solid Extraction and Gas Chromatography with Photoionization Detection", Revision 1.1 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 507 (95)" means "Method 507: Determination of Nitrogen- and Phosphorus-Containing Pesticides in Water by Gas Chromatography with a Nitrogen-Phosphorus Detector", Revision 2.1 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Sections 611.645 and 611.648.

BOARD NOTE: Also individually available from NEMI.

"USEPA 508 (95)" means "Method 508: Determination of Chlorinated Pesticides in Water by Gas Chromatography with an Electron Capture Detector", Revision 3.1 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Sections 611.645 and 611.648.

BOARD NOTE: Also individually available from NEMI.

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"USEPA 508A (89)" means "Method 508A: Screening for Polychlorinated Biphenyls by Perchlorination and Gas Chromatography", Revision 1.0 (1989), in USEPA Organic Methods (91). Referenced in Sections 611.645 and 611.646.

BOARD NOTE: Also individually available from NEMI.

"USEPA 508.1 (95)" means "Method 508.1: Determination of Chlorinated Pesticides, Herbicides, and Organohalides by Liquid-Solid Extraction and Electron Capture Gas Chromatography", Revision 2.0 (1995), in USEPA Organic Methods – Supplement III (95).

Referenced in Sections 611.645 and 611.648.

BOARD NOTE: Also individually available from NEMI.

"USEPA 515.1 (89)" means "Method 515.1: Determination of Chlorinated Acids in Drinking Water by Gas Chromatography with an Electron Capture Detector", Revision 4.1 (1989), in USEPA Organic Methods (91). Referenced in Section 611.645.

"USEPA 515.2 (95)" means "Method 515.2: Determination of Chlorinated Acids in Water Using Liquid-Solid Extraction and Gas Chromatography with an Electron Capture Detector", Revision 1.1 (1995), in USEPA Organic Methods – Supplement III (95).

Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 515.3 (96)" means "Method 515.3: Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Extraction, Derivatization and Gas Chromatography with Electron Capture Detection", Revision 1.0 (July 1996), in USEPA Organic and Inorganic Methods (00). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 515.4 (00)" means "Method 515.4: Determination of Chlorinated Acids in Drinking Water by

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Liquid-Liquid Microextraction, Derivatization and Fast Gas Chromatography with Electron Capture Detection" Revision 1.0 (April 2000), USEPA, Office of Ground Water and Drinking Water, Technical Support Center, document number EPA 815/B-00/001. Available from NEMI; USEPA, NSCEP (search "815B00001"); and USEPA, OGWDW (under "Organic Contaminants (PDF)"). Referenced in Section 611.645.

"USEPA 523 (11)" means "Method 523: Determination of Triazine Pesticides and Other Degradates in Drinking Water by Gas Chromatography/Mass Spectrometry (GC/MS)", Version 1.0 (February 2011), USEPA, Office of Ground Water and Drinking Water, Standards and Risk Management Division, Technical Support Center, document number EPA 815/R-11-002. Available from USEPA, NSCEP (search "815R11002"); and USEPA, OGWDW (under "Organic Contaminants (PDF)"). referenced in Section 611.645.

"USEPA 524.2 (95)" means "Method 524.2: Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry", Revision 4.1 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Section 611.645.  
BOARD NOTE: Also individually available from NEMI.

"USEPA 524.3 (09)" means "Method 524.3: Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Spectrometry", Revision 1.0 (June 2009), USEPA, Office of Ground Water and Drinking Water, Standards and Risk Management Division, Technical Support Center, document number EPA 815/B-09/009. Available from NEMI; USEPA, NSCEP (search for "815B09009"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)" and "Organic Contaminants (PDF)"). Referenced in Sections 611.381 and 611.645.



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"USEPA 524.4 (13)" means "Method 524.4, "Measurement of Purgeable Organic Compounds in Water by Gas Chromatography/Spectrometry Using Nitrogen Purge Gas" (May 2013), USEPA, Office of Ground Water and Drinking Water, Standards and Risk Management Division, Technical Support Center, document number EPA 815/R-13/002. Available from USEPA, NSCEP (search for "815R13002"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)" and "Organic Contaminants (PDF)"). Referenced in Sections 611.381 and 611.645.

"USEPA 525.2 (95)" means "Method 525.2: Determination of Organic Compounds in Drinking by Liquid-Liquid Extraction and Capillary Column Gas Chromatography/Mass Spectrometry", Revision 2.0 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 525.3 (12)" means "Method 525.3: Determination of Total Semivolatile Organic Chemicals in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS)", Version 1.0 (February 2012), USEPA, National Exposure Research Laboratory, document number EPA 600/R-12/010. Available from USEPA, NSCEP (search "600R12010") and USEPA, OGWDW (under "Organic Contaminants (PDF)"). Referenced in Section 611.645.

"USEPA 531.1 (95)" means "Method 531.1: Measurement of N-Methylcarbamoyloximes and N-Methylcarbamates in Water by Direct Aqueous Injection HPLC with Post Column Derivatization", Revision 3.1 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

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"USEPA 531.2 (01)" means "Method 531.2: Measurement of N-Methylcarbamoyloximes and N-Methylcarbamates in Water by Direct Aqueous Injection HPLC with Postcolumn Derivatization", Revision 1.0 (September 2001), USEPA, Office of Ground Water and Drinking Water, Standards and Risk Management Division, Technical Support Center, document number EPA 815/B-01/002. Available from NEMI; USEPA, NSCEP (search "815B01002"); and USEPA, OGWDW (under "Organic Contaminants (PDF)"). Referenced in Section 611.645. See also and

"USEPA 536 (07)" means "Method 536: Determination of Triazine Pesticides and Other Degradates in Drinking Water by Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC/ESI-MS/MS)", Version 1.0 (October 2007), USEPA Office of Ground Water and Drinking Water, Technical Support Center, document number EPA 815/B-07/002. Available from USEPA, NSCEP (search "815B07002") and USEPA, OGWDW (under "Organic Contaminants (PDF)"). Referenced in Section 611.645.

"USEPA 547 (90)" means "Method 547: Determination of Glyphosate in Drinking Water by Direct-Aqueous-Injection HPLC, Post-Column Derivatization, and Fluorescence Detection" (July 1990), in USEPA Organic Methods – Supplement I (90). Referenced in Section 611.645.

"USEPA 548.1 (92)" means "Method 548.1: Determination of Endothall in Drinking Water by Ion-Exchange Extraction, Acidic Methanol Methylation and Gas Chromatography/Mass Spectrometry", Revision 1.0 (August 1992), in USEPA Organic Methods – Supplement II (92). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 549.2 (97)" means "Method 549.2: Determination of Diquat and Paraquat in Drinking Water by Liquid-Solid Extraction and High Performance Liquid

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Chromatography with Ultraviolet Detection", Revision 1.0 (June 1997), USEPA, Office of Research and Development, National Exposure Research Laboratory. Available from NEMI. Referenced in Section 611.645.

"USEPA 550 (90)" means "Method 550: Determination of Polycyclic Aromatic Hydrocarbons in Drinking Water by Liquid-Liquid Extraction and HPLC with Coupled Ultraviolet and Fluorescence Detection" (July 1990), in USEPA Organic Methods – Supplement I (90). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 550.1 (90)" means "Method 550.1: Determination of Polycyclic Aromatic Hydrocarbons in Drinking Water by Liquid-Solid Extraction and HPLC with Coupled Ultraviolet and Fluorescence Detection" (July 1990), in USEPA Organic Methods – Supplement I (90). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 551.1 (95)" means "Method 551.1: Measurement of N-Methylcarbamoyloximes and N-Methylcarbamates in Water by Direct Aqueous Injection HPLC with Post Column Derivatization", Revision 1.0 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Section 611.645.

"USEPA 552.1 (92)" means "Method 552.1: Determination of Haloacetic Acids and Dalapon in Drinking Water by Ion-Exchange Liquid-Solid Extraction and Gas Chromatography with an Electron Capture Detector", Revision 1.0 (August 1992), in USEPA Organic Methods – Supplement II (92). Referenced in Sections 611.381 and 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 552.2 (95)" means "Method 552.2: Determination of Haloacetic Acids and Dalapon in

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Drinking Water by Liquid-Liquid Extraction, Derivatization and Gas Chromatography with Electron Capture Detection", Revision 1.0 (1995), in USEPA Organic Methods – Supplement III (95). Referenced in Sections 611.381 and 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 552.3 (03)" means "Method 552.3: Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection", Revision 1.0 (July 2003), USEPA, Office of Ground Water and Drinking Water, Technical Support Center, document number EPA 815/B-03/002. Available from NEMI; USEPA, NSCEP (search "815B03002"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Sections 611.381 and 611.645.

"USEPA 555 (92)" means "Method 555: Determination of Chlorinated Acids in Water by High Performance Liquid Chromatography with a Photodiode Array Ultraviolet Detector", Revision 1.0 (August 1992), in USEPA Organic Methods – Supplement II (92). Referenced in Section 611.645.

BOARD NOTE: Also individually available from NEMI.

"USEPA 557 (09)" means "Method 557: Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC-ESI-MS/MS)", Version 1.0 (September 2009), USEPA, Office of Ground Water and Drinking Water, Technical Support Center, document number EPA 815/B-09/012. Available from NEMI; USEPA, NSCEP (search "815B09012"); and USEPA, OGWDW (under "Disinfection Byproduct Rules (PDF)"). Referenced in Sections 611.381, 611.382, and 611.645.

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"USEPA 900.0 (80)" means "Gross Alpha and Gross Beta Radioactivity in Drinking Water – Method 900.0" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 900.0 (18)" means Method 900.0, Revision 1.0 "Gross Alpha and Gross Beta Radioactivity in Drinking Water" (February 2018), USEPA, Office of Water, document number EPA 815/B-18/002. Also available from USEPA, NSCEP (search "815B18002") and USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 901.0 (80)" means "Radioactive Cesium in Drinking Water – Method 901.0" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 901.1 (80)" means "Gamma Emitting Radionuclides in Drinking Water – Method 901.1" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 902.0 (80)" means "Radioactive Iodine in Drinking Water – Method 902.0" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

"USEPA 903.0 (80)" means "Alpha-Emitting Radium Isotopes in Drinking Water – Method 903.0" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

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"USEPA 903.1 (80)" means "Radium-226 in Drinking Water Radon Emanation Technique – Method 903.1" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

["USEPA 903.1 \(21\)" means "Method 903.1, Revision 1.0: Radium-226 in Drinking Water Radon Emanation Technique", doc. no. EPA 815-B-21-003 \(January 2021\). Available from USEPA, NSCEP \(nepis.epa.gov; search: "815B21003"\). Referenced in Section 611.720.](#)

"USEPA 904.0 (80)" means "Radium-228 in Drinking Water – Method 904.0" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 905.0 (80)" means "Radioactive Strontium in Drinking Water – Method 905.0" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 906.0 (80)" means "Tritium in Drinking Water – Method 906.0" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 908.0 (80)" means "Uranium in Drinking Water – Radiochemical Method – Method 908.0" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI.

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"USEPA 908.1 (80)" means "Uranium in Drinking Water – Fluorometric Method – Method 908.1" (1980), in USEPA Radioactivity Methods (80). Referenced in Section 611.720.

BOARD NOTE: Also individually available from NEMI and USEPA, OGWDW (under "Radionuclides (PDF)").

"USEPA 1600 (02)" means "Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl- $\beta$ -D-Glucoside Agar (mEI)" (September 2002), USEPA, Office of Water, document number EPA 821/R-02/022. Available from NEMI; USEPA, NSCEP (search "821R02022"); and USEPA, OGWDW (under "Ground Water Rule (PDF)"). Referenced in Section 611.802.

BOARD NOTE: SM 9230 C (93) and SM 9230 (13), "Fecal Streptococcus and Enterococcus Groups, Membrane Filter Techniques", are USEPA-approved variations of this method.

"USEPA 1601 (01)" means "Method 1601: Male-specific (F+) and Somatic Coliphage in Water by Two-step Enrichment Procedure" (April 2001), USEPA, Office of Water, document number EPA 821/R-01/030. Available from NEMI and USEPA, NSCEP (search "821R01030"); and USEPA, OGWDW (under "Ground Water Rule (PDF)"). Referenced in Section 611.802.

"USEPA 1602 (01)" means "Method 1602: Male-specific (F+) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure" (April 2001), USEPA, Office of Water, document number EPA 821/R-01/029. Available from NEMI and USEPA, NSCEP (search "821R01029"); and USEPA, OGWDW (under "Ground Water Rule (PDF)"). Referenced in Section 611.802.

"USEPA 1604 (02)" means "Method 1604: Total Coliforms and Escherichia coli in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI

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Medium)" (September 2002), USEPA, Office of Water, document number EPA 821/R-02/024. Available from NEMI and USEPA, NSCEP (search "821R02024"); and USEPA, OGWDW (under "Ground Water Rule (PDF)", "Revised Total Coliforms Rule (PDF)", and "Surface Water Treatment Rule (PDF)"). Referenced in Sections 611.802 and 611.1052.

"USEPA 1613 (94)" means "Method 1613: Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS", Revision B (October 1994), USEPA, Office of Water, Engineering and Analysis Division, document number EPA 821/B-94/005. Available from NEMI; NTRL (document number PB95-104774); USEPA, NSCEP (search "821B94005"); and USEPA, OGWDW (under "Organic Contaminants (PDF)"). Referenced in Section 611.645.

"USEPA 1622 (01)" means "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA" (April 2001), USEPA, Office of Water, document number EPA 821/R-01/026. Available from NEMI; and USEPA, NSCEP (search "821R01026"). Referenced in Section 611.1007.

"USEPA 1622 (05)" means "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA" (December 2005), USEPA, Office of Ground Water and Drinking Water, document number EPA 815/R-05/001. Available from USEPA, NSCEP (search "815R05001") and USEPA, OGWDW (under "Long Term 2 Enhanced Surface Water Treatment Rule (PDF)"). Referenced in Sections 611.1004 and 611.1007.

"USEPA 1623 (99)" means "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA" (April 1999), USEPA, Office of Ground Water and Drinking Water, document number EPA



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821/R-99/006. Available from USEPA, NSCEP (search "821R99006"). Referenced in Section 611.1007.

"USEPA 1623 (01)" means "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA" (April 2001), USEPA, Office of Ground Water and Drinking Water, document number EPA 821/R-01/025. Available from NEMI and USEPA, NSCEP (search "821R01025"). Referenced in Section 611.1007.

"USEPA 1623 (05)" means "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA" (December 2005), USEPA, Office of Ground Water and Drinking Water, document number EPA 815/R-05/002. Available from USEPA, NSCEP (search "815R05002") and USEPA, OGWDW (under "Long Term 2 Enhanced Surface Water Treatment Rule (PDF)"). Referenced in Sections 611.1004 and 611.1007.

"USEPA 1623.1 (12)" means "Method 1623.1, "Method 1623.1: Cryptosporidium and Giardia in Water by Filtration/IMS/FA" (January 2012), USEPA, Office of Ground Water and Drinking Water, document number EPA 816/R-12/001. Available from USEPA, NSCEP (search "816R12001") and USEPA, OGWDW (under "Long Term 2 Enhanced Surface Water Treatment Rule (PDF)"). Referenced in Section 611.1004.

## USEPA Documents Containing Multiple Numbered Methods

"USEPA Environmental Inorganic Methods (93)" means "Methods for the Determination of Inorganic Substances in Environmental Samples" (August 1993), USEPA, Environmental Monitoring Systems Laboratory, document number EPA 600/R-93-100 (for USEPA 180.1 (93), USEPA 300.0 (93), USEPA 335.4 (93), USEPA 353.2 (93), and USEPA 365.1 (93) only). Available from NTRL (document number PB94-121811) and USEPA, NSCEP (search "600R93100").

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"USEPA Environmental Metals Methods (94)" means "Methods for the Determination of Metals in Environmental Samples – Supplement I", May 1994, USEPA, Environmental Monitoring Systems Laboratory, document number EPA 600/R-94-111 (for USEPA 200.7 (94), USEPA 200.8 (94), USEPA 200.9 (94), and USEPA 245.1 (94) only). Referenced in Sections 611.600, 611.611, 611.612, and 611.720. Available from NTRL (document number PB84-125472) and USEPA, NSCEP (search "600R94111").

"USEPA Inorganic Methods (83)" means "Methods for Chemical Analysis of Water and Wastes"(March 1983), USEPA, Office of Research and Development, document number EPA 600/4-79-020 (USEPA 150.1 (71), USEPA 150.2 (82), and USEPA 245.2 (74) only). Available from NTRL (document number PB84-128677) and USEPA, NSCEP (search "600479020"). Referenced in Section 611.611.

"USEPA Organic and Inorganic Methods (00)" means "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1" (August 2000), USEPA, Office of Water and Office of Research and Development, document number EPA 815/R-00/014 (Methods 300.1 (97), USEPA 321.8 (97), and USEPA 515.3 (96) only). Available from NTRL (document number PB2000-106981) and USEPA, NSCEP (search "815R00014").

"USEPA Organic Methods (91)" means "Methods for the Determination of Organic Compounds in Drinking Water", (December 1988 (revised July 1991)), USEPA, Office of Research and Development, document number EPA 600/4-88/039 (USEPA 508A (89) and USEPA 515.1 (89) only). Available from NTRL (document number PB91-231480) and USEPA, NSCEP (search "600488039") and USEPA, OGWDW.

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"USEPA Organic Methods – Supplement I (90)" means "Methods for the Determination of Organic Compounds in Drinking Water – Supplement I" (July 1990), USEPA, Environmental Monitoring Systems Laboratory, document number EPA 600/4-90/020 (USEPA 547 (90), USEPA 550 (90) and USEPA 550.1 (90) only). Available from NTRL (document number PB91-146027) and USEPA, NSCEP (search "600490020").

"USEPA Organic Methods – Supplement II (92)" means "Methods for the Determination of Organic Compounds in Drinking Water – Supplement II" (August 1992), USEPA, Office of Research and Development, document number EPA 600/R-92/129 (USEPA 548.1 (92), USEPA 552.1 (92), and USEPA 555 (92) only). Available from NTRL (document number PB92-207703) and USEPA, NSCEP (search "600R92129").

"USEPA Organic Methods – Supplement III (95)" means "Methods for the Determination of Organic Compounds in Drinking Water – Supplement III" (August 1995), USEPA, Office of Research and Development, document number EPA 600/R-95/131 (USEPA 502.2 (95), USEPA 504.1 (95), USEPA 505 (95), USEPA 506 (95), USEPA 507 (95), USEPA 508 (95), USEPA 508.1 (95), USEPA 515.2 (95), USEPA 524.2 (95), USEPA 525.2 (95), USEPA 531.1 (95), USEPA 551.1 (95), and USEPA 552.2 (95) only). Available from NTRL (document number PB95-261616) and USEPA, NSCEP (search "600R95131").

"USEPA Radioactivity Methods (80)" means "Prescribed Procedures for Measurement of Radioactivity in Drinking Water" (August 1980), USEPA, Office of Research and Development, Environmental Monitoring and Support Laboratory, document number EPA 600/4-80/032 (USEPA 900.0 (80), USEPA 901.0 (80), USEPA 901.1 (80), USEPA 902.0 (80), USEPA 903.0 (80), USEPA 903.1 (80), USEPA 904.0 (80), USEPA 905.0 (80), USEPA

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906.0 (80), USEPA 908.0 (80), and USEPA 908.1 (80 only). Available from NTRL (document number PB80-224744); USEPA, NSCEP (search "821480032"); and USEPA, OGWDW (under "Radionuclides (PDF))".

"USEPA Radiochemistry Procedures (84)" means "Radiochemistry Procedures Manual" (June 1984), USEPA, Eastern Environmental Radiation Facility, document number EPA 520/5-84-006 (USEPA 00-01 (84), USEPA 00-02 (84), USEPA 00-07 (84), USEPA H-02 (84), USEPA Ra-03 (84), USEPA Ra-04 (84), USEPA Ra-05 (84), USEPA Sr-04 (84) only). Available from NTRL (document number PB84215581); USEPA, NSCEP (search "520584006"); and USEPA, OGWDW.

## Unnumbered Methods

"USEPA ARP (73)" means "Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions" (May 1973), USEPA, Office of Research and Monitoring, National Environmental Research Center, document number EPA-R4-73-014. Available from NTRL (document number PB222154) and USEPA, NSCEP (search "R473014"). Referenced in Section 611.720.

"USEPA IRM (76)" means "Interim Radiochemical Methodology for Drinking Water" (March 1976), USEPA, Office of Research and Development, Environmental Monitoring and Support Laboratory, document number EPA 600/4-75-008 (revised) (pages 1 through 37 only). Available from NTRL (document number PB253258); USEPA, NSCEP (search "600475008A"); and USEPA, OGWDW (under "Radionuclides (PDF)"). Referenced in Section 611.720.

"USEPA IRM (76), pages 1-3" means pages 1 through 3, "Gross Alpha and Beta Radioactivity in Drinking Water", in USEPA IRM (76). Referenced in Section 611.720.

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"USEPA IRM (76), pages 4-5" means pages 4 through 5, "Radioactive Cesium in Drinking Water", in USEPA IRM (76). Referenced in Section 611.720.

"USEPA IRM (76), pages 6-8" means pages 6 through 8, "Radioactive Iodine in Drinking Water: Precipitation Method", in USEPA IRM (76). Referenced in Section 611.720.

"USEPA IRM (76), pages 9-12" means pages 9 through 12, "Radioactive Iodine in Drinking Water: Distillation Method", in USEPA IRM (76). Referenced in Section 611.720.

"USEPA IRM (76), pages 13-15" means pages 13 through 15, "Alpha-Emitting Radium Isotopes in Drinking Water: Precipitation Method", in USEPA IRM (76). Referenced in Section 611.720.

"USEPA IRM (76), pages 16-23" means pages 16 through 23, "Radium-226 in Drinking Water: Radon Emanation Technique", in USEPA IRM (76). Referenced in Section 611.720.

"USEPA IRM (76), pages 24-28" means pages 24 through 28, "Radium-228 in Drinking Water: Sequential Method Radium-228/Radium-226", in USEPA IRM (76). Referenced in Section 611.720.

"USEPA IRM (76), pages 29-33" means pages 29 through 33, "Radioactive Strontium in Drinking Water", in USEPA IRM (76). Referenced in Section 611.720.

"USEPA IRM (76), pages 34-37" means pages 34 through 37, "Tritium in Drinking Water", in USEPA IRM (76). Referenced in Section 611.720.

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"USEPA RCA (79)" means "Radiochemical Analytical Procedures for Analysis of Environmental Samples" (March 1979), USEPA, Environmental Monitoring and Support Laboratory, document number EMSL-LV-0539-17 (pages 1 through 5, 19 through 48, 65 through 73, and 87 through 95 only). Available from NTRL (document number EMSLLV053917); USEPA, NSCEP (search "EMSLLV053917") and USEPA, OGWDW (under "Radionuclides (PDF)"). Referenced in Section 611.720.

"USEPA RCA (79), pages 1-5" means pages 1 through 5, "Determination of Gross Alpha and Beta in Water", in USEPA RCA (79). Referenced in Section 611.720.

"USEPA RCA (79), pages 19-32" means pages 19 through 32, "Determination of Radium-226 and Radium-228 in Water, Soil, Air, and Biological Tissue", in USEPA RCA (79). Referenced in Section 611.720.

"USEPA RCA (79), pages 33-48" means pages 33 through 48, "Isotopic Determination of Plutonium, Uranium, and Thorium in Water, Soil, Air, and Biological Tissue", in USEPA RCA (79). Referenced in Section 611.720.

"USEPA RCA (79), pages 65-73" means pages 65 through 73, "Determination of Strontium-89 and Strontium-90 in Water, Soil, Air, and Biological Tissue", in USEPA RCA (79). Referenced in Section 611.720.

"USEPA RCA (79), pages 87-91" means pages 87 through 91, "Determination of Tritium in Water, Soil, Air, and Biological Tissue (Direct Method)", in USEPA RCA (79). Referenced in Section 611.720.

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"USEPA RCA (79), pages 92-95" means pages 92 through 95, "Isotopic Analysis by Gamma Ray Spectra Using Lithium-Drifted Germanium Detectors", in USEPA RCA (79). Referenced in Section 611.720.

"USEPA Technical Notes (94)" means "Technical Notes on Drinking Water Methods" (October 1994), document number EPA 600/R-94-173, USEPA, Office of Research and Development. Available from NTRL (document number PB95-104766); and USEPA, NSCEP (search "600R94173"). Referenced in Sections 611.531, 611.611, and 611.645.

## Sources of USEPA Methods

NEMI. National Environmental Method Index (on-line at [www.nemi.gov/home/](http://www.nemi.gov/home/)).

NTRL. National Technical Reports Library, U.S. Department of Commerce, 5301 Shawnee Road, Alexandria, VA 22312 (703-605-6000 or 800-553-6847, [ntrl.ntis.gov](http://ntrl.ntis.gov)).

USEPA, NSCEP. United States Environmental Protection Agency, National Service Center for Environmental Publications, P.O. Box 42419, Cincinnati, OH 45242-0419, accessible on-line and available by download from <http://www.epa.gov/nscep/> using the search term indicated for the individual method).

USEPA, OGWDW. United States Environmental Protection Agency, Office of Ground Water and Drinking Water (methods cited as available are directly available through a link in the indicated list on [www.epa.gov/dwanalyticalmethods/approved-drinking-water-analytical-methods](http://www.epa.gov/dwanalyticalmethods/approved-drinking-water-analytical-methods)).

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USGS Methods. All documents available from United States Geological Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

"USGS I-1030-85" means "Alkalinity, electrometric titration, I-1030-85", in "Techniques of Water-Resource Investigation of the United States Geological Survey", 3<sup>rd</sup> ed. (1989), Book 5, Chapter A1, "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments". Available at [pubs.usgs.gov/twri/twri5-a1/pdf/TWRI\\_5-A1.pdf](https://pubs.usgs.gov/twri/twri5-a1/pdf/TWRI_5-A1.pdf). Referenced in Section 611.611.

"USGS I-1601-85" means "Phosphorus, orthophosphate, colorimetric, phosphomolybdate, I-1601-85", in "Techniques of Water-Resource Investigation of the United States Geological Survey", 3<sup>rd</sup> ed. (1989), Book 5, Chapter A1, "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments". Available at [pubs.usgs.gov/twri/twri5-a1/pdf/TWRI\\_5-A1.pdf](https://pubs.usgs.gov/twri/twri5-a1/pdf/TWRI_5-A1.pdf). Referenced in Section 611.611.

"USGS I-1700-85" means "Silica, colorimetric, molybdate blue, I-1700-85", in "Techniques of Water-Resource Investigation of the United States Geological Survey", 3<sup>rd</sup> ed. (1989), Book 5, Chapter A1, "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments". Available at [pubs.usgs.gov/twri/twri5-a1/pdf/TWRI\\_5-A1.pdf](https://pubs.usgs.gov/twri/twri5-a1/pdf/TWRI_5-A1.pdf). Referenced in Section 611.611.

"USGS I-2598-85" means "Phosphorus, orthophosphate, colorimetric, phosphomolybdate, automated-discrete, I-2598-85", in "Techniques of Water-Resource Investigation of the United States Geological Survey", 3<sup>rd</sup> ed. (1989), Book 5, Chapter A1, "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments". Available at [pubs.usgs.gov/twri/twri5-a1/pdf/TWRI\\_5-A1.pdf](https://pubs.usgs.gov/twri/twri5-a1/pdf/TWRI_5-A1.pdf). Referenced in Section 611.611.

"USGS I-2601-90" means "Phosphorus, orthophosphate, colorimetry, phosphomolybdate, automated segment-flow, I-2601-90", in "Methods for Analysis by the U.S. Geological Survey National Water Quality Laboratory – Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments", U.S. Geological Survey, Open File Report 93-125 (1993). Available at



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[pubs.usgs.gov/publication/ofr93125](https://pubs.usgs.gov/publication/ofr93125). Referenced in Section 611.611.

"USGS I-2700-85" means "Silica, colorimetric, molybdate blue, automated-segmented flow, I-2700-85", in "Techniques of Water-Resource Investigation of the United States Geological Survey", 3<sup>rd</sup> ed. (1989), Book 5, Chapter A1, "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments". Available at [pubs.usgs.gov/twri/twri5-a1/pdf/TWRI\\_5-A1.pdf](https://pubs.usgs.gov/twri/twri5-a1/pdf/TWRI_5-A1.pdf). Referenced in Section 611.611.

"USGS I-3300-85" means "Cyanide, colorimetric, pyridine-pyrazolone, I-3300-85", in "Techniques of Water-Resource Investigation of the United States Geological Survey", 3<sup>rd</sup> ed. (1989), Book 5, Chapter A1, "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments". Available at [pubs.usgs.gov/twri/twri5-a1/pdf/TWRI\\_5-A1.pdf](https://pubs.usgs.gov/twri/twri5-a1/pdf/TWRI_5-A1.pdf). Referenced in Section 611.611.

"USGS R-1110-76" means "Cesium-137 and cesium-134, dissolved. Inorganic ion-exchange method – gamma counting, R-1110-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1111-76" means "Radiocesium, dissolved, as cesium-137. Inorganic ion-exchange method – beta counting, R-1111-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1120-76" means "Gross alpha and beta radioactivity, dissolved and suspended, R-1120-76", in "Techniques of Water-

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Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1140-76" means "Radium, dissolved, as radium-226. Precipitation method, R-1140-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1141-76" means "Radium-226, dissolved. Radon emanation method, R-1141-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1142-76" means "Radium-228, dissolved. Determination by separation and counting of actinium-228, R-1142-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1160-76" means "Strontium-90, dissolved. Chemical separation and precipitation method, R-1160-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive

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Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1171-76" means "Tritium. Liquid scintillation, Denver lab method – gamma counting, R-1171-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1180-76" means "Uranium, dissolved. Fluorometric method – direct, R-1180-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1181-76" means "Uranium, dissolved. Fluorometric method – extraction procedure, R-1181-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

"USGS R-1182-76" means "Uranium, dissolved, isotopic ratios. Alpha spectrometry – chemical separation, R-1182-76", in "Techniques of Water-Resource Investigation of the Water Resources Investigations of the United States Geological Survey", Book 5, Chapter A-5, "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments" (1977). Available at [pubs.usgs.gov/twri/twri5a5/pdf/TWRI\\_5-A5.pdf](https://pubs.usgs.gov/twri/twri5a5/pdf/TWRI_5-A5.pdf). Referenced in Section 611.720.

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"Waters B-1011 (87)" means "Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography", Method B-1011 (August 1987). Available from Waters Corporation, Technical Services Division, 34 Maple St., Milford, MA 01757 (800-252-4752 or 508-478-2000, [www.waters.com](http://www.waters.com)) and USEPA, OGWDW (under "Inorganic Contaminants and Other Inorganic Constituents (PDF)"). Referenced in Section 611.611.

- b) The Board incorporates the following federal regulations by reference:

[19 CFR 101.1 \(2022\) \(Definitions\), referenced in Section 611.126.](#)

40 CFR 3.3 (~~2021~~2019) (What Definitions Are Applicable to This Part?), referenced in Section 611.105.

40 CFR 3.10 (~~2021~~2019) (What Are the Requirements for Electronic Reporting to EPA?), referenced in Section 611.105.

40 CFR 3.2000 (~~2021~~2019) (What Are the Requirements Authorized State, Tribe, and Local Programs' Reporting Systems Must Meet?), referenced in Section 611.105.

40 CFR 136.3(a) (~~2021~~2019), referenced in Section 611.1004.

Appendix B to 40 CFR 136 (~~2021~~2019), referenced in Sections 611.359, 611.609, and 611.646.

40 CFR 141.21(f)(6)(i) and (f)(6)(ii) (~~2021~~2019), referenced in Section 611.802.

40 CFR 142.20(b)(1) (~~2021~~2019), referenced in Section 611.112.

Subpart G of 40 CFR 142 (~~2021~~2019), referenced in Section 611.113.

- ~~e) The Board incorporates the following federal statutory provision by reference:~~

~~42 USC 300g-6(d) and (e) (2017).~~

- ~~c~~d) This Part incorporates no later amendments or editions.

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(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.103 Severability**

If a court of competent jurisdiction adjudges any provision of this Part ~~is adjudged~~ invalid, or determines applying it if its application to any person or in any circumstance ~~is adjudged~~ invalid, ~~the such~~ invalidity of the provision does not affect the validity of this Part as a whole, or any ~~other~~ Subpart, Section, subsection, sentence, or clause the court's order does not ~~adjudged~~ adjudged invalid.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.105 Electronic Reporting**

Submitting~~The submission of~~ any document to comply with under any provision of this Part as an electronic document in lieu of a paper document must comply with~~is subject to~~ this Section.

a) Scope and Applicability

- 1) The USEPA, the Board, or the Agency may provide~~allow~~ for submitting the submission of electronic documents in lieu of paper documents. This Section does not require the submission of electronic documents in lieu of paper documents. This Section provides~~sets forth the requirements~~ for submitting an the optional electronic version of submission of any document the supplier must submit to USEPA or the Agency under certain rules~~that must be submitted to the appropriate of the following~~:
  - A) To USEPA directly under Title 40 of the Code of Federal Regulations; or
  - B) To the Board or the Agency under any provision of 35 Ill. Adm. Code 611702 through 705, 720 through 728, 730, 733, 738, or 739.
- 2) A supplier may only submit an electronic~~Electronic~~ document submission under specific circumstances~~this Section can occur only as follows~~:

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- A) For ~~submitting submissions of~~ documents to USEPA, ~~a~~ ~~supplier submissions~~ may ~~submit an electronic document~~ only after USEPA ~~publishes~~ ~~has published~~ a ~~notice in the~~ Federal Register ~~notice announcing~~ that USEPA ~~will be prepared to~~ receive ~~the specific document or type of document;~~ in an electronic format; ~~documents required or permitted by the identified part or subpart of Title 40 of the Code of Federal Regulations;~~ or
- B) For ~~submitting submissions of~~ documents to the State, ~~a~~ ~~supplier submissions~~ may ~~submit an electronic document~~ only ~~after under the following circumstances:~~ the Board or the Agency ~~begins using an~~ ~~may use any~~ electronic document receiving system ~~that for which~~ USEPA ~~approves~~ ~~has granted approval~~ under 40 CFR 3.1000, so long as the system complies with 40 CFR 3.2000, incorporated by reference in Section 611.102(c), and USEPA ~~does~~ ~~has~~ not ~~withdraw~~ ~~withdrawn~~ its approval ~~of the system~~ in writing.
- 3) This Section does not apply to ~~specific any of the following~~ documents, whether or not ~~the supplier submits~~ the document ~~is a document submitted~~ to satisfy the requirements cited in subsection (a)(1):
- A) Any document ~~the supplier submits~~ ~~submitted~~ via facsimile;
- B) Any document ~~the supplier submits~~ ~~submitted~~ via magnetic or optical media, such as a diskette, compact disc, digital video disc, or tape; or
- C) Any data transfer between USEPA, any state, or any local government and ~~either~~ the Board or the Agency as part of administrative arrangements ~~between the parties to the transfer~~ to share data.
- 4) Upon USEPA conferring written approval for ~~submitting the submission of~~ any types of documents as electronic documents in lieu of paper documents, as described in subsection (a)(2)(B), the Agency or the Board, as appropriate, must publish a Notice of Public Information in the Illinois Register that describes the documents approved for submission as electronic documents, the ~~USEPA-approved~~ electronic document

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receiving system ~~for receiving~~~~approved to receive~~ them, the acceptable formats and procedures for their submission, and, as applicable, the date on which the Board or the Agency will begin to receive those submissions. In the event of ~~written cessation of~~ USEPA ~~withdrawing~~ approval for receiving any type of document as an electronic document in lieu of a paper document, the Board or the Agency must similarly cause publication of a Notice of Public Information in the Illinois Register.

BOARD NOTE: Subsection (a) ~~derives~~~~is derived~~ from 40 CFR 3.1, 3.2, 3.10, 3.20, and 3.1000.

- b) Definitions. For the purposes of this Section, terms have the ~~meanings~~~~meaning~~ ~~attributed to them in~~ 40 CFR 3.3, incorporated by reference in 35 Ill. Adm. Code 611.102(c), ~~attributes them~~.
- c) Procedures for Submitting Electronic Documents to USEPA in Lieu of Paper Documents. Except as provided in subsection (a)(3), any person ~~who is required under~~ Title 40 of the Code of Federal Regulations ~~requires~~ to create and submit or otherwise provide a document to USEPA may satisfy this requirement with an electronic document, in lieu of a paper document ~~upon meeting certain, if the following~~ conditions ~~are met~~:
- 1) The person satisfies the requirements of 40 CFR 3.10, incorporated by reference in Section 611.102(c); and
  - 2) USEPA ~~has~~ first ~~publishes~~~~published~~ a notice in the Federal Register, as ~~described in~~ subsection (a)(2)(A) ~~describes~~.

BOARD NOTE: Subsection (c) ~~derives~~~~is derived~~ from 40 CFR 3.2(a) and subpart B of 40 CFR 3.

- d) Procedures for Submitting Electronic Documents to the Board or the Agency in Lieu of Paper Documents
- 1) The Board or the Agency may, ~~but is not required to,~~ establish procedural rules for ~~electronically submitting~~~~the electronic submission of~~ documents. The Board or the Agency must establish any ~~such procedural~~ rules under the Administrative Procedure Act [5 ILCS 100/5].

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- 2) The Board or the Agency may accept electronic documents under this Section only as ~~provided in~~ subsection (a)(2)(B) provides.

BOARD NOTE: Subsection (d) ~~derives is derived~~ from 40 CFR 3.2(b) and subpart D of 40 CFR 3.

- e) Effects of Submitting an Electronic Document in Lieu of a Paper Document

- 1) ~~If a person failing to comply with this Section when electronically submitting who submits a document as an electronic document fails to comply with the requirements of this Section, that person~~ is subject to the penalties prescribed for ~~failing failure~~ to comply with the requirement to file that ~~the electronic document was intended to satisfy~~.
- 2) The electronic signature on a document a person files electronically~~If a document submitted as an electronic document~~ to satisfy a reporting requirement ~~bears an electronic signature, the electronic signature~~ legally binds, obligates, and makes the signer responsible to the same extent as would the filer's filing a paper document bearing the signer's handwritten signature ~~would on a paper document submitted to satisfy the same reporting requirement~~.
- 3) Proof that the signer used a particular signature device ~~was used~~ to create an electronic signature ~~establishes will suffice to establish~~ that the individual uniquely entitled to use the device did so intending with the intent to sign the electronic document and give it effect.
- 4) Nothing in this Section limits using the use of electronic documents or information derived from electronic documents as evidence in enforcement or other proceedings.

BOARD NOTE: Subsection (e) ~~derives is derived~~ from 40 CFR 3.4 and 3.2000(c).

- f) Public Document Subject to State Laws. Any electronic document a person files filed with the Board is a public document. The document, its submission, its retention by the Board, and its availability for public inspection and copying are subject to various State laws, ~~including the following~~:



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- 1) The Administrative Procedure Act [5 ILCS 100];
  - 2) The Freedom of Information Act [5 ILCS 140];
  - 3) The State Records Act [5 ILCS 160];
  - 4) The Electronic Commerce Security Act [5 ILCS 175];
  - 5) The Environmental Protection Act;
  - 6) Regulations relating to public access to Board records (2 Ill. Adm. Code 2175); and
  - 7) Board procedural rules relating to protection of trade secrets and confidential information (35 Ill. Adm. Code 130).
- g) Nothing in this Section or ~~in any rule provisions~~ adopted under subsection (d)(1) ~~creates will create~~ any right or privilege to electronically submit any document ~~as an electronic document~~.

BOARD NOTE: Subsection (g) ~~derives is derived~~ from 40 CFR 3.2(c).

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 3 and 142.10(g).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.108 Delegation to Local Government**

The Agency may delegate portions of its inspection, investigating, and enforcement functions to units of local government under~~pursuant to~~ Section 4(r) of the Act.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.109 Enforcement**

- a) Any person may file an enforcement action under~~pursuant to~~ Title VIII of the Act.
- b) A complainant may use the~~The~~ results of monitoring ~~required under~~ this Part requires~~may be used~~ in an enforcement action.

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BOARD NOTE: ~~This Section derives~~Derived from 40 CFR 141.22(e)and 141.23(a)(4) (2016).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.110 Special Exception Permits**

- a) The Agency must evaluate a request for a SEP granting relief from ~~the~~ monitoring requirements of ~~Section 611.601, 611.602, or 611.603 (IOCs, excluding the Section 611.603 monitoring frequency requirements for cyanide);~~ Section 611.646~~(e)~~ and (f) (a GWS supplier for Phase I, Phase II, and Phase V VOCs); Section 611.646(d); (only as to initial monitoring for 1,2,4-trichlorobenzene); or Section 611.648(d) (~~for~~ Phase II, Phase IIB, and Phase V SOCs) under this Section. The Agency must evaluate on the basis of ~~known~~knowledge of previous use (including transport, storage, or disposal) of the contaminant in the watershed or zone of influence of the system, ~~as determined~~ under 35 Ill. Adm. Code 671.

BOARD NOTE: The Agency ~~may only issue~~must grant a SEP from the Section 611.603 monitoring frequency ~~requirements~~for cyanide ~~based only~~ on ~~the basis of~~ subsection (c), not based on ~~the basis of~~ this subsection (a).

- 1) If the Agency determines that there was no prior use of the contaminant in the water system's watershed or zone of influence, ~~the Agency#~~ must ~~issue~~grant the SEP; or
- 2) If anyone previously used the contaminant ~~was previously used~~ or the previous use ~~is~~was unknown, the Agency must consider certain~~the following~~ factors:
  - A) Previous analytical results;
  - B) The system's proximity ~~of the system~~ to any possible point source of contamination (including spills or leaks at or near a water treatment facility; at manufacturing, distribution, or storage facilities; from hazardous and municipal waste land fills; or from waste handling or treatment facilities) or non-point source of contamination (including the use of pesticides and other land application uses of the contaminant);

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- C) The environmental persistence and transport of the contaminant;
- D) How well local conditions protect the water source ~~is protected~~ against contamination, including: ~~whether it is a SWS or a GWS.~~
- i) For a GWS, ~~must consider~~ well depth, soil type, well casing integrity, and wellhead protection; and
- ii) For an SWS, ~~must consider~~ watershed protection;
- E) For Phase II, Phase IIB, and Phase V SOCs, ~~as follows:~~
- i) Elevated nitrate levels at the water source; and
- ii) The use of PCBs in equipment the supplier uses to produce, store, and distribute ~~used in the production, storage, or distribution of~~ water (including pumps, transformers, etc.); and
- F) For Phase I, Phase II, and Phase V VOCs (under Section 611.646), ~~the number of persons served by the PWS serves,~~ and the proximity of a smaller system to a larger one.
- b) If a supplier refuses to provide any necessary additional information requested by the Agency requests, or if a supplier delivers any necessary information late in the Agency's deliberations on a request, the Agency may deny the ~~requested~~ SEP or issue grant the SEP with conditions within the time allowed by law.
- c) The Agency must issue grant a supplier a SEP allowing a supplier that allows it to discontinue monitoring for cyanide upon determining if it determines that the supplier's water is not vulnerable ~~due to a lack of~~ any industrial source of cyanide.

BOARD NOTE: Subsection (a) ~~derivesis derived~~ from 40 CFR 141.24(f)(8) and (h)(6) ~~(2016)~~. Subsection (b) ~~derivesis derived~~ from 40 CFR 141.82(d)(2), and 141.83(b)(2) ~~(2016)~~. Subsection (c) ~~derivesis derived~~ from 40 CFR 141.23(c)(2) ~~(2016)~~. At 40 CFR 142.18, USEPA ~~reserveshas reserved the~~ discretion, ~~at 40 CFR 142.18 (2016)~~, to review and nullify Agency determinations of the kindstypes made under Sections ~~611.602, 611.603, 611.646, and 611.648. Atand the discretion, at~~ 40 CFR 141.82(i), 141.83(b)(7),

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and 142.19 ~~(2016)~~, USEPA maintains authority to establish federal standards for any supplier, superseding any Agency determination ~~made~~ under Sections 611.352(d), 611.352(f), 611.353(b)(2), and 611.353(b)(4).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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

This Section ~~describes 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 U.S.C. 300g-4(a)(1)(A) and (a)(1)(B)). Every variance under Sections 35 through 38 of the Act must require that the supplier comply within five years. SDWA section 1415 variances ~~need~~ not do ~~so~~ require ultimate compliance within five years in every situation. ~~A supplier~~ Variances under Sections 35 through 38 of the Act do require compliance within five years in every case. ~~Consequently, a PWS~~ may seek ~~have the option of seeking~~ State regulatory relief equivalent to a SDWA section 1415 variance using ~~through~~ one of three procedural mechanisms: a variance under Sections 35 through 38 of the Act and Subpart B of 35 Ill. Adm. Code 104; a site-specific rule under Sections 27 and 28 of the Act and 35 Ill. Adm. Code 102; or an adjusted standard under Section 28.1 of the Act 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 under this Section.
  - 1) The ~~supplier~~ PWS must file a petition under the applicable of 35 Ill. Adm. Code 102 or 104, ~~as applicable~~.
  - 2) If a State requirement does not have a federal counterpart, the Board needs not follow this Section when granting ~~may grant~~ relief from the State requirements ~~without following this Section~~.
- b) Relief from an MCL
  - 1) ~~To justify~~ As part of the justification for relief from an MCL under this Section, the ~~supplier~~ PWS must demonstrate specific facts ~~the following~~:
    - A) ~~Due to~~ Because of the characteristics of the raw water sources and alternative sources that are reasonably available to the system, the ~~supplier~~ PWS cannot meet the MCL;

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- B) The ~~supplier installs or~~PWS will install ~~or has installed the best available technology (BAT)~~ (as identified in Subpart F), treatment technique, or other means that the Agency finds available. BAT may vary depending on ~~specific considerations~~the following:
- i) The number of persons ~~served by~~the system ~~erves~~;
  - ii) Physical conditions related to engineering feasibility; and
  - iii) ~~Compliance costs~~Costs of compliance; and
- C) The variance will not result in an unreasonable risk to human health.
- 2) In any order granting relief under this subsection (b), the Board will prescribe ~~schedules~~a schedule for the following:
- A) ~~A schedule for complying~~Compliance, ~~including increments of progress, by the PWS,~~ with each MCL from which the Board granted~~for which the relief, including increments of progress was granted~~; and
  - B) ~~A schedule for the supplier implementing~~Implementation by the PWS ~~of~~ each additional control measure for each MCL from which the Board granted~~for which the relief is granted~~, during the period ending when the order requires that the supplier comply with the MCL~~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 the supplier to comply as expeditiously as practicable~~compliance~~ with each MCL from which the Board granted~~for which the relief was granted as expeditiously as practicable~~.
  - B) If the Board prescribes a schedule requiring the supplier to comply~~compliance~~ with an MCL that is more~~for which the relief is granted later~~ than five years after when the Board grants~~from the date of issuance of~~ the relief, the Board will take certain actions~~do~~

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~~the following:~~

- i) ~~The Board will document~~Document its rationale for the extended compliance schedule;
  - ii) ~~The Board will discuss its~~Discuss the rationale for the extended compliance schedule in the required public notice and opportunity for public hearing; and
  - iii) ~~The Board will provide~~Provide the shortest practicable schedule feasible for the supplier to comply with the MCL 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 ~~supplier~~PWS must demonstrate that the treatment technique is not necessary to protect the health of the persons served ~~due to~~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~~ under 35 Ill. Adm. Code 102 or 104.
- e) The Board will not grant relief from ~~certain standards~~any of the following:
- 1) From the MCLs for total coliforms and E. coli. 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.
  - 2) From any ~~of the~~ treatment technique ~~requirement in~~requirements of Subpart B.
  - 3) From the ~~residual disinfectant concentration~~ (RDC) requirements ~~in~~ef

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Sections 611.241(c) and 611.242(b).

- f) The Agency must promptly send USEPA the Board's opinion and order ~~of the Board~~ granting relief under this Section. The Board may reconsider and modify its order granting a grant of relief and any conditions, or relief conditions, if USEPA notifies the Board of a finding under section 1415 of the SDWA (42 U.S.C. 300g-4).
- g) In addition to ~~the requirements of~~ this Section, ~~the provisions of~~ Section 611.130 or 611.131 may apply to relief the Board grants ~~granted~~ under this Section.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.4, from section 1415(a)(1)(A) and (a)(1)(B) of the SDWA (42 U.S.C. 300g-4(a)(1)(A) and (a)(1)(B)) and from the Guidance Manual for Filtration and Disinfection (91), incorporated by reference in Section 611.102 ~~and available from USEPA, NSCEP~~. USEPA has ~~established~~ a procedure at 40 CFR 142.23 to review and potentially modify or nullify state determinations granting relief from NPDWRs if USEPA finds that the state ~~abuses~~ ~~has abused~~ its discretion or ~~fails~~ ~~failed~~ to prescribe required schedules for compliance in a substantial number of instances.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.112 Relief Equivalent to SDWA Section 1416 Exemptions**

This Section ~~describes intended to describe~~ how the Board grants ~~State~~ relief equivalent to that available from USEPA under section 1416 of the SDWA (42 USC 300g-5). Every variance under Sections 35 through 37 of the Act must require the supplier to comply within five years. A SDWA section 1416 exemption need ~~exemptions do not do so~~ ~~require ultimate compliance within five years in every situation. A supplier~~ ~~Variances under Sections 35 through 37 of the Act do require compliance within five years in every case. Consequently, a PWS may seek~~ ~~have the option of seeking~~ State regulatory relief equivalent to a SDWA section 1416 exemption through one of three procedural mechanisms: a variance under Sections 35 through 37 of the Act and Subpart B of 35 Ill. Adm. Code 104; a site-specific rule under Sections 27 and 28 of the Act and 35 Ill. Adm. Code 102; or an adjusted standard under Section 28.1 of the Act 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 treatment technique requirement, or from both, under this Section.

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- 1) The supplierPWS must file a petition under the applicable of 35 Ill. Adm. Code 102 or 104, ~~as applicable.~~
  - 2) If a State requirement does not have a federal counterpart, the Board needs not follow this Section when granting relief from the State requirements ~~without following this Section.~~
- b) As part of the justification for relief under this Section, the supplierPWS must demonstrate specific facts ~~the following:~~
- 1) Due to compelling factors (which may include economic factors), the supplierPWS is unable to comply with the MCL or treatment technique requirement and cannot, or to implement measures to develop an alternative source of water supply;
  - 2) Either of two situations are true of the supplier ~~The PWS was either of the following:~~
    - A) The supplier operated ~~In operation~~ on the effective date of the MCL or treatment technique requirement from which the supplier seeks relief; or
    - B) The supplier did not operate ~~Not in operation~~ on the effective date of the MCL or treatment technique requirement from which the supplier seeks relief, and no reasonable alternative source of drinking water is available to the supplierPWS;
  - 3) The relief will not result in an unreasonable risk to human health; and
  - 4) The supplier cannot reasonably make management ~~Management~~ or restructuring changes cannot reasonably be made that will result in the supplier complying ~~compliance~~ with the NPDWR or improved water, ~~if compliance cannot be achieved, improve the~~ quality if the supplier cannot comply ~~of the drinking water.~~

BOARD NOTE: In determining that the supplier cannot reasonably make management or restructuring changes cannot reasonably be made that will result in the supplier complying ~~compliance~~ with the NPDWR, the Board will consider the factors required by ~~USEPA~~ requires under 40 CFR



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142.20(b)(1), incorporated by reference in Section 611.102(c).

- c) In any order granting relief under this Section, the Board will prescribe ~~schedules~~ a schedule for the following:
- 1) ~~A schedule for complying~~ Compliance, including increments of progress, by the PWS, with each MCL ~~from which the Board granted~~ and treatment technique requirement with respect to which the relief, including increments of progress was granted; and
  - 2) ~~A schedule for the supplier implementing~~ Implementation by the PWS, of each additional control measure for each ~~contaminant subject to the~~ MCL or treatment technique requirement ~~from which the Board granted,~~ with respect to which relief is granted.
- d) Schedule of Compliance. A schedule of compliance ~~must will~~ require the supplier to comply as expeditiously as practicable ~~compliance~~ with each MCL or treatment technique requirement ~~from which the Board granted~~ with respect to which relief was granted as expeditiously as practicable, but not later than three years after the otherwise applicable compliance date USEPA established ~~under~~ in section 1412(b)(10) of ~~the~~ SDWA (42 USC 300g-1(b)(10)), except under limited circumstances as follows:
- 1) ~~The Board may not grant~~ No relief ~~may be granted~~ unless the PWS establishes that the supplier ~~it~~ is taking all practicable steps to meet the NPDWR; and
    - A) The supplier ~~PWS~~ cannot meet the NPDWR without capital improvements that the supplier cannot ~~complete~~ be completed within 12 months;
    - B) In the case of a supplier ~~PWS~~ that needs financial assistance for the necessary improvements, the supplier enters ~~PWS has entered~~ into an agreement to obtain the ~~such~~ financial assistance; or
    - C) The supplier enters ~~PWS has entered~~ into an enforceable agreement to become a part of a regional PWS.
  - 2) In the case of a supplier serving ~~PWS that serves~~ 3,300 or fewer persons

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that needs financial assistance for the necessary improvements, ~~the Board may renew the relief may be renewed~~ for one or more additional ~~two-year~~ two-year periods ~~up, not to exceed~~ a total of six years, if the ~~supplierPWS establishes that it~~ is taking all practicable steps to meet the final date for compliance.

- 3) A ~~supplierPWS~~ may not receive relief under this Section if the ~~Board granted the supplierPWS was granted~~ relief under Section 611.111 or 611.131.
- e) The Board will hold at least one public hearing. In addition the Board will accept comments ~~under theas~~ appropriate ~~ofunder~~ 35 Ill. Adm. Code 102 or 104.
- f) The Agency must promptly send USEPA the ~~Board's opinion and order~~ Opinion and Order of the Board granting relief under this Section. The Board may reconsider and modify ~~its order granting a grant of relief and any conditions, or relief conditions,~~ if USEPA notifies the Board of a finding under section 1416 of the SDWA (42 USC 300g-5).

BOARD NOTE: ~~This subsection (f) derives~~ Derived from section 1416 of the SDWA (42 USC 300g-5).

- g) The Board will not grant relief from ~~certain standards~~ any of the following:
  - 1) From the MCLs for total coliforms and E. coli. 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) provide, a small system variance is not available for rules that address microbial contaminants, which include Subparts B, R, S, X, Z, and AA.
  - 2) From any ~~of the~~ treatment technique ~~in~~ requirements of Subpart B.
  - 3) From the ~~residual disinfectant concentration (RDC) requirements of~~ Sections 611.241(c) and 611.242(b) require.
- h) In addition to ~~the requirements of~~ this Section, ~~the provisions of~~ Section 611.130 or 611.131 may apply to relief granted under this Section.

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BOARD NOTE: ~~This Section derives~~Derived from 40 CFR 141.4. USEPA has ~~established~~a procedure at 40 CFR 142.23 to review and potentially modify or nullify state determinations granting relief from NPDWRs ~~ifwhere~~ USEPA finds that the state ~~abuseshas abused~~ its discretion or ~~failsfailed~~ to prescribe required schedules for compliance in a substantial number of instances.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.113 Alternative Treatment Techniques**

This Section is ~~intended to be~~equivalent to section 1415(a)(3) of ~~the~~SDWA (42 USC 300g-4(a)(3)).

- a) ~~TheUnder this Section, the~~ Board ~~willmay~~ grant ~~anyan~~ adjusted standard from a treatment technique requirement ~~under this Section~~.
- b) The supplier seeking an adjusted standard must file a petition under Subpart D of 35 Ill. Adm. Code 104.
- c) As justification the supplier must demonstrate that an alternative treatment technique is at least as effective in lowering the level of the contaminant ~~forwith~~ respect to which ~~a rule prescribes~~ the treatment technique requirement ~~was prescribed~~.
- d) As a condition of any adjusted standard, the Board will require the use of the alternative treatment technique.
- e) The Board will grant ~~an~~ adjusted ~~standardstandards~~ for ~~an~~ alternative treatment ~~techniquetechniques~~ subject to ~~standardthe following~~ conditions:
  - 1) ~~TheAll~~ adjusted ~~standardstandards~~ must ~~include the applicablebe subject to the~~ limitations ~~inof~~ 40 CFR 142, Subpart G, incorporated by reference in Section 611.102; and
  - 2) ~~TheAll~~ adjusted ~~standardstandards~~ must be subject to review and approval by USEPA under 40 CFR 142.46 before ~~it becomes~~~~they become~~ effective.

BOARD NOTE: ~~Subsections (a) through (f) derive~~Derived from section

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1415(a)(3) of ~~the~~ SDWA (42 USC 300g-4(a)(3)).

- f) ~~The provisions of~~ Section 611.130 ~~applies~~apply to ~~a determination~~determinations made under this Section.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.114 Siting Requirements**

Before ~~entering a person enters~~ into a financial commitment for or beginning to construct~~initiates construction of~~ a new PWS or increasing~~increases~~ the capacity of an existing PWS, ~~a supplier~~the person must obtain a construction permit under 35 Ill. Adm. Code 602.101 and, to the extent practicable, avoid locating part or all of the new or expanded facility at a site having certain characteristics of which the following is true:

- a) ~~The site must not be~~ subject to a significant risk from earthquakes, floods, fires, or other disasters that could cause a breakdown of the PWS or a portion of the PWS. As used in this subsection, "significant risk" means a greater risk to the new or expanded facility than would exist at other locations within the area ~~served by the supplier serves~~PWS; or
- b) Except for intake structures, ~~the site must not be~~ within a 100-year~~the~~ floodplain of a 100-year flood.

BOARD NOTE: ~~This Section derives~~Derived from 40 CFR 141.5.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.120 Effective Dates (Repealed)**

~~Except as otherwise provided, this Part becomes effective when filed.~~

~~BOARD NOTE: Derived from 40 CFR 141.60 (2002).~~

(Source: Repealed at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.121 Maximum Contaminant Levels**

- a) Maximum Contaminant Levels. No person may cause or allow delivering water

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~~that is delivered~~ to any user ~~water that exceeds~~~~to exceed~~ the MCL for any contaminant.

- b) ~~The~~~~An~~ MCL for ~~anya~~ particular contaminant applies in lieu of any ~~finished water quality~~ narrative finished water quality standard.

BOARD NOTE: ~~This Section derives~~~~Derived~~ from the definition of "MCL" in 40 CFR 141.2.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.125 Fluoridation Requirement**

~~A CWS adding~~~~All CWSs that are required to add~~ fluoride to the water must maintain a fluoride ion concentration, ~~reported as F,~~ of 0.7 mg/l as fluorine in its distribution system.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.126 Using Lead-Free Pipes, Fittings, Fixtures, Solder, and Flux for Drinking Water**~~Prohibition on Use of Lead~~

a) Applicability and Scope

- 1) This Section incorporates federal standards for pipes; pipe or plumbing fittings; or fixtures, solder, and flux, as sections 1417 and 1461 of SDWA (42 U.S.C. 300g-6 and 300j-21) require. This Section applies to any person introducing these products into commerce, like a manufacturer, importer, wholesaler, distributor, reseller, or retailer. This Section also applies to any person using these products when installing or repairing specific facilities:

A) A PWS; or

B) A residential or nonresidential facility providing water for human consumption.

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- 2) This subsection (a)(2) corresponds with 40 CFR 143.10(b), which USEPA marked "reserved". This statement maintains structural consistency with the corresponding USEPA rules.

BOARD NOTE: Subsection (a) derives from 40 CFR 143.10.

- b) Definitions. The following definitions apply to this Section:

"Accredited third-party certification body" means a body the American National Standards Institute (ANSI) accredits to provide product certification for meeting the lead-free requirements of not more than a weighted average of 0.25 percent lead content for the wetted surfaces, consistent with section 1417 of SDWA and subsection (c), like certification to the NSF/ANSI 372 standard.

"Administrator" means the Administrator of USEPA or an authorized representative.

"Affiliated" means a person or entity directly controlling, indirectly controlling (through one or more intermediaries), under control of, or under common control with a specific person or entity. Affiliated persons or entities include any of the following: a parent company and all wholly or partially owned subsidiaries of the parent company, or two or more corporations or family partnerships having overlap in ownership or control.

"Alloy" means a substance composed of two or more metals or of a metal and a nonmetal.

"Coating" means a thin layer of material, like paint, epoxy, zinc galvanization, or other material, usually applied by spraying or in liquid form to coat internal surfaces of pipes, fittings, or fixtures.

"Custom fabricated product" means a product:

A manufacturer makes on a case-by-case basis to accommodate the unique needs of a single customer;

Not having an assigned Universal Product Code (UPC);

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That no manufacturer, importer, wholesaler, distributor, retailer, or other source stocks or makes available through inventory for distribution; and

That no person catalogs in print or on the internet with a specific item number or code.

"Drinking water cooler" means any mechanical device, affixed to drinking water supply plumbing, actively cooling water for human consumption.

"Fitting" means a pipe fitting or plumbing fitting.

"Fixture" means a receptacle or device connected to a water supply system or discharging to a drainage system or both. Fixtures used for potable uses, including:

Drinking water coolers, drinking water fountains, drinking water bottle fillers, and dishwashers;

Plumbed-in devices, like point-of-use treatment devices, coffee makers, and refrigerator ice and water dispensers; and

Water heaters, water meters, water pumps, and water tanks, unless nobody uses them for potable uses.

"Flux" means a substance someone uses to help melt or join metals, like by removing oxides and other coatings or residues from the metals before joining by using solder or other means.

"Importer" means any person introducing any pipe, any pipe or plumbing fitting or fixture, or any solder or flux entering the United States into commerce; any "importer", as 19 CFR 101.1, incorporated by reference in Section 611.102, defines; or both.

"Introduce into commerce" or "introduction into commerce" means selling or distributing products or offering products for sale or distribution in the United States.

"Liner" means a rigid lining, like a plastic or copper sleeve meeting certain conditions:

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The lining is sealed with a permanent barrier to exclude lead-bearing surfaces from water contact; and

The lining is of sufficient thickness and otherwise having physical properties necessary to prevent erosion and cracking for the expected useful life of the product.

"Manufacturer" means a person or entity conducting either of certain activities:

Processing or making a product; or

Having a second person process or make products under a contractual arrangement for distribution, using the first person's or entity's brand name or trademark.

"Non-potable services" means all product uses and applications that are not potable uses.

"Person" means an individual; corporation, company, association, partnership, municipality, or State or federal agency, including an officer, employee, or agent of a corporation, company, association, municipality, or State or federal agency.

"Pipe" means a conduit, conductor, tubing, or hose and may also include permanently attached end fittings.

"Pipe fitting" means any piece, like a coupling, elbow, or gasket, a person uses for connecting pipe lengths or other plumbing pieces together or for changing direction.

"Plumbing fitting" means a plumbing component controlling the volume or directional flow of water, like a kitchen faucet, bathroom lavatory faucet, manifold, or valve.

"Point-of-use treatment device" means point-of-use treatment device, as Section 611.102 defines.



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"Potable uses", for purposes only of this subsection (b), means services or applications providing water for human ingestion, like drinking, cooking, preparing food, dishwashing, brushing teeth, or maintaining oral hygiene.

"Product" means a pipe, fitting, or fixture.

"Public water system" is as Section 611.102 defines.

"Solder" means a type of metal persons use to join metal parts, like sections of pipe, without melting the existing metal in the joined parts. Solder usually appears on the market in the form of wire rolls or bars.

"State" means the State of Illinois and its authorized agencies.

"United States" includes its commonwealths, districts, states, tribes, and territories.

"Water distribution main" means a pipe, typically found under or adjacent to a roadway, supplying water to buildings via service lines.

BOARD NOTE: Subsection (b) derives from 40 CFR 143.11.

c) Definition of Lead-Free and Calculation Methodology

1) "Lead-free" for the purposes of this Section means an article meeting two conditions:

A) Not containing more than 0.2 percent lead if solder and flux; and

B) Not more than a weighted average of 0.25 percent lead if the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures.

2) Calculate the weighted average lead content of a pipe, pipe fitting, plumbing fitting, or fixture using the following formula:

A) For each wetted component, multiply the percentage of lead in the component by the ratio of the wetted surface area of that

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component to the total wetted surface area of the entire product to derive the weighted percentage of lead of the component.

B) The sum of the weighted percentage of lead of all wetted components gives the weighted average lead content of the product.

C) Use the lead content of the material used to produce wetted components to determine compliance with subsection (c)(1)(B).

D) For lead content of materials given as a range, use the maximum content of the range.

3) If the manufacturer applies a coating to the internal surfaces of a pipe, fitting, or fixture component, use the maximum lead content of both the coating and the alloy to calculate the lead content of the component.

4) If the manufacturer installs a liner into a pipe, fitting or fixture, use the maximum lead content of the liner to calculate the lead content of the component.

5) If a fixture contains any media (e.g., activated carbon, ion exchange resin, etc.) contained in filters, do not use the media in determining the "total wetted surface area of the entire product" in subsection (c)(2).

6) In addition to the definitions of "lead-free" in subsections (c)(1) through (c)(5), no drinking water cooler containing any solder, flux, or storage tank interior surface that may come into contact with drinking water is lead-free if the solder, flux, or storage tank interior surface contains more than 0.2 percent lead. The manufacturer must make its drinking water coolers so that each individual part or component that may come in contact with drinking water does not contain more than eight percent lead while still meeting the maximum 0.25 percent weighted average lead content of the wetted surfaces of the entire product.

BOARD NOTE: Subsection (c) derives from 40 CFR 143.12.

d) Use Prohibitions

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- 1) No person may use any pipe, pipe or plumbing fitting or fixture, solder, or flux that is not lead-free in the installation or repair of specific facilities:
  - A) Any PWS; or
  - B) Any plumbing in a residential or nonresidential facility providing water for human consumption.
- 2) Subsection (d)(1) does not apply to leaded joints necessary for the repair of cast iron pipes.

BOARD NOTE: Subsection (d) derives from 40 CFR 143.13.

- e) This subsection (e) corresponds with 40 CFR 143.14, requiring authorized states to implement the requirements of section 1417(a)(1) of SDWA (42 USC 300g-6(a)(1)) and 40 CFR 143.13. This statement maintains structural consistency with the corresponding USEPA rule.
- f) Introduction into Commerce Prohibitions
  - 1) No person may introduce into commerce any pipe, pipe or plumbing fitting or fixture, solder, or flux that is not lead-free, except for a pipe for use in manufacturing or industrial processing;
  - 2) No person engaged in the business of selling plumbing supplies in the United States, except a manufacturer, may sell solder or flux that is not lead-free; and
  - 3) No person may introduce into commerce any solder or flux that is not lead-free, unless the solder or flux bears a prominent label stating that it is illegal to use the solder or flux in the installation or repair of any plumbing providing water for human consumption.

BOARD NOTE: Subsection (f) derives from 40 CFR 143.15.

- g) Exemptions. Subsections (d), (f), and (j) do not apply to certain products:
  - 1) Pipes, pipe fittings, plumbing fittings, or fixtures, including backflow preventers, exclusively for use in non-potable services, like

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manufacturing, industrial processing, irrigation, outdoor watering, or any other uses in which no person would reasonably anticipate anyone would use the water for human consumption. Additional products that could be "used exclusively for non-potable services" include certain items:

- A) Products clearly labeled, on the product, package, or tag with a phrase like, "Not for use with water for human consumption", or another phrase conveying the same meaning in plain language;
  - B) Products incapable of use in potable services (e.g., physically incompatible) with other products needed to convey water for potable uses; and
  - C) Products plainly identifiable and marketed as solely for a use other than for conveying water (these other uses include for conveying air, chemicals other than water, hydraulic fluids, refrigerants, gasses, or other non-water fluids).
- 2) Toilets, bidets, urinals, fill valves, flushometer valves, tub fillers, shower valves, fire hydrants, service saddles, and water distribution main gate valves (provided the valves are at least two inches (5.1 cm) in diameter or larger).
- 3) Clothes washing machines, emergency drench showers, emergency face wash equipment, eyewash devices, fire suppression sprinklers, steam capable clothes dryers, and sump pumps.

BOARD NOTE: Subsection (g) derives from 40 CFR 143.16.

- h) This subsection (h) corresponds with 40 CFR 143.17, which USEPA marked "Reserved". This statement maintains structural consistency with the corresponding USEPA rule.
- i) Required Labeling of Solder and Flux That Is Not Lead-Free. Solder and flux that is not "lead-free", as defined in subsection (c)(1)(A), must bear a prominent label stating that using the solder or flux in the installation or repair of any plumbing providing water for human consumption is illegal.

BOARD NOTE: Subsection (i) derives from 40 CFR 143.18.

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- j) Required Certification of Products
- 1) A manufacturer or importer introducing into commerce products that must meet the lead-free requirements of section 1417 of the Safe Drinking Water Act and subsection (c) must ensure, except as provided in subsections (j)(1)(A) through (j)(1)(C), that the products are certified compliant, as specified in subsections (j)(2) and (j)(3), before the later of September 1, 2023 or introducing the product into commerce, whichever occurs later. The manufacturer or importer must maintain documents to substantiate the certification for at least five years after the date the manufacturer or importer last sold the product.
    - A) The manufacturer or importer needs not individually certify product components of assembled pipes, fittings, or fixtures if the entire product in its final assembled form is lead-free certified.
    - B) The manufacturer or importer needs not individually certify direct replacement parts for previously installed lead-free certified products if the weighted average lead content of wetted surface area for the part does not exceed the lead content of the original part.
    - C) The manufacturer or importer needs not certify dishwashers.
  - 2) The manufacturer or importer must obtain certification of its products from an accredited third party certification body, except as subsection (j)(3) provides otherwise. The manufacturer or importer must keep records for all products an accredited third-party certification body certifies, minimally including documents substantiating certification, certification dates, and expiration dates. The manufacturer or importer must provide these documents to the Agency or USEPA upon request, as subsection (k)(2) requires.
  - 3) A manufacturer or importer may self-certify its products may be self-certified by manufacturers or importers under subsection (j)(3)(A) or (j)(3)(B). A manufacturer or importer electing to self-certify its products must comply with subsections (j)(4) through (j)(7).

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- A) Manufacturers having fewer than ten employees, or importers entering products purchased from or manufactured by manufacturers having fewer than ten employees, may elect to self-certify products in lieu of obtaining certification from an accredited third-party certification body. The number of employees includes any persons employed by the manufacturer and its affiliated entities. The manufacturer must calculate its number of employees by averaging the number of persons that it and its affiliated entities employ, regardless of part-time, fulltime, or temporary status, for each pay period over the manufacturer's and affiliated entities' latest 12 calendar months or averaged over the number of months in existence if less than 12 months. Any firm that subsequently expands employment to ten or more employees, based on the most recent 12-month average number of persons employed, is no longer eligible to self-certify products and must obtain third-party certification within 12 months of having ten or more employees.
- B) A manufacturer or importer may elect to self-certify any custom-fabricated product in lieu of obtaining certification from an ANSI-accredited third-party certification body, regardless of the number of persons the manufacturer or importer employs.
- 4) To self-certify products, the eligible manufacturer or importer must attest that products comply with the definition of "lead-free" in subsection (c) by developing and maintaining a "certificate of conformity". The certificate of conformity must fulfill certain conditions:
- A) A responsible corporate officer; general partner; proprietor; or an authorized representative of a responsible corporate officer, general partner, or proprietor must sign the certificate; and
- B) The manufacturer or importer must post the certificate to a website with continuing public access in the United States, unless distributing the certificate by other means (e.g., electronically or in hard copy) with the product through the distribution channel for final delivery to the end-use installer of the product.

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- 5) The certificate of conformity must be in English and include specific information:
- A) Contact information for the manufacturer or importer:
    - i) The entity's or proprietor's name;
    - ii) Street and mailing addresses;
    - iii) Phone number; and
    - iv) Email address;
  - B) For products imported into the United States, the certificate must also include contact information for the manufacturer;
  - C) A brief listing of the products, including any applicable unique identifying information like model names and numbers;
  - D) A statement attesting that the products meet the lead-free requirements of section 1417 of the Safe Drinking Water Act (42 USC 300g-6) and subpart B of 40 CFR 143 and that the manufacturer or importer is eligible to self-certify the product under that rule;
  - E) A statement indicating how the manufacturer or importer verified conformance with section 1417 of the Safe Drinking Water Act (42 USC 300g-6) and subpart B of 40 CFR 143; and
  - F) The signature, date, name, and position of the signatory and the name and position of the officer, partner, or proprietor who is principal if the signatory certifies as agent on behalf of a responsible corporate officer.
- 6) A manufacturer or importer self-certifying products must maintain at a primary place of business within the United States certificates of conformity and documents sufficient to confirm that products meet the lead-free requirements of this Section. Sufficient documents may include detailed schematic drawings of the products indicating dimensions,

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records of calculations of the weighted average lead content of the products, documents giving the lead content of materials used in manufacture, and other documents the manufacturer or importer used in verifying the lead content of a plumbing device. The manufacturer or importer must provide these documents and certificates of conformity upon request to the Administrator, as specified in subsection (k)(2) provides, and maintain the documents for at least five years after the manufacturer or importer last sold the product.

- 7) The manufacturer or importer must complete the certificate of conformity and documents before introducing a product into commerce.

BOARD NOTE: Subsection (j) derives from 40 CFR 143.19.

k) Compliance Provisions

- 1) Not complying with the Act or this Section may subject a person to enforcement action. Enforcement action may include injunctive or declaratory relief, a Board order to cease and desist, civil penalties, or criminal penalties.
- 2) USEPA or the Agency may, on a case-by-case basis, request any information, like records it deems necessary to determine whether a person complies with section 1417 of the Safe Drinking Water Act (42 USC 300g-6); subpart B of 40 CFR 143, incorporated by reference in Section 611.102; and this Section. The manufacturer or importer must provide requested information to USEPA or the Agency at a time and in a format as reasonably requested by USEPA or the Agency.

BOARD NOTE: Subsection (k) derives from 40 CFR 143.20.

- a) ~~In General. Prohibition. Any pipe, any pipe or plumbing fitting or fixture, any solder or any flux must be lead free, as defined by subsection (b), if it is used in the installation or repair of either of the following:~~
  - 1) ~~Any PWS; or~~
  - 2) ~~Any plumbing in a residential or nonresidential facility providing water for human consumption that is connected to a PWS. This subsection (a)~~



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~~does not apply to leaded joints necessary for the repair of cast iron pipes.~~

b) ~~Definition of Lead Free~~

1) ~~For purposes of this Section, the term "lead free" means as follows:~~

A) ~~When used with respect to solders and flux, refers to solders and flux containing not more than 0.2 percent lead; and~~

B) ~~When used with respect to pipes, pipe fittings, plumbing fittings, and fixtures, refers to pipes and pipe, pipe fittings, plumbing fittings, and fixtures containing not more than 0.25 percent lead.~~

2) ~~The weighted average lead content of a pipe, pipe fitting, plumbing fitting, or fixture must be calculated by using the following formula: For each wetted component, the percentage of lead in the component must be multiplied by the ratio of the wetted surface area of that component to the total wetted surface area of the entire product to arrive at the weighted percentage of lead of the component. The weighted percentage of lead of each wetted component must be added together, and the sum of these weighted percentages will constitute the weighted average lead content of the product. The lead content of the material used to produce wetted components is used to determine compliance with subsection (b)(1)(B). For lead content of materials that is provided as a range, the maximum content of the range must be used.~~

~~BOARD NOTE: Derived from 40 CFR 141.43(a) and (d), and section 1417 of SDWA, 42 USC 300g-6(a)(1), (d), and (e). Congress changed the lead standards for fittings and fixtures in for the Reduction of Lead in Drinking Water Act, Pub. L. 111-380, section 2(a)(2) and (b), 124 Stat. 4131 (Jan. 4, 2011). The Board incorporated the statutory changes into this Section. USEPA proposed rules in 2017 that would incorporate the revised statutory requirements into its rules for lead-free plumbing materials. 82 Fed. Reg. 4805 (Jan. 17, 2017). Recognizing the importance of certification in USEPA's proposed rule and the requirements of 35 Ill. Adm. Code 604.105(f), the Board notes that certification under ANSI/NSF 61 using the methods of ANSI/NSF 372 is a generally accepted method for demonstrating that plumbing materials are lead free as required by this Section.~~

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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**Section 611.130 Special Requirements for Certain Variances and Adjusted Standards**

- a) Relief from the Fluoride MCL
- 1) ~~When~~ granting any variance or adjusted standard to a CWS supplier ~~that is a CWS~~ from the maximum contaminant level for fluoride ~~listed in~~ Section 611.301(b), the Board will require the supplier to apply application of the best available technology (BAT) identified in subsection (a)(4) ~~for that constituent~~ as a condition to the relief, unless the supplier ~~demonstrates has demonstrated~~ through comprehensive engineering assessments that applying application of BAT is not technically appropriate and technically feasible for that supplier.
  - 2) If the Board does not require the supplier to apply BAT, the Board will require specific conditionsthe following as a condition for relief from the fluoride MCL ~~where it does not require the application of BAT~~:
    - A) ~~TheThat the~~ supplier must continue investigating certainto investigate the following methods as ~~an~~ alternative means of significantly reducing the ~~level of~~ fluoride level on, according to a definite schedule:
      - i) ~~ModifyingA modification of~~ lime softening;
      - ii) Alum coagulation;
      - iii) Electrodialysis;
      - iv) Anion exchange resins;
      - v) Well-fieldWell field management;
      - vi) UsingThe use of alternative sources of raw water; and
      - vii) Regionalization; and
    - B) ~~TheThat the~~ supplier must report results of its investigations that investigation to the Agency.

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- 3) The Agency must petition the Board to reconsider or modify a variance or adjusted standard; under Subpart I of 35 Ill. Adm. Code 101; if the Agency determines that an alternative method the supplier identified by the supplier under subsection (a)(2) is technically feasible and would result in a significant reduction in fluoride.
- 4) Two processes are BAT~~Best available technology~~ for fluoride ~~reduction is as follows:~~
  - A) Activated alumina absorption centrally applied; and
  - B) Reverse osmosis centrally applied.

BOARD NOTE: This subsection derives ~~Subsection (a) derived~~ from 40 CFR 142.61.

- b) Relief from an IOC, VOC, or SOC MCL
  - 1) A~~In granting to a supplier that is a~~ CWS or NTNCWS must first apply the appropriate BAT for the contaminant before the Board may grant any variance or adjusted standard from the maximum contaminant levels for any VOC or SOC, ~~listed~~ in Section 611.311(a) or (c); ~~or for any IOC, listed in Section 611.301, the supplier must have first applied the best available technology (BAT) identified at Section 611.311(b) (VOCs and SOCs) or Section 611.301(e) (IOCs) for that constituent,~~ unless the supplier ~~demonstrates~~has demonstrated through comprehensive engineering assessments that ~~applying application of~~ BAT would achieve only a minimal and insignificant reduction in the contaminant level of contaminant.

BOARD NOTE: USEPA lists BAT for each SOC and VOC at 40 CFR 142.62(a); for the purposes of variances and exemptions (adjusted standards). That list is identical to the list at 40 CFR 141.61(b), which corresponds with Section 611.311(b).
- 2) The Board may require any of certain conditions in any~~the following as a condition for~~ relief from an MCL ~~listed~~ in Section 611.301 or 611.311:
  - A) The~~That the~~ supplier must continue investigating to investigate

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alternative means ~~for complying on~~of compliance according to a definite schedule; and

- B) ~~The~~That the supplier must report results of ~~its~~that investigation to the Agency.
- 3) The Agency must petition the Board to reconsider or modify a variance or adjusted standard, under Subpart I of 35 Ill. Adm. Code 101, if the Agency ~~it~~ determines that an alternative method the supplier identified ~~by the supplier~~ under subsection (b)(2) is technically feasible.

BOARD NOTE: ~~This subsection~~Subsection (b) ~~derives~~derived from 40 CFR 142.62(a) through (e).

- c) Conditions Requiring Use of Bottled Water, a Point-of-Use Treatment Device, or a Point-of-Entry Treatment Device. ~~When~~in granting any variance or adjusted standard from the ~~MCLs~~maximum contaminant levels for organic and inorganic chemicals or an adjusted standard from the treatment technique for lead and copper, the Board may impose certain conditions requiring the use of bottled water, a point-of-entry treatment device, or a point-of-use treatment device to avoid an unreasonable risk to human health, limited as ~~provided in~~ subsections (d) and (e) provide.
- 1) Relief from an MCL. When granting a variance or adjusted standard from an MCL in Section 611.301 or 611.311, the~~When granting any variance or adjusted standard from the MCL requirements of Sections 611.301 and 611.311,~~ the Board may, ~~when granting~~ impose a condition requiring that requires a supplier to use bottled water, a point-of-entry treatment device, a point-of-use treatment device, or other means to avoid an unreasonable risk to human health.
- 2) Relief from Corrosion Control Treatment. When granting an adjusted standard from the corrosion control treatment requirements for lead and copper under Sections 611.351 and 611.352, the~~When granting an adjusted standard from the corrosion control treatment requirements for lead and copper of Sections 611.351 and 611.352,~~ the Board may, ~~when granting~~ impose a condition requiring that requires a supplier to use bottled water, a point-of-use treatment device, or other means, but not a point-of-entry treatment device, to avoid an unreasonable risk to human health.

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- 3) Relief from Source Water Treatment or Replacing Service Lines Replacement. When granting an exemption from the source water treatment and lead service line replacement requirements under Section 611.353 or 611.354, the The Board may, ~~when granting an exemption from the source water treatment and lead service line replacement requirements for lead and copper under Sections 611.353 or 611.354,~~ impose a condition requiring that requires a supplier to use a point-of-entry treatment device to avoid an unreasonable risk to human health.

BOARD NOTE: This subsection ~~Subsection~~ (c) derives ~~derived~~ from 40 CFR 142.62(f).

- d) Using ~~Use of~~ Bottled Water. A supplier proposing ~~Suppliers that propose~~ to use or using ~~use~~ bottled water as a condition for receiving a variance or an adjusted standard from ~~the~~ requirements in ~~of~~ Section 611.301 or ~~Section~~ 611.311 or an adjusted standard from ~~the~~ requirements in ~~of~~ Sections 611.351 through 611.354 must comply with ~~meet the requirements of~~ either subsections (d)(1), (d)(2), (d)(3), and (d)(6) or (d)(4), (d)(5), and (d)(6).
- 1) The supplier must develop a monitoring program for Board approval providing that provides reasonable assurances that the bottled water meets all MCLs in ~~of~~ Sections 611.301 and 611.311, and the supplier must describe ~~submit a description of~~ this program in ~~as part of~~ its petition. The description ~~proposed program~~ must demonstrate ~~describe~~ how the supplier will comply with each requirement of this subsection (d).
- 2) The supplier must monitor representative samples of the bottled water for all contaminants regulated ~~under~~ Sections 611.301 and 611.311 during the first three-month period that it supplies the bottled water to the public, then ~~and~~ annually after that ~~thereafter~~.
- 3) The supplier must annually provide the results of its ~~the~~ monitoring program ~~to~~ the Agency.
- 4) The supplier must receive a certification from the bottled water company as to each of the following:
- A) That the supplier provides bottled water supplied has been taken

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from an approved source of bottled water, as ~~such is defined in~~ Section 611.101 ~~defines~~;

- B) That the approved source of bottled water ~~monitors as has~~ ~~conducted monitoring in accordance with~~ 21 CFR 129.80(g)(1) through (g)(3) ~~require~~; and
  - C) That the bottled water does not exceed any MCLs or quality limits ~~as set out in~~ 21 CFR ~~110, 129, and~~ 165.110, ~~110, and 129~~.
- 5) The supplier must provide the certification ~~required by~~ subsection (d)(4) ~~requires~~ to the Agency during the first quarter after it begins supplying bottled water ~~then and~~ annually ~~after that thereafter~~.
  - 6) The supplier must ~~provide assurance the provision of~~ sufficient quantities of bottled water to every affected person ~~supplied by~~ the supplier ~~serves~~ via door-to-door bottled water delivery.

BOARD NOTE: ~~This subsection~~ Subsection (d) ~~derives~~ derived from 40 CFR 142.62(g).

- e) ~~Using~~ Use of a Point-of-Entry Treatment Device. Before the Board grants any PWS a variance or adjusted standard from ~~an any~~ NPDWR, ~~including that includes~~ a condition requiring ~~the~~ use of a point-of-entry treatment device, the supplier must demonstrate ~~certain facts~~ to the Board ~~each of the following~~:
  - 1) That the supplier will operate and maintain the device;
  - 2) That the device ~~protects human~~ provides health ~~protection~~ equivalent to ~~that provided by~~ central treatment;
  - 3) That the supplier will maintain the microbiological safety of the water at all times;
  - 4) That the supplier has ~~established~~ standards for performance, conducted a rigorous engineering design review, and field tested the device;
  - 5) That ~~operating the operation~~ and ~~maintaining maintenance of~~ the device will account for any potential for increased concentrations of heterotrophic

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bacteria resulting ~~from using through the use of~~ activated carbon, by backwashing, post-contactor disinfection, and heterotrophic plate count monitoring;

- 6) That buildings connected to the supplier's distribution system have sufficient devices properly installed, maintained, and monitored to ~~ensure protecting assure that~~ all consumers ~~are protected~~; and
- 7) That ~~using the use of~~ the device will not cause increased corrosion of ~~lead- and copper-bearing lead and copper bearing~~ materials ~~located~~ between the device and ~~the~~ tap that could increase contaminant levels at the tap.

BOARD NOTE: ~~This subsection~~ Subsection (e) ~~derives derived~~ from 40 CFR 142.62(h).

- f) Relief from the Maximum Contaminant Levels for Radionuclides
  - 1) Relief from the Maximum Contaminant Levels for Combined Radium-226 and Radium-228, Uranium, Gross Alpha Particle Activity (Excluding Radon and Uranium), and Beta Particle and Photon Radioactivity
    - A) ~~For relief equivalent to a federal section 1415 variance or section 1416 exemption, Section 611.330(g) lists sets forth what USEPA identifies has identified as the best available technology (BAT), treatment techniques, or other means available for complying achieving compliance with the MCLs maximum contaminant levels for the radionuclides listed in Section 611.330(b), (c), (d), and (e), for the purposes of issuing relief equivalent to a federal section 1415 variance or a section 1416 exemption.~~
    - B) ~~For relief equivalent to a federal section 1415 variance or section 1416 exemption for a small system, defined here as one serving 10,000 persons or fewer, in addition to the technologies listed in Section 611.330(g), Section 611.330(h) lists sets forth what USEPA identifies has identified as the BAT, treatment techniques, or other means available for complying achieving compliance with the MCLs maximum contaminant levels for the radionuclides listed in Section 611.330(b), (c), (d), and (e), in addition to the technologies~~

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~~in Section 611.330(g) for the purposes of~~ issuing relief equivalent to a federal section 1415 small system variance or a section 1416 exemption ~~to small drinking water systems, defined here as those serving 10,000 persons or fewer, as shown in the second table set forth at Section 611.330(h).~~

- 2) ~~As a condition for relief equivalent to a federal 1415 variance or section 1416 exemption, the~~The Board will require a CWS supplier to install and use any treatment technology ~~identified~~ in Section 611.330(g); or ~~611.330(h) for a in the case of~~ small system water systems (those serving 10,000 persons or fewer), ~~listed in Section 611.330(h), as a condition for granting relief equivalent to a federal section 1415 variance or a section 1416 exemption,~~ except as ~~provided in~~ subsection (f)(3) provides otherwise. If ~~the supplier cannot meet the MCL,~~ after installing the ~~system's installation of the~~ treatment technology, the supplier ~~issystem cannot meet the MCL, that system will be~~ eligible for relief.
- 3) If a CWS supplier demonstrates by ~~can demonstrate through~~ comprehensive engineering assessments, which may include pilot plant studies, that the treatment technologies identified in this Section would only achieve a ~~de~~ minimum reduction in the contaminant level, the Board may issue a schedule of compliance ~~requiring that requires~~ the system ~~being granted relief equivalent to a federal section 1415 variance or a section 1416 exemption~~ to examine other treatment technologies as a condition of obtaining ~~the relief~~ equivalent to a federal section 1415 variance or section 1416 exemption.
- 4) If the Agency determines that a treatment technology identified under subsection (f)(3) is technically feasible, ~~the Agency~~ may request that the Board require the supplier to install and use that treatment technology ~~on~~ in connection with a compliance schedule ~~issued~~ under Section 36 of the Act. The Agency must base its ~~Agency's~~ determination on the supplier's ~~must be based upon~~ studies ~~by the system~~ and other relevant information.
- 5) To avoid unreasonable risk to human health, the ~~The~~ Board may require a CWS supplier to use bottled water, point-of-use devices, point-of-entry devices, or other means as a condition of ~~granting~~ relief equivalent to a federal section 1415 variance or a section 1416 exemption from ~~the~~ requirements in ~~of~~ Section 611.330, ~~to avoid an unreasonable risk to~~



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health.

- 6) A CWS supplier ~~using that uses~~ bottled water as a condition ~~to for receiving~~ relief equivalent to a federal section 1415 variance or a section 1416 exemption from the requirements of Section 611.330 must ~~comply with meet the requirements specified in~~ subsection (d)(6) and either subsections (d)(1) through (d)(3) or (d)(4) and (d)(5).
- 7) A CWS supplier ~~using that uses~~ point-of-use or point-of-entry devices as a condition ~~to for obtaining~~ relief equivalent to a federal section 1415 variance or a section 1416 exemption from the radionuclides NPDWRs must meet the conditions in subsections (e)(1) through (e)(6).

BOARD NOTE: ~~This subsection~~ Subsection (f) ~~derives derived~~ from 40 CFR 142.65.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### Section 611.131 Relief Equivalent to SDWA Section 1415(e) Small System Variance

This Section is ~~the intended as a~~ State equivalent of SDWA section 1415(e) ~~of the federal SDWA~~ (42 USC 300g-4(e)).

- a) ~~A PWS serving fewer than 10,000 persons may obtain a variance~~ ~~Variationes may be obtained~~ from ~~the requirement to comply with~~ an MCL or treatment technique ~~under to a PWS serving fewer than 10,000 persons in~~ this Section. The PWS ~~supplier~~ must file a variance petition under Subpart B of 35 Ill. Adm. Code 104, except as ~~modified or supplemented by~~ this Section provides otherwise.
- b) The Board ~~may will~~ grant a small system variance to a PWS supplier serving fewer than 3,300 ~~or fewer~~ persons. The Board ~~may will~~ grant a small system variance to a PWS serving more than 3,300 persons but fewer than 10,000 persons ~~subject to USEPA's with the approval of the USEPA~~. In determining the number of persons ~~served by~~ the PWS serves, the Board will include persons ~~served by~~ consecutive systems serve. A small system variance ~~for granted to~~ a PWS also applies to any consecutive system ~~served by it~~ serves.
- c) Availability of a Variance

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- 1) A small system variance is not available under this Section ~~from for~~ an NPDWR for a microbial contaminant (including a bacterium, virus, or other organism) or an indicator or treatment technique for a microbial contaminant.
- 2) A small system variance under this Section is available ~~from certain MCLs for compliance with a requirement specifying an MCL~~ or treatment ~~technique technique for a contaminant with respect to which the following is true:~~
  - A) ~~NPDWRs that USEPA adopted~~ An NPDWR was promulgated on or after January 1, 1986; and
  - B) ~~NPDWRs for which~~ The USEPA ~~publishes~~ has published a small system variance technology under section 1412(b)(15) of ~~the federal~~ SDWA (42 USC 300g-1(b)(15)).

BOARD NOTE: Small system variances are not available ~~for PWSs~~ above ~~at the~~ pre-1986 MCL even if USEPA subsequently revised the MCL. If the USEPA revises a pre-1986 MCL and makes it more stringent, ~~then~~ a variance ~~is would be~~ available for that contaminant, but only up to the pre-1986 maximum contaminant level. See subpart B of 40 CFR 141 (1985) for the pre-1986 MCLs and treatment techniques. See "Variance Technology Findings for Contaminants Regulated Before 1996", USEPA, Office of Water, doc. no. EPA 815-R-98-003 (available online at [nepis.epa.gov](http://nepis.epa.gov) search "815R98003").

- d) No small system variance ~~is effective~~ ~~will be in effect~~ until ~~after~~ the last applicable event ~~later of the following:~~
  - 1) 90 days after the Board ~~grants~~ ~~proposes to grant~~ the small system variance;
  - 2) If USEPA objects to ~~the Board is proposing to grant~~ a small system variance ~~for~~ a PWS serving fewer than 3,300 persons ~~and the USEPA objects to the small system variance~~, ~~after the date on which~~ the Board ~~modifies~~ makes the variance as USEPA recommended ~~modifications~~ or responds in writing to each USEPA objection; or
  - 3) If the Board ~~grants~~ ~~is proposing to grant~~ a small system variance to a PWS serving a population of more than 3,300 ~~but~~ and fewer than 10,000

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persons, ~~after the date the~~ USEPA approves the small system variance.

- e) As part of ~~its~~ showing of arbitrary or unreasonable hardship, the PWS must prove and document ~~certain information~~ ~~the following~~ to the Board:
- 1) That the PWS is eligible for a small system variance under subsection (c);
  - 2) That the PWS cannot afford ~~pursue specific alternatives~~ to comply with the NPDWR for which ~~it seeks~~ a small system variance ~~is sought,~~ ~~including by the following~~:
    - A) Treatment;
    - B) Alternative sources of water supply;
    - C) Restructuring or consolidation changes, including ownership change or physical consolidation with another PWS; or
    - D) Obtaining financial assistance under section 1452 of the federal SDWA or any other federal or State program;
  - 3) That the PWS meets the source water quality requirements for installing the small system variance technology developed under guidance ~~that~~ [USEPA](#) published under section 1412(b)(15) of ~~the federal~~ SDWA (42 USC 300g-1(b)(15));  
  
[BOARD NOTE: See 71 Fed. Reg. 10671 \(Mar. 2, 2006\) \("Small Drinking Water Systems Variances – Revision of Existing National-Level Affordability Methodology and Methodology to Identify Variance Technologies That Are Protective of Public Health"\).](#)
  - 4) That the PWS is financially and technically ~~able to install,~~ ~~operated,~~ ~~capable of installing,~~ ~~operating,~~ and ~~maintain~~ ~~maintaining~~ the applicable small system variance technology; and
  - 5) That the terms and conditions of the small system variance ensure adequate protection of human health, considering ~~two factors~~ ~~the following~~:

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- A) The quality of the source water for the PWS; and
  - B) Removal efficiencies and expected useful life of the small system variance technology.
- f) Terms and Conditions
- 1) The Board will set the terms and conditions ~~for~~ a small system variance ~~issued~~ under this Section and ~~will~~ include specific minimum, at a minimum, the following requirements:
    - A) ~~The supplier must properly and effectively install, operate, Proper and effective installation, operation, and maintain maintenance of~~ the applicable small system variance technology that USEPA indicated in published accordance with guidance ~~published by the USEPA,~~ taking into consideration any relevant source water characteristics and any other site-specific conditions that may affect proper and effective operation and maintenance of the technology;
    - B) ~~The supplier must monitor~~ Monitoring requirements for the contaminant ~~from~~ for which the Board grants the small system variance ~~is sought~~; and
    - C) Any other terms or conditions the Board determines that are necessary to adequately protect human ensure adequate protection of public health, which may include certain requirements the following:
      - i) Public education requirements; and
      - ii) Source water protection requirements.
  - 2) The Board will establish a schedule for the PWS to comply with the terms and conditions of the small system variance including certain minimum that will include, at a minimum, the following requirements:
    - A) Increments of progress, such as milestone dates for the PWS to apply for financial assistance and begin capital improvements;

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- B) Quarterly reporting to the Agency ~~how~~ of the PWS complies ~~PWSs~~ compliance with the terms and conditions of the small system variance;
- C) A schedule ~~Schedule~~ for the Agency ~~Board~~ to review the small system variance; and

BOARD NOTE: Corresponding 40 CFR 142.307(d) provides that the states must review small system variances no less frequently than every five years. ~~Section 36 of the Act provides that five years is the maximum term of a variance.~~

- D) Compliance with the terms and conditions of the small system variance as soon as practicable, but not later than three years after the date the Board granted ~~on which~~ the small system variance is granted. The Board may allow up to two additional years upon determining if the Board determines that additional time is necessary for the PWS to accomplish a specific objective ~~to the following~~:
- i) To complete ~~Complete~~ necessary capital improvements to comply with the small system variance technology, secure an alternative source of water, or restructure or consolidate; or
  - ii) To obtain ~~Obtain~~ financial assistance provided ~~provided~~ under section 1452 of ~~the~~ SDWA (42 USC 300j-12) or any other federal or State program.
- g) The Board will provide notice and opportunity for a public hearing, as provided in ~~provided in~~ Subpart B of 35 Ill. Adm. Code 104 provides, except as modified or supplemented ~~by~~ this Section provides otherwise.
- 1) At least 30 days before the public hearing on to discuss ~~on to discuss~~ the proposed small system variance, the PWS must provide notice to all persons served by ~~served by~~ the PWS serves. For billed customers, this notice must include the information listed in subsection (g)(2). For other persons regularly served by ~~regularly served by~~ the PWS regularly serves, the notice must provide sufficient information to alert

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readers to the proposed variance and direct them to where to ~~obtain~~receive additional information, ~~and must be as provided in subsection (g)(1)(B).~~ The PWS must provide the notice ~~Notice must be~~ by specific~~the following~~ means:

- A) Direct mail or other home delivery to billed customers or other service connections; and
  - B) Any other method reasonably calculated to notify, ~~in a brief and concise manner,~~ other persons regularly served by the PWS in a brief and concise manner. ~~The other method~~Such methods may include publication in a local newspaper, posting in public places, or delivery to community organizations.
- 2) The notice in subsection (g)(1)(A) must include certain,~~at a~~ minimum information,~~the following~~:
- A) Identification of the contaminants for which the PWS seeks a small system variance ~~is sought~~;
  - B) A brief statement of the health effects associated with the contaminants for which the PWS seeks a small system variance ~~is sought~~, using language in Appendix H;
  - C) The address and telephone number ~~at which~~ interested persons may use to obtain further information concerning the contaminant and the small system variance;
  - D) A brief summary, ~~in easily understandable terms,~~ of the terms and conditions of the small system variance in easily understandable terms;
  - E) A description of the consumer petition process under subsection (h) and information on contacting the Agency and USEPA Region ~~Regional Office~~;
  - F) A brief statement announcing the public meeting ~~required under~~ subsection (g)(3) requires, including a statement of the purpose of the meeting, information regarding the time and location for the

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meeting, and the address and telephone number ~~at which~~ interested persons may use to obtain further information concerning the meeting; and

- G) In communities with a large proportion of non-English-speaking residents, as determined by the Agency Board, information in the appropriate language regarding the content and importance of the notice.
- 3) The Board will provide for at least one public hearing on the small system variance. The PWS must provide notice in the manner required under subsection (g)(1) at least 30 days prior to the public hearing.
- 4) When granting a small system~~Prior to promulgating the final~~ variance, the Board will issue a written opinion and order responding~~respond in writing~~ to all significant public comments received onrelating to the small system variance and stating the Board's reasons for granting the variance. The Board will make the variance petition, hearings transcripts, public comments received, and all~~Response to public comment and any other documents of record concerning the~~documentation supporting the issuance of a variance will be made available to the public throughout the variance proceeding and after adopting the variance~~final promulgation~~.
- h) Any person ~~served by~~ the PWS serves may petition ~~the~~ USEPA to object to ~~the granting of~~ a small system variance within 30 days after the Board grants ~~the proposes to grant a small system~~ variance ~~for the PWS~~.
- i) The Agency must promptly send ~~to the~~ USEPA the Board's opinion and order~~Opinion and Order of the Board~~ granting the proposed small system variance. The Board will make ~~the~~ recommended modifications, respond in writing to each objection, or reconsider~~withdraw the proposal to grant~~ the small system variance if USEPA notifies the Board of a finding under section 1415(e)(8), (e)(9), or (e)(10) of ~~the~~ SDWA (42 USC 300g-4(e)(8), (e)(9), or (e)(10)).
- j) In addition to the requirements of this Section, the provisions of Section 611.111, 611.112, or 611.130 may apply to relief granted under this Section.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 142, Subpart K.

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(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.160 Composite Correction Program**

a) The Agency may ~~issue a SEP requiring~~~~require in writing that~~ a PWS ~~to~~ conduct a Composite Correction Program (CCP). The CCP must consist of two elements: a Comprehensive Performance Evaluation (CPE) and a Comprehensive Technical Assistance (CTA).

1) A CPE is a thorough review and analysis of a plant's performance-based capabilities and associated administrative, operation, and maintenance practices. ~~The CPE#~~ must identify factors that may ~~be~~ adversely ~~affect~~ ~~the~~ ~~impacting a~~ plant's ~~ability~~ ~~capability~~ to ~~comply~~ ~~achieve compliance~~ and emphasize approaches ~~the PWS~~ that can ~~implement~~ ~~be implemented~~ without significant capital improvements.

2) For purposes of compliance with Subparts R and X, the ~~CPE~~ ~~comprehensive performance evaluation~~ must ~~minimally include~~ ~~specific~~ ~~consist of at least the following~~ components: ~~the CPE must~~ ~~assess~~ ~~Assessment of~~ plant performance; ~~evaluate~~ ~~evaluation of~~ major unit processes; ~~identify~~ ~~identification~~ and ~~prioritize~~ ~~performance-~~ ~~limiting~~ ~~prioritization of performance limiting~~ factors; ~~assess~~ ~~assessment of~~ the applicability of comprehensive technical assistance; and ~~how the PWS~~ ~~prepared~~ ~~preparation of the~~ CPE report.

BOARD NOTE: ~~This subsection~~ ~~Subsection~~ (a)(2) ~~derives~~ ~~is derived~~ from the third sentence of the definition of "comprehensive performance evaluation" in 40 CFR 141.2-(2006).

3) A CTA is the ~~performance-improvement~~ ~~performance improvement~~ phase ~~the PWS implements~~ ~~that is implemented~~ if the CPE results indicate ~~potential for~~ improved performance-~~potential~~. During the CTA phase, the PWS must identify and systematically address plant-specific factors. The CTA is a combination of utilizing CPE results as a basis for followup, implementing process control priority-setting techniques, and maintaining long-term involvement to systematically train staff and administrators.

b) A PWS must implement any followup recommendations ~~the Agency makes~~ ~~made~~



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in writing ~~as by the Agency that~~ result ~~as part~~ of the CCP.

- c) A PWS may appeal to the Board, ~~under pursuant to~~ Section 40 of the Act, any Agency requirement that it conduct a CCP or any followup recommendations ~~the Agency makes made~~ in writing ~~as by the Agency that~~ result ~~as part~~ of the CCP, except when a CPE is required under Section 611.745(b)(4).

BOARD NOTE: ~~This Section derives~~ ~~Derived~~ from 40 CFR 142.16(g) ~~(2016)~~.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### Section 611.161 Case-by-Case Reduced Subpart Y Monitoring for Wholesale and Consecutive Systems

The Agency may ~~issue, by~~ a SEP ~~reducing, reduce the~~ monitoring ~~under requirements of~~ Subpart Y as they apply to a wholesale system or a consecutive system, otherwise than ~~as by use of the provisions of~~ Section 611.500 ~~provides~~, subject to ~~the following~~ limitations:

- a) The Agency must consider the ~~certain following~~ system-specific ~~factors knowledge~~ in making its determination:
- 1) The amount and percentage of finished water ~~the PWS provides provided~~;
  - 2) Whether finished ~~the PWS provides~~ water ~~is provided~~ seasonally, intermittently, or full-time;
  - 3) Improved DBP occurrence information based on IDSE results;
  - 4) Significant changes in the supplier's raw water quality, treatment, or distribution system after ~~completing completion of~~ the IDSE; and
  - 5) ~~Other Such other~~ considerations ~~bearing as would bear~~ on ~~DBP the~~ occurrence ~~of DBP~~ in the ~~supplier's~~ distribution system and the ability of the reduced monitoring to detect DBP in ~~that the supplier's~~ distribution system.
- b) Any reduced monitoring ~~the Agency allows allowed~~ under this Section must require ~~that the PWS maintain~~ a minimum of one compliance monitoring location ~~for each supplier~~.

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- c) The supplier must report any changes in its raw water quality, treatment, or distribution system or any other factors ~~arising that come to its attention~~ after the ~~Agency issues the issuance of a SEP that allows reduced monitoring~~ under this Section that would bear on ~~the~~ occurrence of DBP in the ~~supplier's~~ distribution system and the ~~supplier's ability of the reduced monitoring~~ to detect DBP in ~~its~~ ~~the supplier's~~ distribution system ~~under the reduced monitoring~~.
- d) ~~The Agency may allow the reduced monitoring provided by this Section only after USEPA has approved the State program revisions involving Subparts W and Y.~~

BOARD NOTE: ~~This Section derives~~ ~~Derived~~ from 40 CFR 142.16(m) and the preamble discussion at 71 Fed. Reg. 388, 430-31 (Jan. 4, 2006). USEPA stated that ~~it will allow~~ the State ~~may to elect to~~ authorize reduced monitoring ~~under according to~~ a ~~State-devised~~ procedure ~~devised by the State~~. The Board borrowed from ~~USEPA's~~ the special primacy requirements ~~for its subpart V: State 2 Disinfection Byproducts Requirements applicable to the Subpart Y provisions~~ and the accompanying preamble discussion to derive the procedure ~~set forth~~ in this Section.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART B: FILTRATION AND DISINFECTION

**Section 611.201 Requiring a Demonstration**

The Agency must ~~issue a SEP notifying and notify each~~ supplier ~~when the Agency requires the supplier to make in writing of the date on which any~~ demonstrations ~~under this Subpart B pursuant to the Section are required~~. The Agency must require demonstrations ~~when at times that meet the~~ USEPA ~~requires the requirements for that~~ type of demonstration, allowing sufficient time for the supplier to collect the necessary information.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.202 Procedures for Agency Determinations (Repealed)**

~~The determinations in this Subpart B are by a SEP.~~

(Source: Repealed at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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**Section 611.211 Filtration Required**

The Agency must require a supplier using a surface water source or groundwater under the direct influence of surface water to filter the water it provides to the public.~~determine that filtration is required unless the PWS meets the following criteria:~~

- a) ~~Source Water Quality Criteria~~
  - 1) ~~Coliforms, see Section 611.231(a)~~
  - 2) ~~Turbidity, see Section 611.231(b)~~
- b) ~~Site Specific Criteria~~
  - 1) ~~Disinfection, see Section 611.241(b)~~
  - 2) ~~Watershed control, see Section 611.232(b)~~
  - 3) ~~On-site inspection, see Section 611.232(e)~~
  - 4) ~~Absence of waterborne disease outbreaks, see Section 611.232(d)~~
  - 5) ~~Total coliform MCL, see Sections 611.232(e) and 611.325~~

BOARD NOTE: This Section originally derived~~Derived~~ from 40 CFR 141.71 and ~~from the~~ preamble discussion at 54 Fed. Reg. 27505 (June 29, 1989). The Board replaced the original rule with the present requirement that a supplier apply filtration treatment because no supplier using a surface water source or groundwater under the direct influence of surface water operates in Illinois. This rule avoids a gap in the Illinois rules.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.212 Groundwater under Direct Influence of Surface Water**

The Agency ~~must~~shall, under Section 611.201, require a CWS supplier~~all CWSs~~ to demonstrate under Section 611.201 whether it uses~~they are using~~ "groundwater under the direct influence of surface water". Based on the information the supplier provides, the~~The~~ Agency must determine with information provided by the supplier whether a PWS uses "groundwater under the direct

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influence of surface water" ~~on an individual basis~~. The Agency must base this determination on specific factors ~~determine that a groundwater source is under the direct influence of surface water based upon the following:~~

- a) Physical Characteristics of the Source. Whether the source is obviously a surface water source, such as a lake or stream. Other sources possibly that may be subject to influence from surface waters include: springs, infiltration galleries, wells, or other collectors in subsurface aquifers.
- b) Well Construction Characteristics and Geology with Field Evaluation
  - 1) The Agency may use the wellhead protection program's requirements, which include delineation of wellhead protection areas, assessment of sources of contamination, and implementation of management control systems, to determine if the wellhead is under the direct influence of surface water.
  - 2) A well ~~Wells~~ less than or equal to 50 feet deep ~~is in depth are~~ likely ~~to be~~ under the direct influence of surface water.
  - 3) A well ~~more~~ Wells ~~greater~~ than 50 feet deep ~~is in depth are~~ likely ~~to be~~ under the direct influence of surface water, unless it includes specific features ~~they include the following:~~
    - A) A surface sanitary seal using bentonite clay, concrete, or similar material;
    - B) A well casing penetrating ~~that penetrates~~ consolidated (slowly permeable) material; and
    - C) A well casing that is only perforated or screened below consolidated (slowly permeable) material.
  - 4) A source ~~that is~~ less than 200 feet from any surface water is likely ~~to be~~ under the direct influence of surface water.
- c) Any structural modifications to prevent the direct influence of surface water and eliminate the potential for Giardia lamblia cyst contamination.

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- d) Source Water Quality Records. ~~The following are indicative~~ Specific factors indicate that a source is under the direct influence of surface water:
- 1) A record of total coliform or fecal coliform contamination in untreated samples collected over the past three years;
  - 2) A history of turbidity problems associated with the source; or
  - 3) A history of known or suspected outbreaks of *Giardia lamblia*, *Cryptosporidium*, or other pathogenic organisms associated with surface water ~~attributable that has been attributed to the~~ that source.
- e) Significant and relatively rapid shifts in water characteristics, such as turbidity, temperature, conductivity, or pH.
- 1) A variation in turbidity of 0.5 NTU or more over one year is indicative of surface influence.
  - 2) A variation in temperature of nine Fahrenheit degrees or more over one year is indicative of surface influence.
- f) Significant and relatively rapid shifts in water characteristics, such as turbidity, temperature, conductivity, or pH, ~~that closely correlating with~~ correlate to climatological or surface water conditions ~~indicate are indicative of~~ surface water influence.
- 1) Evidence of particulate matter associated with the surface water; or
  - 2) Turbidity or temperature data that correlates ~~with~~ that of a nearby surface water source.
- g) Particulate Analysis. Significant occurrence of insects or other macroorganisms, algae, or ~~large-diameter~~ large diameter pathogens, such as *Giardia lamblia*, ~~indicates is indicative of~~ surface influence.
- 1) "Large-diameter pathogens ~~Large diameter~~ particulates" are those over seven micrometers.
  - 2) The supplier must measure particulates ~~Particulates must be measured~~ as

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~~specified in~~ the Guidance Manual for Filtration and Disinfection (91), incorporated by reference in Section 611.102, specifies.

- h) The potential for contamination by small-diameter pathogens, such as bacteria or viruses, does not alone render the source "under the direct influence of surface water".

BOARD NOTE: This Section derives~~Derived~~ from the definition of "groundwater under the direct influence of surface water" in 40 CFR 141.2; from the Preamble at 54 Fed. Reg. 27489 (June 29, 1989); and from the USEPA Guidance Manual for Filtration and Disinfection (91).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.213 No Method of HPC Analysis**

~~This Section is used in~~ Sections 611.241(d)(2), 611.242(c)(2), 611.261(b)(8)(G), 611.262(b)(3)(G), 611.532(f)(2), and 611.533(c)(2) rely on this Section. The Agency must determine that a system has no means for having a sample analyzed for HPC ~~if the Agency determines that such action is warranted~~, based on specific~~the following~~ site-specific conditions:

- a) There is no certified laboratory that can analyze the sample within the time and temperatures ~~specified in~~ the Board Note appended to Section 611.531(a)(2)(A) specifies;
- b) The supplier ~~provides~~is providing adequate disinfection in the distribution system, considering certain factors~~the following~~:
- 1) Other measurements ~~showing that show~~ the presence of RDC in the distribution system;
  - 2) The distribution system size ~~of the distribution system~~; and
  - 3) The adequacy of the supplier's cross connection control program; and
- c) The PWS cannot maintain an RDC in ~~its~~the distribution system.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.72(a)(4)(ii) ~~(2016)~~.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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**Section 611.220 General Requirements**

- a) ~~This~~The requirements of this Subpart B ~~constitutes~~constitute NPDWRs. This Subpart B establishes criteria ~~for under which~~ filtration ~~is required~~ as a treatment technique for PWSs ~~using~~supplied by a surface water source ~~and PWSs supplied by a~~ groundwater source under the direct influence of surface water. ~~This Subpart B also establishes~~In addition, ~~these regulations establish~~ treatment ~~technique~~technique requirements in lieu of MCLs for ~~specific~~the following contaminants: Giardia lamblia, viruses, HPC bacteria, Legionella, and turbidity. ~~Each~~ supplier ~~using with~~ a surface water source or a groundwater source under the direct influence of surface water must ~~treat~~provide treatment of that source water ~~and comply that complies~~ with these treatment ~~technique~~technique requirements. The treatment ~~techniques~~ ~~comprise~~technique requirements consist of installing and properly operating water treatment processes that reliably achieve ~~specific objectives~~the following:
- 1) At least 99.9 percent (3-log) removal or inactivation of Giardia lamblia cysts between a point where the raw water is not subject to recontamination by surface water runoff and a ~~point~~ downstream ~~point~~ before or at the first customer; and
  - 2) At least 99.99 percent (4-log) removal or inactivation of viruses between a point where the raw water is not subject to recontamination by surface water runoff and a ~~point~~ downstream ~~point~~ before or at the first customer.
- b) A supplier using a surface water source or a groundwater source under the direct influence of surface water ~~complying with Section 611.250 (filtration) and Section 611.241 (disinfection) complies~~is considered to be in compliance with ~~the requirements of subsection (a), if either of the following is true:~~
- 1) ~~The supplier meets the requirements for avoiding filtration in Sections 611.230 through 611.232 and the disinfection requirements in Section 611.241; or~~
  - 2) ~~The supplier meets the filtration requirements in Section 611.250 and the disinfection requirements in Section 611.242.~~
- c) ~~Each~~ supplier using a surface water source or a groundwater source under the

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direct influence of surface water must have a certified operator under 35 Ill. Adm. Code 603.103 and the Public Water Supply Operations Act [415 ILCS 45].

- d) Additional Requirements for PWSs Serving 10,000 or More Persons. In addition to ~~complying with requirements in~~ this Subpart B, ~~a PWSPWSs~~ serving 10,000 or more persons must also comply with ~~the requirements in~~ Subpart R.
- e) Additional Requirements for Systems Serving Fewer Than 10,000 People. In addition to ~~complying with requirements in~~ this Subpart B, ~~a suppliersystems~~ serving fewer than 10,000 people must also comply with ~~the requirements in~~ Subpart X.

BOARD NOTE: ~~This Section derives~~Derived from 40 CFR 141.70. The Public Water Supply Operations Act applies only to CWSs, which ~~are regulated by~~ the Agency regulates. It does not apply to non-CWSs, which ~~are regulated by~~ Public Health regulates. Public Health has its own requirements for personnel operating water supplies ~~that it regulates~~, e.g., 77 Ill. Adm. Code 900.40(e). The Board removed provisions for unfiltered system suppliers. A supplier in Illinois using a surface water source or groundwater under the direct influence of surface water must apply filtration treatment and disinfection to water it provides to the public.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.230 Filtration Effective Dates (Repealed)**

- a) ~~A supplier that uses a surface water source must meet all of the conditions of Section 611.231 and 611.232, unless the Agency has determined that filtration is required.~~
- b) ~~A supplier that uses a groundwater source under the direct influence of surface water must meet all of the conditions of Section 611.231 and 611.232, and is subject to Section 611.233, beginning 18 months after the Agency determines that it is under the direct influence of surface water, unless the Agency has determined that filtration is required.~~
- e) ~~This subsection (e) corresponds with the third sentence in the preamble to 40 CFR 141.71, which pertains exclusively to implementation of the Surface Water Treatment rule. This statement maintains structural consistency with the federal rules.~~



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- d) ~~Within 18 months after the failure of a system using surface water or a groundwater source under the direct influence of surface water to meet any one of the requirements of Sections 611.231 and 611.232, the system must have installed filtration and meet the criteria for filtered systems specified in Sections 611.242 and 611.250.~~

~~BOARD NOTE: Derived from 40 CFR 141.71 preamble (2016).~~

~~(Source: Repealed at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)~~

**Section 611.231 Source Water Limitation~~Quality Conditions~~**

~~No CWS may use recycled sewage treatment plant effluent on a routine basis. The Agency must consider the following source water quality conditions in determining whether to require filtration under Section 611.211:~~

- a) ~~The fecal coliform concentration must be equal to or less than 20/100 ml, or the total coliform concentration must be equal to or less than 100/100 ml (measured as specified in Section 611.531(a) or (b) and 611.532(a)) in representative samples of the source water immediately prior to the first or only point of disinfectant application in at least 90 percent of the measurements made for the 6 previous months that the system served water to the public on an ongoing basis. If a system measures both fecal and total coliforms, the fecal coliform criterion, but not the total coliform criterion, in this subsection, must be met.~~
- b) ~~The turbidity level cannot exceed 5 NTU (measured as specified in Section 611.531(a) and 611.532(b)) in representative samples of the source water immediately prior to the first or only point of disinfectant application unless the following are true:~~
- ~~1) The Agency determines that any such event was caused by circumstances that were unusual and unpredictable; and~~
  - ~~2) As a result of any such event there have not been more than two events in the past 12 months the system served water to the public, or more than five events in the past 120 months the system served water to the public, in which the turbidity level exceeded 5 NTU. An "event" is a series of consecutive days during which at least one turbidity measurement each~~

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~~day exceeds 5 NTU.~~

~~BOARD NOTE: Derived from 40 CFR 141.71(a) (2003).~~

- e) ~~Use of recycled sewage treatment plant effluent by a CWS on a routine basis must not be permitted.~~

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.232 Site-Specific Conditions (Repealed)**

~~The Agency must consider the following site specific criteria in determining whether to require filtration under Section 611.211:~~

- a) ~~Disinfection~~
- ~~1) The supplier must meet the requirements of Section 611.241(a) at least 11 of the 12 previous months that the system served water to the public, on an ongoing basis, unless the system fails to meet the requirements during two of the 12 previous months that the system served water to the public, and the Agency determines that at least one of these failures was caused by circumstances that were unusual and unpredictable.~~
  - ~~2) The supplier must meet the following requirements at the times specified for each:~~
    - ~~A) The requirements of Section 611.241(b)(1) at all times the system serves water to the public; and~~
    - ~~B) The requirements of Section 611.241(b)(2) at all times the system serves water to the public, unless the Agency determines that any such failure was caused by circumstances that were unusual and unpredictable.~~
  - ~~3) The supplier must meet the requirements of Section 611.241(c) at all times the system serves water to the public, unless the Agency determines that any such failure was caused by circumstances that were unusual and~~

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~~unpredictable.~~

- 4) ~~The supplier must meet the requirements of Section 611.241(d) on an ongoing basis, unless the Agency determines that failure to meet these requirements was not caused by a deficiency in treatment of the source water.~~
- b) ~~Watershed Control Program. The supplier must maintain a watershed control program that minimizes the potential for contamination by Giardia lamblia cysts and viruses in the source water.~~
  - 1) ~~The Agency must determine whether the watershed control program is adequate to meet this goal. The Agency must determine the adequacy of a watershed control program based on the following:~~
    - A) ~~The comprehensiveness of the watershed review;~~
    - B) ~~The effectiveness of the supplier's program to monitor and control detrimental activities occurring in the watershed; and~~
    - C) ~~The extent to which the water supplier has maximized land ownership or controlled the land use within the watershed. At a minimum, the watershed control program must do the following:~~
      - i) ~~Characterize the watershed hydrology and land ownership;~~
      - ii) ~~Identify watershed characteristics and activities that may have an adverse effect on source water quality; and~~
      - iii) ~~Monitor the occurrence of activities that may have an adverse effect on source water quality.~~
  - 2) ~~The supplier must demonstrate through ownership or written agreements with landowners within the watershed that it can control all human activities that may have an adverse impact on the microbiological quality of the source water. The supplier must submit an annual report to the Agency that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in~~

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~~the future and describes how the supplier expects to address them. For systems using a groundwater source under the direct influence of surface water, an approved wellhead protection program may be used, if appropriate, to meet these requirements.~~

- e) ~~On-Site Inspection. The supplier must be subject to an annual on-site inspection to assess the watershed control program and disinfection treatment process. The Agency must conduct the inspection. A report of the on-site inspection summarizing all findings must be prepared every year. The on-site inspection must demonstrate that the watershed control program and disinfection treatment process are adequately designed and maintained. The on-site inspection must include the following:~~
- ~~1) A review of the effectiveness of the watershed control program;~~
  - ~~2) A review of the physical condition of the source intake and how well it is protected;~~
  - ~~3) A review of the supplier's equipment maintenance program to ensure there is low probability for failure of the disinfection process;~~
  - ~~4) An inspection of the disinfection equipment for physical deterioration;~~
  - ~~5) A review of operating procedures;~~
  - ~~6) A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and~~
  - ~~7) Identification of any improvements that are needed in the equipment, system maintenance, and operation or data collection.~~
- d) ~~Absence of Waterborne Disease Outbreaks. The PWS must not have been identified as a source of a waterborne disease outbreak, or if it has been so identified, the system must have been modified sufficiently to prevent another such occurrence.~~
- e) ~~Total Coliform MCL. The supplier must comply with the MCL for total coliforms in Section 611.325(a) and (b) and the MCL for E. coli in Section 611.325(c) at least 11 months of the 12 previous months that the system served~~

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~~water to the public, on an ongoing basis, unless the Agency determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water.~~

- f) ~~TTHM. The supplier must comply with the requirements for total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide in Subpart I.~~

~~BOARD NOTE: Derived from 40 CFR 141.71(b).~~

(Source: Repealed at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.233 Treatment Technique Violations**

A supplier violates a treatment technique requirement if not applying required filtration when the Agency requires in a SEP.

- a) ~~A supplier is in violation of a treatment technique requirement if the following is true:~~
- 1) ~~Filtration is required because either of the following:~~
    - A) ~~The supplier fails to meet any one of the criteria in Section 611.231 and 611.232; or~~
    - B) ~~The Agency has determined, pursuant to Section 611.211, that filtration is required; and~~
  - 2) ~~The supplier fails to install filtration by the date specified in Section 611.230.~~
- b) ~~A supplier that has not installed filtration is in violation of a treatment technique requirement if either of the following is true:~~
- 1) ~~The turbidity level (measured as specified in Section 611.531(a) and 611.532(b)) in a representative sample of the source water immediately prior to the first or only point of disinfection application exceeds 5 NTU; or~~

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- 2) ~~The system is identified as a source of a waterborne disease outbreak.~~

~~BOARD NOTE: Derived from 40 CFR 141.71(c) (2003).~~

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.240 Disinfection**

- a) ~~This subsection (a) corresponds with the first sentence of 40 CFR 141.72, pertaining to unfiltered system suppliers using a supplier that uses a surface water source and does not providing provide filtration treatment must provide the disinfection treatment specified in Section 611.241. These no longer exist in Illinois. This statement maintains structural consistency with USEPA regulations.~~
- b) ~~This subsection (a) corresponds with the second sentence of 40 CFR 141.72, pertaining to unfiltered system suppliers using a supplier that uses a groundwater source under the direct influence of surface water and does not providing provide filtration treatment must provide disinfection treatment specified in Section 611.241 beginning 18 months after the Agency determines that the groundwater source is under the influence of surface water, unless the Agency has determined that filtration is required. These no longer exist in Illinois. This statement maintains structural consistency with USEPA regulations.~~
- c) ~~Upon determining If the Agency determines that a supplier must apply filtration is required, the Agency may issue, by a SEP requiring, require the supplier to comply with interim disinfection requirements before installing filtration is installed.~~
- d) ~~A supplier using system that uses a surface water source and providing that provides filtration treatment must provide the disinfection treatment specified in Section 611.242 specifies when filtration is installed.~~
- e) ~~A supplier using system that uses a groundwater source under the direct influence of surface water and providing provides filtration treatment must provide the have provided disinfection treatment as specified in Section 611.242 specifies beginning when the supplier installs filtration is installed.~~
- f) ~~Failing Failure to comply with Section 611.242 before the Agency requires in a SEP meet any requirement of the following Sections after the applicable date~~

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~~specified in this Section~~ is a treatment technique violation.

BOARD NOTE: ~~This Section derives~~Derived from 40 CFR 141.72 preamble (2016).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.241 Unfiltered PWSs (Repealed)**

~~Each supplier that does not provide filtration treatment must provide disinfection treatment as follows:~~

- a) ~~The disinfection treatment must be sufficient to ensure at least 99.9 percent (3-log) inactivation of Giardia lamblia cysts and 99.99 percent (4 log) inactivation of viruses, every day the system serves water to the public, except any one day each month. Each day a system serves water to the public, the supplier must calculate the CT<sub>99.9</sub> value from the system's treatment parameters using the procedure specified in Section 611.532(c) and determine whether this value is sufficient to achieve the specified inactivation rates for Giardia lamblia cysts and viruses.~~
  - 1) ~~If a system uses a disinfectant other than chlorine, the system may demonstrate to the Agency, through the use of an Agency approved protocol for on-site disinfection challenge studies or other information, that CT<sub>99.9</sub> values other than those specified in Appendix B, Tables 2.1 and 3.1 or other operational parameters are adequate to demonstrate that the system is achieving minimum inactivation rates required by this subsection (a).~~
  - 2) ~~The demonstration must be made by way of a SEP application.~~
- b) ~~The disinfection system must have either of the following:~~
  - 1) ~~Redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system; or~~
  - 2) ~~Automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 mg/l of RDC in the water. If the Agency~~

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~~determines, by a SEP, that automatic shut-off would cause unreasonable risk to health or interfere with fire protection, the system must comply with subsection (b)(1).~~

- e) ~~The RDC in the water entering the distribution system, measured as specified in Sections 611.531(b) and 611.532(e), cannot be less than 0.2 mg/l for more than four hours.~~
- d) ~~RDC in the Distribution System~~
- 1) ~~The RDC in the distribution system, measured as total chlorine, combined chlorine or chlorine dioxide, as specified in Sections 611.531(b) and 611.532(f), cannot be undetectable in more than 5 percent of the samples each month for any two consecutive months that the system serves water to the public. Water in the distribution system with HPC less than or equal to 500/ml, measured as specified in Section 611.531(a), is deemed to have a detectable RDC for purposes of determining compliance with this requirement. Thus, the value "V" in the following formula cannot exceed 5 percent in one month, for any two consecutive months.~~

$$V = \frac{100(c + d + e)}{(a + b)}$$

where the terms mean the following:

- a= ~~Number of instances where the RDC is measured;~~
- b= ~~Number of instances where the RDC is not measured, but HPC is measured;~~
- e= ~~Number of instances where the RDC is measured but not detected and no HPC is measured;~~
- d= ~~Number of instances where the RDC is measured but not detected, and where the HPC is greater than 500/ml; and~~
- e= ~~Number of instances where the RDC is not measured and HPC is greater than 500/ml.~~



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- 2) ~~Subsection (d)(1) does not apply if the Agency determines, under Section 611.213, that a supplier has no means for having a sample analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by Section 611.531(a) and that the supplier is providing adequate disinfection in the distribution system.~~

~~BOARD NOTE: Derived from 40 CFR 141.72(a).~~

(Source: Repealed at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.242 Filtered PWSs**

Each supplier ~~providing that provides~~ filtration treatment must provide disinfection treatment ~~as follows~~:

- a) The disinfection treatment must ~~sufficiently be sufficient to~~ ensure that the ~~system's~~ total treatment processes ~~of that system~~ achieve at least 99.9 percent (3-log) inactivation or removal of *Giardia lamblia* cysts and at least 99.99 percent (4-log) inactivation or removal of viruses.
- b) The RDC in the water entering the distribution system, measured as ~~Sections specified in Section~~ 611.531(b) and 611.533(b) ~~specify~~, cannot be less than 0.2 mg/ℓ for more than four hours.
- c) RDC in the Distribution System
- 1) The RDC in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as ~~Sections specified in Section~~ 611.531(b) and 611.533(c) ~~specify~~, cannot be undetectable in more than 5 percent of the samples ~~the supplier collects~~ each month, for any two consecutive months ~~during which that~~ the system serves water to the public. Water in the distribution system with HPC less than or equal to 500/ml, measured as ~~specified in~~ Section 611.531(a) ~~specifies~~, is deemed to have a detectable RDC for ~~complying purposes of determining compliance~~ with this requirement. Thus, the value "V" in ~~this the following~~ formula cannot exceed 5 percent in one month, for any two consecutive months:-

$$V = \frac{100(c + d + e)}{(a + b)}$$

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$$V = 100(c + d + e)/(a + b)$$

where ~~the terms mean the following:~~

- a = ~~The number~~Number of ~~times when the supplier measured~~instances where the RDC ~~is measured~~;
  - b = ~~The number~~Number of ~~times when the supplier did not measure~~instances where the RDC ~~is not measured~~, but ~~did measure~~ HPC ~~is measured~~;
  - c = ~~The number~~Number of ~~times when the supplier measured but did not detect~~instances where ~~the RDC is measured but did not measure~~detected and no HPC ~~is measured~~;
  - d = ~~The number~~Number of ~~times when the supplier measured but did not detect~~instances where ~~the RDC is measured but not detected~~, and ~~where~~ HPC is greater than 500/ml; and
  - e = ~~The number~~Number of ~~times when the supplier did not measure~~instances where ~~the RDC is not measured~~ and HPC is greater than 500/ml.
- 2) Subsection (c)(1) does not apply if the Agency determines, under Section 611.213, that a supplier has no means for having a sample analyzed for HPC by a certified laboratory under the requisite time and temperature conditions ~~specified by~~ Section 611.531(a) ~~specifies~~ and that the supplier ~~provides~~ ~~is providing~~ adequate disinfection in ~~its~~ ~~the~~ distribution system.

BOARD NOTE: ~~This Section derives~~Derived from 40 CFR 141.72(b).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### Section 611.250 Filtration

A supplier ~~using that uses~~ a surface water source or a groundwater source under the direct influence of surface water, ~~and does not meet all of the criteria in Sections 611.231 and 611.232 for avoiding filtration~~, must provide ~~treatment consisting of~~ both disinfection ~~treatment~~, as ~~specified in~~ Section 611.242 ~~specifies~~, and filtration treatment ~~complying that complies~~ with ~~the requirements of~~ subsection (a), (b), (c), (d), or (e) within 18 months after the ~~Agency issues a SEP requiring the supplier to apply~~ ~~failure to meet any one of the criteria for avoiding~~ filtration ~~treatment in Sections 611.231 and 611.232~~. ~~Failing~~ ~~Failure to~~ ~~apply~~ filtration treatment before the time the Agency provides in a SEP ~~violates~~ ~~meet any requirement after the date specified in this~~

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~~introductory paragraph is~~ a treatment technique ~~violation~~.

- a) Conventional Filtration Treatment or Direct Filtration
- 1) For a ~~supplier's~~ system using conventional filtration or direct filtration, the turbidity level of ~~its representative samples of the system's~~ filtered water must ~~not exceed~~ ~~be less than or equal to~~ 0.5 NTU in ~~more than five~~ ~~at least~~ 95 percent of the measurements ~~taken~~ each month ~~under Sections,~~ ~~measured as specified in Section~~ 611.531(a) and 611.533(a). ~~However,~~ ~~except that~~ if the Agency ~~issues~~ ~~determines,~~ by a SEP ~~determining,~~ that the ~~supplier can achieve~~ ~~system is capable of achieving~~ at least 99.9 percent removal or inactivation of Giardia lamblia cysts at some turbidity level higher than 0.5 NTU in at least 95 percent of the measurements ~~taken~~ each month, the Agency must substitute this higher turbidity limit ~~in the SEP for~~ ~~that system~~. However, ~~in no case may~~ the Agency ~~must not~~ approve a turbidity limit ~~allowing that allows~~ more than 1 NTU in more than five percent of the samples ~~taken~~ each month ~~under Sections,~~ ~~measured as specified in Section~~ 611.531(a) and 611.533(a).
  - 2) The turbidity level of representative samples of a ~~supplier's~~ system's filtered water must ~~never at no time~~ exceed 5 NTU.
  - 3) A supplier serving ~~at least~~ 10,000 or more persons must ~~comply with~~ ~~meet~~ the turbidity ~~in requirements of~~ Section 611.743(a).
  - 4) A supplier ~~serving that serves~~ fewer than 10,000 people must ~~comply with~~ ~~meet~~ the turbidity ~~requirements~~ in Section 611.955.
- b) Slow Sand Filtration
- 1) For a ~~supplier's~~ system using slow sand filtration, the turbidity level of ~~its representative samples of the system's~~ filtered water must ~~not exceed~~ ~~be less than or equal to~~ 1 NTU in ~~more than five~~ ~~at least~~ 95 percent of the measurements ~~taken~~ each month ~~under,~~ ~~measured as specified in~~ Section 611.531(a) and 611.533(a). ~~However,~~ ~~except that~~ if the Agency ~~issues~~ ~~determines,~~ by a SEP ~~determining,~~ that there is no significant interference with disinfection at a higher level, the Agency must substitute the higher turbidity limit ~~in the SEP for~~ ~~that system~~.

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- 2) The turbidity ~~level of representative samples~~ of a ~~supplier's system's~~ filtered water must ~~never at no time~~ exceed 5 NTU, measured as ~~Sections specified in Section~~ 611.531(a) and 611.533(a) ~~specify~~.
- c) Diatomaceous Earth Filtration
- 1) For a ~~supplier's system~~ using diatomaceous earth filtration, the turbidity level of ~~its representative samples of the system's~~ filtered water must ~~not exceed~~ ~~be less than or equal to~~ 1 NTU in ~~more than five~~ ~~at least 95~~ percent of the measurements ~~taken~~ each month ~~under Sections, measured as specified in Section~~ 611.531(a) and 611.533(a).
- 2) The turbidity level of representative samples of a ~~supplier's system's~~ filtered water must ~~never at no time~~ exceed 5 NTU ~~under Sections, measured as specified in Section~~ 611.531(a) and 611.533(a).
- d) Other Filtration Technologies. ~~The Agency may issue a SEP allowing a~~ supplier ~~to may~~ use a filtration technology not ~~included listed~~ in subsections (a) through (c) if ~~the supplier it~~ demonstrates, ~~by a SEP application, to the Agency,~~ using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment ~~complying with that meets the requirements of~~ Section 611.242, consistently achieves 99.9 percent removal or inactivation of *Giardia lamblia* cysts and 99.99 percent removal or inactivation of viruses. ~~Subsection (b) applies to~~ For a supplier ~~making that makes~~ this demonstration, ~~the requirements of subsection (b) apply~~. A supplier serving 10,000 or more persons must ~~comply with meet the requirements for other filtration technologies in~~ Section 611.743(b). A supplier ~~serving that serves~~ fewer than 10,000 people must ~~comply with meet the requirements for other filtration technologies in~~ Section 611.955.

BOARD NOTE: ~~This Section derives~~ ~~Derived~~ from 40 CFR 141.73.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.261 Unfiltered PWSs: Reporting and Recordkeeping**

~~A supplier that uses a surface water source and does not provide filtration treatment must report monthly to the Agency the information specified in this Section, unless the Agency has determined that filtration is required, in which case the Agency must, by a SEP, specify~~

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~~alternative reporting requirements, as appropriate, until filtration is in place.~~ A supplier ~~using that~~ uses a groundwater source under the direct influence of surface water ~~and does not~~ providing provide filtration treatment must report monthly to the Agency the information ~~specified in~~ this Section specifies beginning six months after the Agency determines that the groundwater source is under the direct influence of surface water. ~~When, unless~~ the Agency ~~issues a SEP requiring has determined that~~ filtration treatment and specifying appropriate is ~~required, in which case the Agency must, by a SEP, specify~~ alternative reporting requirements, ~~as appropriate,~~ until the supplier applies filtration treatment is in place.

- a) ~~The supplier must report source~~ Source water quality information ~~must be reported~~ to the Agency within ten days after the end of each month the supplier system serves water to the public. ~~The information~~ Information that must include certain information ~~be reported includes the following:~~
- 1) The cumulative number of months for which the supplier reports results ~~are reported.~~
  - 2) The number of fecal or total coliform samples, whichever the supplier are analyzed during the month (if a supplier system monitors for both, the supplier needs only report fecal coliform samples ~~coliforms must be reported~~), the dates the supplier collected the samples ~~of sample collection~~, and the dates when the turbidity level exceeded 1 NTU.
  - 3) The number of samples during the month that had equal to or fewer than 20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever the supplier are analyzed.
  - 4) The cumulative number of fecal or total coliform samples, whichever the supplier are analyzed, during the previous six months the supplier system served water to the public.
  - 5) The cumulative number of samples that had equal to or fewer than 20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever the supplier are analyzed, during the previous six months the supplier system served water to the public.
  - 6) The percentage of samples that had equal to or fewer than 20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever the supplier are analyzed, during the previous six months the

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suppliersystem served water to the public.

- 7) The maximum turbidity level the supplier measured during the month, the dates of occurrence for any measurements ~~exceeding that exceeded~~ 5 NTU, and the dates the supplier reported the occurrences ~~were reported~~ to the Agency.
  - 8) For the first 12 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU. ~~After, and after~~ one year of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 12 months the suppliersystem served water to the public.
  - 9) For the first 120 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU. ~~After, and after~~ ten years of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 120 months the suppliersystem served water to the public.
- b) The supplier must report the Agency disinfection ~~Disinfection~~ information ~~specified in~~ Section 611.532 ~~specifies must be reported to the Agency~~ within ten days after the end of each month the suppliersystem serves water to the public. The information the supplier reports ~~Information that~~ must include specific information ~~be reported includes the following~~:
- 1) For each day, the lowest RDC measurement ~~of RDC~~ in mg/ℓ in water entering the distribution system.
  - 2) The date and duration of each period during which ~~when~~ the RDC in water entering the distribution system fell below 0.2 mg/ℓ and the supplier notified ~~when~~ the Agency ~~was notified~~ of the occurrence.
  - 3) The daily RDCs (in mg/ℓ) and disinfectant contact times (in minutes) the supplier used for calculating the CT values.
  - 4) If the supplier uses chlorine ~~is used~~, the daily pH measurements ~~of pH~~ of disinfected water following each point of chlorine disinfection.
  - 5) The daily water temperature measurements ~~(of water temperature in~~

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~~°C)degrees C~~ following each point of disinfection.

- 6) The daily  $CT_{calc}$  and  $A_i$  values for each disinfectant measurement or sequence and the sum of all  $A_i$  values (B) before or at the first customer.
- 7) The daily determination ~~of~~ whether disinfection achieves adequate Giardia cyst and virus inactivation, i.e., whether  $A_i$  is at least 1.0. If the supplier uses a disinfectant or, where disinfectants other than chlorine are used, the supplier must use other indicator conditions that the Agency determines appropriate, under Section 611.241(a)(1), determines are appropriate, are met.
- 8) SpecificThe following information on the supplier's distribution system samples the supplier took fortaken in the distribution system in conjunction with total coliform monitoring under SectionsSection 611.240 through 611.242:
  - A) The numberNumber of times when the supplier measuredinstances where the RDC is measured;
  - B) The numberNumber of times when the supplier did not measureinstances where the RDC is not measured but did measure HPC is measured;
  - C) The numberNumber of times the supplier measured but did not detectinstances where the RDC is measured but not detected and measuredno HPC is measured;
  - D) The numberNumber of times when the supplier measured but did not detectinstances where no the RDC<sub>2</sub> is detected and thewhere HPC is greater than 500/ml;
  - E) The numberNumber of times when the supplier did not measureinstances where the RDC<sub>2</sub> is not measured and the HPC is greater than 500/ml;
  - F) For the current and previous month the suppliersystem served water to the public, the value of "V" in the following formula:

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$$V = \frac{100(c + d + e)}{(a + b)}$$

where ~~the terms mean the following:~~

- a = ~~The value~~Value in subsection (b)(8)(A);
  - b = ~~The value~~Value in subsection (b)(8)(B);
  - c = ~~The value~~Value in subsection (b)(8)(C);
  - d = ~~The value~~Value in subsection (b)(8)(D); and
  - e = ~~The value~~Value in subsection (b)(8)(E).
- G) ~~Subsections~~~~The requirements of subsections~~ (b)(8)(A) through (b)(8)(F) do not apply if the Agency determines, under Section 611.213, that a ~~supplier~~system has no means for having a sample analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by Section 611.531(a) and that the supplier ~~adequately provides~~is providing adequate disinfection in the distribution system.
- 9) A ~~supplier needs~~system need not report the data ~~listed in~~subsections (b)(1) and (b)(3) through (b)(6) ~~require~~; if all data ~~listed in~~subsections (b)(1) through (b)(8) ~~require~~ remain on file at the system, and the Agency ~~issues~~determines, by a SEP ~~making specific determinations, that the following is true:~~
- A) ~~That the supplier~~The system has submitted ~~to the Agency~~all the information ~~required by~~subsections (b)(1) through (b)(8) ~~require to the Agency~~ for at least 12 months; and
  - B) ~~That the supplier needs~~The Agency has determined that the system ~~is~~ not ~~required to~~ provide filtration treatment.
- c) By October 10 of each year, ~~every supplier~~each system must provide ~~to the Agency~~ a report ~~to the Agency summarizing~~that summarizes its compliance with all watershed control program requirements ~~specified~~in Section 611.232(b).
- d) By October 10 of each year, ~~every supplier~~each system must provide ~~to the Agency~~ a report ~~to the Agency~~ on the on-site inspection ~~the supplier~~ conducted during that year under Section 611.232(c), unless ~~the Agency conducted~~ the on-



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site inspection ~~was conducted by the Agency~~. If the Agency conducted the inspection ~~was conducted by the Agency~~, the Agency must provide a copy of its report to the supplier.

- e) Reporting Health Threats
- 1) ~~Upon Each system, upon~~ discovering that a waterborne disease outbreak occurred that is potentially attributable to ~~its that~~ water system ~~has occurred, a supplier~~ must report that occurrence to the Agency as soon as possible, but no later than by the end of the next business day.
  - 2) If at any time the turbidity exceeds 5 NTU, the ~~suppliersystem~~ must consult with the Agency as soon as practical, but no later than 24 hours after the supplier knows of the exceedance ~~is known, in accordance with the public notification requirements~~ under Section 611.903(b)(3).
  - 3) If at any time the RDC falls below 0.2 mg/ℓ in the water entering the distribution system, the ~~suppliersystem~~ must notify the Agency as soon as possible, but no later than by the end of the next business day. The ~~suppliersystem also~~ must also notify the Agency by the end of the next business day whether or not the supplier restored the RDC ~~was restored~~ to at least 0.2 mg/ℓ within four hours.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.75(a).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.262 Filtered PWSs: Reporting and Recordkeeping**

A supplier ~~using that uses~~ a surface water source or a groundwater source under the direct influence of surface water ~~that and~~ provides filtration treatment must monthly report specific information monthly to the Agency ~~the information specified in this Section~~.

- a) The supplier must report turbidity~~Turbidity~~ measurements ~~that as required by~~ Section 611.533(a) ~~requires must be reported~~ within ten days after the end of each month the supplier serves water to the public. The report information that must include specific information~~be reported includes the following~~:
- 1) The total number of filtered water turbidity measurements the supplier

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~~took taken~~ during the month.

- 2) The number and percentage of filtered water turbidity measurements ~~the supplier took taken~~ during the month that are less than or equal to the turbidity limits ~~specified in~~ Section 611.250 ~~specifies~~ for the filtration technology ~~the supplier uses~~ being used.
  - 3) The date and value of any turbidity measurements ~~the supplier took taken~~ during the month that exceed 5 NTU.
- b) ~~The supplier must report the disinfection~~ Disinfection information ~~specified in~~ Section 611.533 ~~specifies must be reported~~ to the Agency within ten days after the end of each month the supplier serves water to the public. ~~The report~~ Information ~~that~~ must ~~include specific information~~ be reported includes the following:
- 1) For each day, the lowest ~~RDC~~ measurement (~~of RDC~~ in mg/ℓ) in water entering the distribution system.
  - 2) The date and duration of each period ~~during which~~ when the RDC in water entering the distribution system fell below 0.2 mg/ℓ and when ~~the supplier notified~~ the Agency ~~was notified~~ of the occurrence.
  - 3) ~~Specific~~ The following information on the samples ~~the supplier took taken~~ in the distribution system ~~for in conjunction with~~ total coliform monitoring under Sections 611.240 through 611.242:
    - A) ~~The number~~ Number of ~~times when the supplier measured~~ instances where the RDC ~~is measured~~;
    - B) ~~The number~~ Number of ~~times when the supplier did not measure~~ instances where the RDC ~~is not measured~~ but ~~did measure~~ HPC ~~is measured~~;
    - C) ~~The number~~ Number of ~~times when the supplier measured but did not detect~~ instances where the RDC ~~is measured~~ but ~~did~~ not ~~measure~~ detected and ~~no~~ HPC ~~is measured~~;
    - D) ~~The number~~ Number of ~~times when the supplier measured but did not detect~~ the instances where ~~no~~ RDC ~~is detected~~ and ~~the~~ where

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HPC is greater than 500/ml;

- E) ~~The number~~ Number of times when the supplier did not measure instances where the RDC ~~is not measured~~ and HPC is greater than 500/ml;
- F) For the current and previous month the supplier serves water to the public, the value of "V" in the following formula:

$$V = \frac{100(c + d + e)}{(a + b)}$$

where ~~the terms mean the following:~~

- a = ~~The value~~ Value in subsection (b)(3)(A);  
 b = ~~The value~~ Value in subsection (b)(3)(B);  
 c = ~~The value~~ Value in subsection (b)(3)(C);  
 d = ~~The value~~ Value in subsection (b)(3)(D); and  
 e = ~~The value~~ Value in subsection (b)(3)(E).

- G) Subsections (b)(3)(A) through (b)(3)(F) do not apply if the Agency determines, under Section 611.213, that a supplier has no means for having a sample analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by Section 611.531(a) and that the supplier adequately provides ~~is providing adequate~~ disinfection in the distribution system.

c) Reporting Health Threats

- 1) ~~Upon Each supplier, upon~~ Upon discovering that a waterborne disease outbreak occurred that is potentially attributable to ~~its that~~ that water system ~~has occurred, a supplier~~ is known, in accordance with the public notification requirements must report that occurrence to the Agency as soon as possible, but no later than by the end of the next business day.
- 2) If at any time the turbidity exceeds 5 NTU, the supplier must consult with the Agency as soon as practical, but no later than 24 hours the supplier knows of ~~after the exceedance is known, in accordance with the public notification requirements~~ under Section 611.903(b)(3).

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- 3) If at any time the ~~RDC residual~~ falls below 0.2 mg/ℓ in the water entering the distribution system, the supplier must notify the Agency as soon as possible, but no later than by the end of the next business day. The supplier ~~also~~ must also notify the Agency by the end of the next business day whether or not the supplier restored the ~~residual was restored~~ to at least 0.2 mg/ℓ within four hours.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.75(b).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.276 Recycle Provisions**

- a) Applicability. A Subpart B system supplier ~~employing that employs~~ conventional filtration or direct filtration treatment ~~and~~ that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must comply with meet the requirements in subsections (b) through (d).
- b) Reporting. A supplier must notify the Agency in writing if the supplier recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must minimally include, ~~at a minimum,~~ the information ~~specified in~~ subsections (b)(1) and (b)(2) specify, as follows:
  - 1) A plant schematic showing the origin of all recycled flows ~~that are recycled~~ (including spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport these fluids~~them~~, and the location where the supplier reintroduces these fluids~~they are re-introduced~~ back into the treatment plant.
  - 2) The typical~~Typical~~ recycle flow in gallons per minute (gpm), the highest ~~observed~~ plant flow the supplier observed~~experienced~~ in the previous year (gpm), design flow for the treatment plant (gpm), and the Agency-approved operating capacity for the plant if the Agency makes this~~has made such a~~ determination.
- c) Treatment Technique Requirement. Any supplier recycling that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of the supplier's existing

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conventional filtration or direct filtration system, as defined in Section 611.101, or at an alternative location approved by a permit issued by the Agency.

- d) Recordkeeping. The supplier must collect and retain on file the recycle flow information ~~specified in~~ subsections (d)(1) through (d)(6) specify for review and evaluation by the Agency, ~~as follows~~:
- 1) A copy of the recycle notification and information the supplier submitted to the Agency~~State~~ under subsection (b).
  - 2) A list of all recycle flows and the frequency with which the supplier returns them~~they are returned~~.
  - 3) The average and maximum backwash flow rate through the filters and the average and maximum ~~duration of the~~ filter backwash process duration in minutes.
  - 4) The typical filter run length and a written summary of how filter run length is determined.
  - 5) The type of treatment the supplier provides~~provided~~ for the recycle flow.
  - 6) Data on the physical dimensions of the equalization or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and the frequency at which the supplier removes solids~~are removed~~, if applicable.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.76.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART C: USE OF NON-CENTRALIZED TREATMENT DEVICES

**Section 611.280 Point-of-Entry Devices**

- a) A supplier~~Suppliers~~ may use point-of-entry devices to comply with an MCL~~MCLs~~ only while complying with~~if they meet the requirements of~~ this Section.

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- b) ~~The supplier is responsible~~~~It is the responsibility of the supplier~~ to operate and maintain the point-of entry treatment system.
- c) The supplier must develop a monitoring plan before installing point-of-entry devices ~~to comply~~~~are installed for compliance~~.
- 1) Point-of-entry devices must ~~protect human~~~~provide~~ health ~~equivalently~~~~protection equivalent~~ to central water treatment. "Equivalently Equivalent" means that the water would meet all NPDWRs~~NPDWR~~ and ~~would~~ be of acceptable quality similar to water distributed by a well-operated central treatment plant.
  - 2) In addition to the VOCs, the supplier's monitoring must include physical measurements and observations ~~like the~~~~such as~~ total flow treated and mechanical condition of the treatment equipment.
  - 3) The Agency must approve any useUse of point-of-entry devices ~~in~~~~must be approved by~~ a SEP ~~granted by the Agency~~.
- d) ~~The supplier must properly apply effective~~~~Effective~~ technology ~~must be properly applied~~ under an Agency-approveda plan, ~~approved by the Agency~~ and the supplier must maintain the microbiological safety of the water ~~must be maintained~~.
- 1) The Agency must require adequate performance certification ~~of performance~~, field testing, and rigorous engineering design review of the point-of-entry devices; (if not included in the certification process), ~~a rigorous engineering design review of the point of entry devices~~.
  - 2) The design and application of the point-of-entry devices must consider the tendency for increased~~increase in~~ heterotrophic bacteria concentrations in water treated with activated carbon. The Agency may issue~~require~~, by a SEP requiring, frequent backwashing, post-contactor disinfection, and HPC monitoring to ensure that nothing compromises the microbiological safety of the water ~~is not compromised~~.
- e) The point-of-entry devices must protect all~~All~~ consumers ~~must be protected~~. Every building connected to the system must have a point-of-entry device installed, maintained, and adequately monitored. The supplier must assure the

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Agency ~~must be assured~~ that every building is subject to treatment and monitoring, and that the rights and responsibilities of the PWS customer convey with title upon sale of ~~the~~ property.

- f) ~~Using~~~~Use of~~ any point-of-entry device must not cause increased corrosion of ~~lead-lead~~ and ~~copper-bearing~~~~copper bearing~~ materials ~~located~~ between the device and the tap that could increase contaminant levels at the tap.

BOARD NOTE: ~~This Section derives~~~~Derived~~ from 40 CFR 141.100 and 142.62(h)(7) ~~(2002)~~.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.290 ~~Use of~~ Point-of-Use Devices or Bottled Water**

- a) ~~A supplier may~~~~Suppliers must~~ not use bottled water to ~~comply~~~~achieve compliance~~ with an MCL.
- b) ~~A supplier may use bottled~~~~Bottle~~ water or point-of-use devices ~~may be used~~ on a temporary basis to avoid an unreasonable risk to ~~human~~ health under ~~an Agency-~~~~issued~~ a SEP ~~granted by the Agency~~.
- c) Any use of bottled water must comply with ~~the substantive requirements of~~ Section 611.130(d), except that the supplier must submit ~~this~~~~its~~ quality control plan ~~to the~~~~for~~ Agency ~~for~~ review as part of its SEP request, rather than ~~to the~~~~for~~ Board ~~for~~ review.

BOARD NOTE: ~~This Section derives~~~~Derived~~ from 40 CFR 141.101.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART D: TREATMENT TECHNIQUES

**Section 611.295 General Requirements**

~~This~~~~The requirements of this~~ Subpart D ~~constitutes~~~~constitute~~ NPDWRs. This Subpart D establishes treatment techniques in lieu of MCLs for specified contaminants.

BOARD NOTE: ~~This Section derives~~~~Derived~~ from 40 CFR 141.110 ~~(2002)~~.

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(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.296 Acrylamide and Epichlorohydrin**

- a) Each supplier must annually certify ~~annually~~ in writing to the Agency that when it uses products containing acrylamide or epichlorohydrin ~~are used~~ in the PWS, the product of monomer level and dose does not exceed the ~~level~~levels specified in subsection (b) specifies. The supplier must compute the product of monomer level and dose ~~are computed as follows~~:

$$P = A \times B$$

Where ~~the terms mean the following~~:

A = Percent by weight of unreacted monomer in the product used;

B = Parts per million by weight of finished water at which the supplier doses ~~the product is dosed~~; and

P = Product of monomer level and dose.

- b) Maximum Product of monomer level and dose ~~is the following~~:
- 1) For acrylamide, P = 0.05 ppm; and
  - 2) For epichlorohydrin, P = 0.20 ppm.
- c) The supplier's certification~~Suppliers' certifications~~ may rely on manufacturers or third parties, as ~~approved by~~ the Agency approves.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.111 ~~(2002)~~.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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

**Section 611.300 State-Only~~Old~~ MCLs for Inorganic Chemical Contaminants**



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- a) The ~~State-only~~ MCLs listed in subsection (b) for inorganic chemical contaminants (IOCs) are additional State requirements. The ~~State-only~~ MCLs apply only to CWS suppliers. The supplier must determine compliance with ~~the State-only~~ MCLs for inorganic chemicals ~~is calculated~~ under Section 611.612.

~~BOARD NOTE: This subsection (a) is an additional State requirement.~~

- b) ~~State-only~~The following are the old MCLs for IOCs:

Contaminant	Level, mg/ℓ
Iron	1.0
Manganese	0.15
Zinc	5.

~~BOARD NOTE: This subsection (b) is an additional State requirement.~~

- c) This subsection corresponds with 40 CFR 141.11(c), marked as reserved by USEPA. This statement maintains structural parity with the federal rules.
- d) Nitrate  
~~A non-CWS~~Non-CWSs may exceed the MCL for nitrate under ~~certain~~the following circumstances:
- 1) The nitrate level must not exceed 20 mg/ℓ;
  - 2) The water must not be available for consumption by~~to~~ children under six months of age;
  - 3) The NCWS supplier complies with~~is meeting~~ the public notification requirements under Section 611.909, including continuous posting ~~of the fact~~ that the nitrate level exceeds 10 mg/ℓ ~~together~~ with the potential health effects of exposure;
  - 4) The supplier ~~will~~ annually notifies~~notify~~ local public health authorities and the Department of Public Health of ~~the~~ nitrate levels exceeding~~that exceed~~ 10 mg/ℓ; and

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- 5) No adverse public health effects result.

BOARD NOTE: ~~This subsection (d) derives~~Derived from 40 CFR 141.11(d). The Department of Public Health regulations may impose a nitrate limitation requirement.~~Those regulations are~~ at 77 Ill. Adm. Code 900.50.

- e) ~~Supplementary conditions apply~~The following supplementary condition applies to the MCLs ~~listed in subsection (b)~~ for iron and manganese in subsection (b):

- 1) ~~A CWS supplier serving~~CWS suppliers that serve a population of ~~1,000+000~~ or fewer; or 300 service connections or fewer; are exempt from the standards for iron and manganese.
- 2) The Agency may ~~issue, by~~ a SEP ~~allowing, allow~~ iron and manganese in excess of the MCL if sequestration ~~tried on an experimental basis~~ proves ~~to be~~ effective on an experimental basis. If sequestration is not effective, the supplier must provide positive iron or manganese reduction treatment, as applicable ~~must be provided~~. A supplier may try experimental use~~Experimental use of~~ a sequestering agent ~~may be tried~~ only if the Agency approves ~~in approved by~~ a SEP.

BOARD NOTE: This subsection (e) is an additional State requirement.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.301 Revised MCLs for Inorganic Chemical Contaminants**

- a) This subsection corresponds with 40 CFR 141.62(a), reserved by USEPA. This statement maintains structural consistency with USEPA rules.
- b) The MCLs in the following table apply to CWSs. Except for fluoride, the MCLs also apply to NTNCWSs. The MCLs for nitrate, nitrite, and total nitrate and nitrite also apply to transient non-CWSs.

Contaminant	MCL	Units
Antimony	0.006	mg/l
Arsenic	0.010	mg/l

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Asbestos	7	MFL
Barium	2	mg/l
Beryllium	0.004	mg/l
Cadmium	0.005	mg/l
Chromium	0.1	mg/l
Cyanide (as free CN <sup>-</sup> )	0.2	mg/l
Fluoride	4.0	mg/l
Mercury	0.002	mg/l
Nitrate (as N)	10	mg/l
Nitrite (as N)	1	mg/l
Total Nitrate and Nitrite (as N)	10	mg/l
Selenium	0.05	mg/l
Thallium	0.002	mg/l

BOARD NOTE: See Section 611.300(d) for an elevated nitrate level for non-CWSs. USEPA removed and reserved the MCL for nickel on June 29, 1995, at 60 Fed. Reg. 33932, as a result of a judicial order in Nickel Development Institute v. EPA, No. 92-1407, and Specialty Steel Industry of the U.S. v. Browner, No. 92-1410 (D.C. Cir. Feb. 23 & Mar. 6, 1995), while retaining the contaminant, analytical methodology, and detection limit entries/listings for this contaminant.

- c) USEPA identifies specific treatment technologies~~has identified the following~~ as BAT for achieving compliance with the IOC MCLs~~MCL for the IOCs identified in subsection (b)~~, except for fluoride:

Contaminant	BATs
Antimony	C/F RO
Arsenic (BATs for As <sup>V</sup> . Pre-oxidation may be required to convert As <sup>III</sup> to As <sup>V</sup> .)	AAL C/F IX LIME RO ED O/F ( <del>to Fe</del> obtain high removals, the iron to arsenic ratio must be at least 20:1)

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Asbestos	C/F DDF CC
Barium	IX LIME RO ED
Beryllium	AA C/F IX LIME RO
Cadmium	C/F IX LIME RO
Chromium	C/F IX LIME, <del>BAT</del> (for Cr <sup>III</sup> only) RO
Cyanide	IX RO ALK Cl <sub>2</sub>
Mercury	C/F, <del>BAT</del> (only if influent Hg concentrations less than or equal to 10 µg/l) GAC LIME, <del>BAT</del> (only if influent Hg concentrations less than or equal to 10 µg/l) RO, <del>BAT</del> (only if influent Hg concentrations less than or equal to 10

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	µg/ℓ
Nickel	IX LIME RO
Nitrate	IX RO ED
Nitrite	IX RO
Selenium	AAL C/F, <del>BAT</del> (for Se <sup>IV</sup> only) LIME RO ED
Thallium	AAL IX

## Abbreviations

AAL	Activated alumina
ALK Cl <sub>2</sub>	Alkaline chlorination (pH ≥ 8.5)
C/F	Coagulation/filtration (not BAT for a system <del>having that has</del> fewer than 500 service connections)
CC	Corrosion control
Cl <sub>2</sub>	Oxidation (chlorine)
DDF	Direct and diatomite filtration
ED	Electrodialysis
GAC	Granular activated carbon
IX	Ion exchange
LIME	Lime softening
O/F	Oxidation/filtration
RO	Reverse osmosis
UV	Ultraviolet irradiation

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- d) At 40 CFR 141.62(d) ~~(2016)~~, USEPA identified the ~~following as the~~ affordable technology, treatment technique, or other means available to systems serving 10,000 persons or fewer for achieving compliance with the ~~MCL maximum contaminant level~~ for arsenic:

Small System Compliance Technologies (SSCTs)<sup>1</sup> for Arsenic<sup>2</sup>

Small system compliance technology	Affordable for listed small system categories <sup>3</sup>
Activated alumina (centralized)	All size categories
Activated alumina (point-of-use) <sup>4</sup>	All size categories
Coagulation/filtration <sup>5</sup>	<del>501 to 3,300</del> 501-3,300 persons, <del>3,301 to 10,000</del> 3,301-10,000 persons
Coagulation-assisted microfiltration	<del>501 to 3,300</del> 501-3,300 persons, <del>3,301 to 10,000</del> 3,301-10,000 persons
Electrodialysis reversal <sup>6</sup>	<del>501 to 3,300</del> 501-3,300 persons, <del>3,301 to 10,000</del> 3,301-10,000 persons
Enhanced coagulation/filtration	All size categories
Enhanced lime softening (pH >10.5)	All size categories
Ion exchange	All size categories
Lime softening <sup>5</sup>	<del>501 to 3,300</del> 501-3,300 persons, <del>3,301 to 10,000</del> 3,301-10,000 persons
Oxidation/filtration <sup>7</sup>	All size categories
Reverse osmosis (centralized) <sup>6</sup>	<del>501 to 3,300</del> 501-3,300 persons, <del>3,301 to 10,000</del> 3,301-10,000 persons
Reverse osmosis (point-of-use) <sup>4</sup>	All size categories

<sup>1</sup> Section 1412(b)(4)(E)(ii) of ~~the federal~~ SDWA (42 USC 300g-1(b)(4)(E)(ii)) specifies that SSCTs must be affordable and technically feasible for a small system supplier.

<sup>2</sup> SSCTs for As<sup>V</sup>. Pre-oxidation may be required to convert As<sup>III</sup> to As<sup>V</sup>.

<sup>3</sup> ~~The federal~~ SDWA specifies three categories of small system suppliers: (1) those serving 25 or more, but fewer than 501 persons, (2) those serving more than 500 but fewer than 3,301 persons, and (3) those serving more than 3,300 but fewer than 10,001 persons. 42 U.S.C. 300g-1(b)(4)(E)(ii).

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- 4 When a supplier uses POU or POE devices ~~are used~~ for compliance, the supplier must provide programs to ensure proper long-term operation, maintenance, and monitoring ~~must be provided by the water supplier~~ to ensure adequate performance.
- 5 A supplier will not likely install this technology ~~Unlikely to be installed~~ solely for arsenic removal. This technology may ~~May~~ require pH adjustment to optimal range to obtain ~~if~~ high removals ~~are needed~~.
- 6 This technology rejects ~~Technologies reject~~ a large volume of water and ~~may water~~ ~~may~~ not be appropriate for areas where water quantity is ~~may be~~ an issue.
- 7 To obtain high removals using this technology, the iron to arsenic ratio must be at least 20:1.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.62 ~~(2016)~~.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.310 State-Only Maximum Contaminant Levels (MCLs) for Organic Chemical Contaminants**

The following are State-only MCLs for organic chemical contaminants. These ~~The~~ State-only MCLs ~~for organic chemical contaminants in this Section~~ apply to all CWSs. A supplier must calculate compliance ~~They are additional State requirements. Compliance with these~~ the State-only MCLs in subsections (a) and (b) under ~~is calculated pursuant to~~ Subpart O ~~of this Part~~.

Contaminant	MCL (mg/ℓ)
Aldrin	0.001
DDT	0.05
Dieldrin	0.001
Heptachlor	0.0001
Heptachlor epoxide	0.0001
2,4-D	0.01

BOARD NOTE: This Section originally ~~Originally~~ derived from 40 CFR 141.12 (1992); USEPA removed the last entries from ~~entry in~~ subsections (a) and (b) and marked them reserved at 57 Fed. Reg. 31838 (July 17, 1992). USEPA entirely removed ~~all of~~ 40 CFR 141.12 and marked it "reserved" at 71 Fed. Reg. 388 (Jan. 4, 2006). USEPA's ~~USEPA added another listing of~~ organic chemical MCLs are now at 40 CFR 141.61, which corresponds with Section 611.311 ~~(2006)~~. Different MCLs for heptachlor ~~Heptachlor~~, heptachlor epoxide, and 2,4-D

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appear in both this Section and ~~in~~ Section 611.311, ~~with a different MCL in each Section~~. The heptachlor, heptachlor epoxide, and 2,4-D MCLs in this Section are Illinois limitations that are more stringent than the federal requirements. However, detection of these contaminants or violation of ~~the~~ their federally-derived revised ~~MCLs in~~ Section 611.311 ~~MCLs~~ imposes more stringent monitoring, reporting, and notice requirements.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.311 Revised MCLs for Organic Chemical Contaminants**

- a) Volatile Organic Chemical Contaminants. The ~~following~~ MCLs for ~~volatile organic chemical contaminants (VOCs)~~ apply to CWS suppliers and NTNCWS suppliers:-

CAS No.	Contaminant	MCL (mg/ℓ)
71-43-2	Benzene	0.005
56-23-5	Carbon tetrachloride	0.005
95-50-1	o-Dichlorobenzene	0.6
106-46-7	p-Dichlorobenzene	0.075
107-06-2	1,2-Dichloroethane	0.005
75-35-4	1,1-Dichloroethylene	0.007
156-59-2	cis-1,2-Dichloroethylene	0.07
156-60-5	trans-1,2-Dichloroethylene	0.1
75-09-2	Dichloromethane (methylene chloride)	0.005
78-87-5	1,2-Dichloropropane	0.005
100-41-4	Ethylbenzene	0.7
108-90-7	Monochlorobenzene	0.1
100-42-5	Styrene	0.1
127-18-4	Tetrachloroethylene	0.005
108-88-3	Toluene	1
120-82-1	1,2,4-Trichlorobenzene	0.07
71-55-6	1,1,1-Trichloroethane	0.2
79-00-5	1,1,2-Trichloroethane	0.005
79-01-6	Trichloroethylene	0.005
75-01-4	Vinyl chloride	0.002
1330-20-7	Xylenes (total)	10

~~BOARD NOTE: See the definition of "initial compliance period" at Section~~



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- b) USEPA ~~identifies~~ ~~has identified, as indicated below~~, granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OX) as BAT for achieving compliance with the MCLs for ~~volatile organic chemical contaminants (VOCs)~~ and ~~synthetic organic chemical contaminants (SOCs)~~ in subsections (a) and (c), as indicated:-

CAS No.	Contaminant	MCL (mg/l)
15972-60-8	Alachlor	GAC
116-06-3	Aldicarb*	GAC
1646-87-4	Aldicarb sulfone*	GAC
1646-87-3	Aldicarb sulfoxide*	GAC
1912-24-9	Atrazine	GAC
71-43-2	Benzene	GAC, PTA
50-32-8	Benzo(a)pyrene	GAC
1563-66-2	Carbofuran	GAC
56-23-5	Carbon tetrachloride	GAC, PTA
57-74-9	Chlordane	GAC
94-75-7	2,4-D	GAC
75-99-0	Dalapon	GAC
96-12-8	Dibromochloropropane	GAC, PTA
95-50-1	o-Dichlorobenzene	GAC, PTA
106-46-7	p-Dichlorobenzene	GAC, PTA
107-06-2	1,2-Dichloroethane	GAC, PTA
156-59-2	cis-1,2-Dichloroethylene	GAC, PTA
156-60-5	trans-1,2-Dichloroethylene	GAC, PTA
75-35-4	1,1-Dichloroethylene	GAC, PTA
75-09-2	Dichloromethane	PTA
78-87-5	1,2-Dichloropropane	GAC, PTA
103-23-1	Di(2-ethylhexyl)adipate	GAC, PTA
117-81-7	Di(2-ethylhexyl)phthalate	GAC
88-85-7	Dinoseb	GAC
85-00-7	Diquat	GAC
145-73-3	Endothall	GAC
72-20-8	Endrin	GAC
106-93-4	Ethylene dibromide (EDB)	GAC, PTA
100-41-4	Ethylbenzene	GAC, PTA

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1071-53-6	Glyphosate	OX
76-44-8	Heptachlor	GAC
1024-57-3	Heptachlor epoxide	GAC
118-74-1	Hexachlorobenzene	GAC
77-47-3	Hexachlorocyclopentadiene	GAC, PTA
58-89-9	Lindane	GAC
72-43-5	Methoxychlor	GAC
108-90-7	Monochlorobenzene	GAC, PTA
23135-22-0	Oxamyl	GAC
87-86-5	Pentachlorophenol	GAC
1918-02-1	Picloram	GAC
1336-36-3	Polychlorinated biphenyls (PCB)	GAC
122-34-9	Simazine	GAC
100-42-5	Styrene	GAC, PTA
1746-01-6	2,3,7,8-TCDD	GAC
127-18-4	Tetrachloroethylene	GAC, PTA
108-88-3	Toluene	GAC
8001-35-2	Toxaphene	GAC
120-82-1	1,2,4-trichlorobenzene	GAC, PTA
71-55-6	1,1,1-Trichloroethane	GAC, PTA
79-00-5	1,1,2-trichloroethane	GAC, PTA
79-01-6	Trichloroethylene	GAC, PTA
93-72-1	2,4,5-TP	GAC
75-01-4	Vinyl chloride	PTA
1330-20-7	Xylene	GAC, PTA

\*See the Board note ~~at appended to~~ the end of this Section.

- c) Synthetic Organic Chemical Contaminants. ~~The following~~ MCLs for SOCs apply to CWS and NTNCWS suppliers:-

CAS Number	Contaminant	MCL (mg/l)
15972-60-8	Alachlor	0.002
116-06-3	Aldicarb*	0.002
1646-87-4	Aldicarb sulfone*	0.002
1646-87-3	Aldicarb sulfoxide*	0.004
1912-24-9	Atrazine	0.003
50-32-8	Benzo(a)pyrene	0.0002

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1563-66-2	Carbofuran	0.04
57-74-9	Chlordane	0.002
94-75-7	2,4-D	0.07
75-99-0	Dalapon	0.2
96-12-8	Dibromochloropropane	0.0002
103-23-1	Di(2-ethylhexyl)adipate	0.4
117-81-7	Di(2-ethylhexyl)phthalate	0.006
88-85-7	Dinoseb	0.007
85-00-7	Diquat	0.02
145-73-3	Endothall	0.1
72-20-8	Endrin	0.002
106-93-4	Ethylene dibromide	0.00005
1071-53-6	Glyphosate	0.7
76-44-8	Heptachlor	0.0004
1024-57-3	Heptachlor epoxide	0.0002
118-74-1	Hexachlorobenzene	0.001
77-47-4	Hexachlorocyclopentadiene	0.05
58-89-9	Lindane	0.0002
72-43-5	Methoxychlor	0.04
23135-22-0	Oxamyl (Vydate)	0.2
87-86-5	Pentachlorophenol	0.001
1918-02-1	Picloram	0.5
1336-36-3	Polychlorinated biphenyls (PCBs)	0.0005
122-34-9	Simazine	0.004
1746-01-6	2,3,7,8-TCDD (Dioxin)	0.00000003
8001-35-2	Toxaphene	0.003
93-72-1	2,4,5-TP	0.05

\* See the Board note ~~at appended to~~ the end of this Section.

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.61. ~~See the definition of "initial compliance period" at Section 611.101.~~ More stringent state MCLs for 2,4-D, heptachlor, and heptachlor epoxide appear at Section 611.310. ~~See the Board Note at that provision.~~ In 40 CFR 141.6(g), USEPA postponed the effectiveness of the MCLs for aldicarb, aldicarb sulfone, and aldicarb sulfoxide until it took further action on those MCLs. See 40 CFR 141.6(g) and 57 Fed. Reg. 22178 (May 27, 1992). USEPA ~~later has since~~ stated that it ~~anticipated anticipates~~ taking no action until 2005 on a federal national primary drinking water regulation (NPDWR) applicable to the aldicarbs. 68 Fed. Reg. 31108 (May 27, 2003). In 2005, USEPA indicated no projected date for final action on

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the aldicarbs. See 70 Fed. Reg. 27501, 671 (May 16, 2005). An entry for the aldicarbs last appeared in USEPA's Spring 2007 semiannual regulatory agenda, indicating no projected dates for further action. See 72 Fed. Reg. 23156, 97 (Apr. 30, 2007); see also 72 Fed. Reg. 70118, 23 (Dec. 10, 2007) (the first USEPA regulatory agenda that included no entry for the aldicarbs). As of early 2022, USEPA did not include the aldicarbs among the NPDWRs on its webpage. USEPA, Ground Water and Drinking Water, National Primary Drinking Water Regulations (www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations; accessed February 16, 2022). While the Board must maintain entries for aldicarb, aldicarb sulfoxide, and aldicarb sulfone to maintain consistency with the literal text of the federal rulesregulations (see Sections 7.2 and 17.5 of the Act; 42 USC 300g-2; 40 CFR 142.10), the Board intends that no aldicarb requirements apply in Illinois until after USEPA adopts such requirements, and the Board removeshas removed this statement.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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

- a) Bromate and Chlorite. MCLsThe maximum contaminant levels (MCLs) for bromate and chlorite apply to CWS and NTNCWS suppliersare 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 identifieshas identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the MCLs maximum contaminant levels for bromate and chlorite identified in this subsection (a):

Disinfection Byproduct	Best Available Technology
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Bromate	<del>Controlling the</del> <u>Control of</u> ozone treatment process to reduce <u>bromate</u> production <del>of bromate</del> .
Chlorite	<del>Controlling the</del> <u>Control of</u> treatment processes to reduce disinfectant demand and <del>controlling the control of</del> disinfection treatment processes to reduce disinfectant levels.

b) TTHM and HAA5

- 1) ~~A supplier must comply with the~~ Compliance Dates. The Subpart Y MCLs for TTHM and HAA5 ~~must be complied with~~ as a locational running annual average at each monitoring location, ~~as required in~~ Section 611.970(c) requires.

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

- 2) USEPA ~~identifies~~ has identified the following as the best available technology, treatment techniques, or other means available for ~~complying~~ achieving compliance with the ~~MCLs~~ maximum contaminant levels for TTHM and HAA5 ~~identified in this subsection (b)(2)~~ for any supplier ~~disinfecting~~ 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.

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- 3) USEPA ~~identifies~~ ~~has identified the following as~~ the best available technology, treatment techniques, or other means available for achieving compliance with the ~~MCLs~~ ~~maximum contaminant levels for~~ TTHM and HAA5 ~~identified in this subsection (b)(2)~~ for consecutive systems, ~~which only apply 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 <del>serving that</del> <del>serves</del> 10,000 or more persons: Improved distribution system and storage tank management to reduce residence time, plus <del>using the use of</del> chloramines for disinfectant residual maintenance; or Any system <del>serving that</del> <del>serves</del> fewer than 10,000 persons: Improved distribution system and storage tank management to reduce residence time.

BOARD NOTE: ~~This Section derives~~ ~~Derived~~ from 40 CFR 141.64.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.313 Maximum Residual Disinfectant Levels (MRDLs)**

- a) ~~Maximum residual disinfectant levels (MRDLs) are as follows:~~

Disinfectant residual	MRDL (mg/ℓ)
Chlorine	4.0 (as Cl <sub>2</sub> )
Chloramines	4.0 (as Cl <sub>2</sub> )
Chlorine dioxide	0.8 (as ClO <sub>2</sub> )

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- b) Compliance ~~Dates~~
- 1) CWSs and NTNCWSs. A Subpart B system ~~supplier serving 10,000 or more persons~~ must comply with this Section. ~~A Subpart B system supplier serving fewer than 10,000 persons or a supplier using only groundwater not under the direct influence of surface water must comply with this Section.~~
  - 2) Transient NCWSs. A Subpart B system supplier ~~serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant~~ must comply with the chlorine dioxide MRDL. ~~A Subpart B system supplier serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant or a supplier using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL.~~
- c) ~~USEPA identified~~~~The following are identified as~~ the best technology, treatment techniques, or other means available for ~~complying~~~~achieving compliance~~ with the ~~MRDLs~~~~maximum residual disinfectant levels identified~~ in subsection (a): ~~controlling~~~~control of~~ treatment processes to reduce disinfectant demand and ~~controlling~~~~control of~~ disinfection treatment processes to reduce disinfectant levels.

BOARD NOTE: ~~This Section derives~~~~Derived~~ from 40 CFR 141.65.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.325 Microbiological Contaminants**

- a) A supplier ~~complies~~~~is in compliance~~ with the MCL for E. coli for samples taken under ~~the provisions of~~ Subpart AA, unless any of the conditions identified in subsections (a)(1) through (a)(4) occur. For purposes of ~~the~~ public notification ~~under requirements in~~ Subpart V, ~~violating~~~~violation of~~ the MCL may pose an acute risk to human 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.

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- 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.
- b) A supplier must determine whether it complies~~compliance~~ with the MCL for E. coli in subsection (a) for each month during~~in~~ which the supplier must~~it is required to~~ monitor for total coliforms.
- c) USEPA identified the best technology, treatment techniques, or other means for complying~~BATs for achieving compliance~~ with the MCL maximum contaminant level for E. coli in subsection (a)~~are the following~~:
- 1) Protecting~~Protection of~~ wells from fecal contamination by appropriate placement and construction;
  - 2) Maintaining~~Maintenance of~~ RDC throughout the distribution system;
  - 3) Properly maintaining~~Proper maintenance of~~ the distribution system, including appropriate pipe replacement and repair procedures, main flushing programs, properly operating and maintaining~~proper operation and maintenance of~~ storage tanks and reservoirs, cross-connection control, and continually maintaining~~continual maintenance~~ positive water pressure in all parts of the distribution system;
  - 4) Filtering~~Filtration~~ and disinfecting~~disinfection of~~ surface water, as ~~described in~~ Subparts B, R, X, and Z ~~describe of this Part~~, or disinfecting~~disinfection of~~ groundwater, as ~~described in~~ Subpart S describes, using a strong oxidant like~~oxidants such as~~ chlorine, chlorine dioxide, or ozone; or
  - 5) For a systems~~systems~~ using groundwater, complying~~compliance~~ with permit conditions the Agency imposes under the USEPA-endorsed Illinois wellhead protection program,~~after USEPA approves the program~~.

BOARD NOTE: USEPA requires the supplier to comply with the wellhead protection program. The Illinois program operates under the Illinois Groundwater Protection Act [415 ILCS 55]. USEPA endorses,



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rather than approves, state groundwater protection programs and periodically reviews those programs with the state. See “Final Comprehensive State Ground Water Protection Program Guidance”, USEPA, Office of the Administrator, doc. no. EPA 100-R-93-001 (Dec. 1992), at p. 1-21 & n. 4 and pp. 1-24 and 1-25. Section 18(a) of the Act requires a supplier to operate under an Agency-issued permit. Other Illinois laws may require a permit for a groundwater well. E.g., Sections 5(b), 5b, and 6 of the Illinois Water Well Construction Code [415 ILCS 30/5(b), 5b, and 6].

- d) USEPA ~~identifies~~~~has identified, pursuant to 42 USC 300g-1,~~ the technology, treatment techniques, or other means ~~available identified~~ in subsection (c) as affordable technology, treatment techniques, or other means available to suppliers serving 10,000 or fewer people for achieving compliance with the ~~MCL~~ for E. coli MCL in subsection (a).

BOARD NOTE: This subsection (a) derives from 40 CFR 141.63(c), subsection (b) derives from the second sentence of 40 CFR 141.63(d), and subsection (c) derives from 40 CFR 141.63(e). The Board omits 40 CFR 141(a) and (b) and the first sentence of 40 CFR 141.63(d), which expired by their own terms March 31, 2016~~Derived from 40 CFR 141.63 (2016).~~

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.330 Maximum Contaminant Levels for Radionuclides**

- a) This subsection (a) corresponds with 40 CFR 141.66(a), marked reserved by USEPA. This statement maintains structural consistency with USEPA rules.
- b) MCL for Combined Radium-226 and -228. The ~~MCL~~maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/ℓ. ~~Determine the~~The combined radium-226 and radium-228 value ~~is determined by~~ adding the addition ~~of~~ the results of ~~analyses~~the analysis for radium-226 and ~~the analysis for~~ radium-228.
- c) MCL for Gross Alpha Particle Activity (Excluding Radon and Uranium). The ~~MCL~~maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/ℓ.

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- d) MCL for Beta Particle and Photon Radioactivity
- 1) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year (mrem/year).
  - 2) Except for the radionuclides ~~listed in this subsection (d)(2) the following table, the supplier must calculate~~ the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents ~~must be calculated~~ on the basis of two liters per day drinking water intake, using the 168-hour data list ~~set forth~~ in NBS Handbook 69 (63), incorporated by reference in Section 611.102. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ must not exceed 4 mrem/year.

Average Annual Concentrations Assumed to Produce  
a Total Body or Organ Dose of 4 mrem/yr

Radionuclide	Critical organ	pCi per liter
1. Tritium	Total body	20,000
2. Strontium-90	Bone <del>marrow</del> <u>Marrow</u>	8

BOARD NOTE: USEPA listed factors for computing the fraction of the maximum permissible annual dose of 4 mrem/yr based on NBS Handbook 69 (63) in Appendix I (Comparison of Derived Values of Beta and Photon Emitters), Implementation Guidance for Radionuclides, EPA 816-F-00-002. The units for these factors allow direct use for computing fractional dose equivalents. The Board listed USEPA's conversion factors in Table R, including information about applying the factors to determine compliance.

- e) MCL for Uranium. The ~~MCL maximum contaminant level~~ for uranium is 30 µg/l.
- f) ~~Compliance Dates for~~ Combined Radium-226 and -228, Gross Alpha Particle Activity, Gross Beta Particle and Photon Radioactivity, and Uranium. A CWS supplier must comply with the MCLs listed in subsections (b) through (e), ~~determining and compliance as must be determined in accordance with the requirements of~~ Subpart Q provides.

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- g) Best Available Technologies (BATs) for Radionuclides. USEPA ~~identifies~~ has identified the technologies indicated in the following table as the BAT for complying/achieving compliance with the MCLs for combined radium-226 and -228, uranium, gross alpha particle activity, and beta particle and photon radioactivity:-

BAT for Combined Radium-226 and Radium-228, Uranium, Gross Alpha Particle Activity, and Beta Particle and Photon Radioactivity

Contaminant	BAT
<del>1.</del> Combined radium-226 and radium-228	Ion exchange, reverse osmosis, lime softening-
<del>2.</del> Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/ filtration-
<del>3.</del> Gross alpha particle activity (excluding <del>radon</del> Radon and <del>uranium</del> Uranium)	Reverse osmosis-
<del>4.</del> Beta particle and photon radioactivity	Ion exchange, reverse osmosis-

- h) Small Systems Compliance Technologies List for Radionuclides. USEPA identified BAT as affordable technology, treatment techniques, or other means available to suppliers serving 10,000 or fewer people for achieving compliance with the radionuclides MCLs in subsections (a) through (e).

List of Small Systems Compliance Technologies for Radionuclides and Limitations to Use

Unit technologies	Limitations (see footnotes)	Operator skill level required <sup>-1</sup>	Raw water quality range and considerations <sup>1</sup>
1. Ion exchange (IE)	(a)	Intermediate	All ground waters-
2. Point of use (POU <sup>2</sup> ) IE	(b)	Basic	All ground waters-

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3.	Reverse osmosis (RO)	(c)	Advanced	Surface waters usually require pre-filtration <del>;</del>
4.	POU <sup>2</sup> RO	(b)	Basic	Surface waters usually require pre-filtration <del>;</del>
5.	Lime softening	(d)	Advanced	All waters <del>;</del>
6.	Green sand filtration	(e)	Basic	
7.	Co-precipitation with Barium sulfate	(f)	Intermediate to <del>advanced</del> <u>Advanced</u>	Ground waters with suitable water quality <del>;</del>
8.	Electrodialysis / electrodialysis reversal		Basic to <del>intermediate</del> <u>Intermediate</u> <del>e</del>	All ground waters <del>;</del>
9.	Pre-formed hydrous Manganese oxide filtration	(g)	Intermediate	All ground waters <del>;</del>
10.	Activated alumina	(a), (h)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency <del>;</del>
11.	Enhanced coagulation/ filtration	(i)	Advanced	Can treat a wide range of water qualities <del>;</del>

<sup>1</sup> National Research Council (NRC). "Safe Water from Every Tap: Improving Water Service to Small Communities", National Academy Press, Washington, D.C. 1997.

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- <sup>2</sup> A POU, or "point-of-use" technology is a treatment device ~~installed~~ at a single ~~consumer's~~ tap ~~used~~ for ~~the purpose of~~ reducing contaminants in drinking water at that ~~one~~ tap. POU devices are typically ~~on~~ ~~ainstalled at~~ ~~the~~ kitchen tap. BOARD NOTE: USEPA refers ~~the reader~~ to the notice of data availability (NODA) at 66 Fed. Reg. 21576 (April 21, 2000) for ~~more~~ details.

## Limitations Footnotes: Technologies for Radionuclides:

- (a) The regeneration solution contains high concentrations of the contaminant ions. ~~A supplier should carefully consider disposal~~ ~~Disposal~~ options ~~should be carefully considered~~ before choosing this technology.
- (b) When ~~a supplier uses~~ POU devices ~~to comply are used for compliance,~~ ~~the~~ ~~supplier must provide~~ programs for long-term operation, maintenance, and monitoring ~~must be provided by water utility~~ to ensure proper performance.
- (c) ~~The supplier should carefully consider reject~~ ~~Reject~~ water disposal options ~~should be carefully considered~~ before choosing this technology.

BOARD NOTE: In corresponding 40 CFR 141.66, Table C, footnote c states in part ~~as follows~~: "See other RO limitations described in the SWTR Compliance Technologies Table." ~~USEPA based~~ Table C ~~was based in significant part~~ on "Table 13. – Technologies for Radionuclides" ~~appearing that appears~~ at 63 Fed. Reg. 42032, 42043 (Aug. 6, 1998). Table 13 refers to "Table 2. – SWTR Compliance Technology Table: Filtration". That Table 2, at 63 Fed. Reg. at 42036, lists the limitations on RO ~~as follows~~:

- <sup>d</sup> Blending (combining treated water with untreated raw water) cannot be practiced at risk of increasing microbial concentrations in finished water.
- <sup>e</sup> Post-disinfection recommended as a safety measure and for residual maintenance.
- <sup>f</sup> Post-treatment corrosion control will be needed prior to distribution.

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- (d) The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for a small surface water ~~systems~~.
- (e) Removal efficiencies can vary depending on water quality.
- (f) This technology may be very limited in application to small systems. Since the process requires static mixing, detention basins, and filtration, it is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.
- (g) This technology is most applicable to small systems that already have filtration in place.
- (h) Handling ~~of~~ chemicals required during regeneration and pH adjustment may be too difficult for small systems without an adequately trained operator.
- (i) Assumes modification ~~of~~ a coagulation/filtration process already in place.

Compliance Technologies by System Size Category  
for Radionuclide NPDWRs

Compliance Technologies<sup>+</sup> for System Size Categories  
(Population Served)

Contaminant	25-500	501-3,300	3,300-10,000
1. Combined radium-226 and radium-228	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9
2. Gross alpha particle activity	3, 4	3, 4	3, 4
3. Beta particle activity and photon activity	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
4. Uranium	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11	1, 2, 3, 4, 5, 10, 11

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Note:

<sup>4</sup>Numbers correspond to ~~the numbered~~ ~~those~~ technologies ~~found listed~~ in the above table, "List of Small Systems Compliance Technologies for Radionuclides and Limitations to Use", ~~set forth above~~.

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.66.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART G: LEAD AND COPPER

**Section 611.350 General Requirements**

## a) Applicability and Scope

- 1) ~~Applicability of and Complying with this Subpart G. This~~ The requirements of this Subpart G and Subpart AG constitute NPDWRs constitute national primary drinking water regulations for lead and copper. This Subpart G and Subpart AG apply ~~apply~~ to all community water systems (CWSs) and non-transient, non-community water systems (NTNCWSs).
  - A) A supplier must comply with this Subpart G beginning no later than October 16, 2024, except as otherwise required by Section 611.351, 622.354, 611.385, 611.386, or 611.360.
  - B) If the Agency issued a SEP before December 16, 2021, that expires on or after October 16, 2024, and the SEP exempts a supplier under any rule in former Subpart G (now redesignated Subpart AG), the supplier must comply with this Subpart G after the SEP expires, regardless of subsection (a)(1)(A). If the SEP expires before October 16, 2024, the supplier must comply with this Subpart G as required by subsection (a)(1)(A).
  - C) The Agency may issue a SEP requiring a supplier to comply with specified rules in this Subpart G before subsection (a)(1)(A) or (a)(1)(B) otherwise requires or as necessary to address issues in a notice the Agency received from USEPA under 40 CFR 142.23 or

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142.30. The SEP must specify the rules in this Subpart G with which the supplier must comply and their counterparts in Subpart AG with which the supplier needs no longer comply. The supplier must comply with the SEP-specified Subpart G rules in lieu of their counterparts in Subpart AG.

BOARD NOTE: This subsection (a)(1) derives from 40 CFR 141.80(a). USEPA's Lead and Copper Rules Revisions (LCRR) apply to all suppliers on December 16, 2021. However, USEPA delays complying with LCRR until October 16, 2024, when any previously granted exemption expires, or as provided otherwise by any of several specified rules for corrosion control treatment; lead service line replacement; public education, supplemental monitoring, and mitigation; monitoring; and reporting (corresponding with 35 Ill. Adm. Code 611.351, 622.354, 611.355, 611.356, or 611.360). Until a supplier must comply with the LCRR, USEPA requires the supplier to comply with subpart I of 40 CFR 141 (2020). This requires the Board to codify two versions of the Lead and Copper Rule: one in Subpart AG, representing the Lead and Copper Rules prior to the LCRR (40 CFR 141 (2020)), and the other in this Subpart G, representing 40 CFR 141 incorporating the LCRR.

- 2) Scope. This Subpart G establishes a treatment technique ~~including that includes~~ requirements for corrosion control treatment, source water treatment, ~~lead service line inventory, replacing~~ lead service ~~lines~~ replacement, public notice, monitoring for lead in schools and child care facilities, and public education. ~~Lead~~ These requirements are triggered, in some cases, by lead and copper action levels and the lead trigger level measured in samples collected at consumers' taps prompt these requirements. The rules in this Subpart G requiring lead sampling in schools and child care facilities and public education apply to all CWS results.
- b) Definitions. For ~~the purposes of only~~ this Subpart G only, this subsection (b) defines certain ~~the following~~ terms ~~have the following meanings~~:
- "Action level" means ~~the computed that~~ concentration of lead or copper in water ~~computed~~ under subsection (c) determining applicability of that determines, in some cases, the treatment requirements ~~under of~~ this Subpart G ~~that a supplier must complete~~. The action level for lead is



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0.015 mg/ℓ, ~~and the.~~ ~~The~~ action level for copper is 1.3 mg/ℓ.

"Aerator" means the device embedded in a water faucet to enhance air flow in the water stream and prevent splashing.

"Child care facility" means a facility providing child care, day care, or early learning services to children under a license issued by a competent State or local agency.

BOARD NOTE: See, e.g., the Child Care Act of 1969 [225 ILCS 10].

"Corrosion inhibitor" means a substance ~~that can reduce~~~~capable of reducing the~~ corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

"Effective corrosion inhibitor residual" means a concentration of corrosion inhibitor in the drinking water sufficient to form a passivating film on the interior walls of ~~a~~ pipe.

"Elementary school" means a school State and local practice classifies as elementary and comprising any span of grades (including pre-school) to grade 8.

"Exceed" ~~or "exceedance", relative as this term is applied~~ to either the lead or the copper action level, means that the 90th percentile concentration level of the ~~supplier's~~ samples the supplier collected during a six-month tap monitoring ~~cycle period~~ is greater than the lead or copper action level ~~for that contaminant~~.

"Fifth-liter tap sample" means a one-liter tap water sample a supplier collects under Section 611.356(b).

"Find-and-fix" means the requirements under this Subpart G that water systems must perform at every tap sampling site yielding a lead result above 15 µg/ℓ.

"First-draw tap~~First draw~~ sample" means the first one-liter sample of tap water a supplier collects under, ~~collected in accordance with~~ Section 611.356(b)(2), ~~that has been standing in plumbing pipes for at least six~~

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~~hours and which is collected without flushing the tap.~~

"Full lead service line replacement" means replacing a lead service line (as well as galvanized service lines requiring replacement) resulting in the entire length of the service line, regardless of service line ownership, complying with Section 611.126 at the time of replacement. A full lead service line replacement includes replacing a service line having only one portion that is lead, like a service line previously subject to a partial lead service line replacement, as long as the entire service line complies with Section 611.126 after the replacement. A full lead service line replacement requires replacing galvanized service lines downstream of a lead service line. A full lead service line replacement could leave a lead service line in place in the ground but out-of-service if using a new non-lead service line replaces the out-of-service lead service line.

"Galvanized requiring replacement" refers to a galvanized service line Section 611.354(a)(4)(B) describes.

BOARD NOTE: This definition derives from 40 CFR 141.84(a)(4)(ii) for a term used in various rules.

"Galvanized service line" means iron or steel piping zinc-dipped to prevent corrosion and rusting.

"Gooseneck, pigtail, or connector" is a short section of flexible piping, typically not exceeding two feet, connecting segments of rigid service piping. Lead goosenecks, pigtails, and connectors are not part of the lead service line, but Section 611.354(c) may require replacing them.

"Large ~~supplier~~system" means a ~~supplier~~water system that regularly ~~servingserves~~ water to more than 50,000 persons.

"Lead service line" means a ~~portion of pipe~~service line made of lead ~~connecting that connects~~ the water main to the building inlet, ~~including any lead pigtail, gooseneck, or other fitting that is connected to such lead line.~~ The water system, property owner, or both may own a lead service line. A galvanized service line is a lead service line if ever downstream of any lead service line or service line of unknown material. If the only lead piping serving a home is a lead gooseneck, pigtail, or connector that is not a galvanized service line that is a lead service line, the service line is not a

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lead service line. Under Section 611.356(a) only, a galvanized service line is not a lead service line.

"Lead status unknown service line" means a service line that not shown to comply with Section 611.126. Physically verifying the material composition is not necessary (for example, copper or plastic) of a service line for its lead status to be identified (e.g., records demonstrating the service line was installed after a municipal, State, or Federal lead ban).  
BOARD NOTE: See the description of "lead status unknown" in Section 611.354(a)(4)(D).

"Lead trigger level" means a particular concentration of lead in water that prompts certain activities under this Subpart G. The trigger level for lead is a concentration of 10 µg/ℓ.

"Maximum permissible concentration" or "MPC" means ~~the~~that concentration of lead or copper ~~in~~for finished water entering the supplier's distribution system, ~~which designated by~~ the Agency ~~designates in~~by a SEP ~~based on that reflects~~ the contaminant removal ~~ability~~capability of the treatment properly operated and maintained.

BOARD NOTE: ~~This definition derives~~Derived from 40 CFR 141.83(b)(4). (See Section 611.353(b)(4)(B).)

~~"Medium-sized system" means a water system that regularly serves water to more than 3,300 up to 50,000 or fewer persons.~~

"Meet" ~~or comply with~~, ~~relating as this term is applied~~ to either the lead or the copper action level, means that the 90<sup>th</sup> percentile ~~concentration level~~ of the supplier's samples collected during a six-month ~~tap~~ monitoring ~~cycle period~~ is less than or equal to the ~~lead or copper~~ action level ~~for that~~ contaminant.

~~"Method detection limit" or "MDL" is as defined at Section 611.646(a). The MDL for lead is 0.001 mg/ℓ. The MDL for copper is 0.001 mg/ℓ, or 0.020 mg/ℓ by atomic absorption direct aspiration method.~~  
BOARD NOTE: ~~Derived from 40 CFR 141.89(a)(1)(iii).~~

"Mid-sized supplier" means a supplier regularly serving water to more than 10,000 persons up to 50,000 persons.

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~~"Monitoring period" means any of the six-month periods of time during which a supplier must complete a cycle of monitoring under this Subpart G.~~

BOARD NOTE: USEPA refers to these as "monitoring periods". The Board uses "six-month monitoring period" to avoid confusion with "compliance period", as used elsewhere in this Part and defined at Section 611.101.

"Multiple-family residence" means a building in which multiple families~~that is currently reside~~used as a multiple-family residence, but not one that is also a "single-family structure".

"90<sup>th</sup> percentile concentration level" means ~~the~~that concentration of lead or copper the supplier computes under subsection (c)(4) using the results of tap water sampling under Section 611.356~~contaminant exceeded by ten percent or fewer of all samples collected during a six-month monitoring period under Section 611.356 (i.e., that concentration of contaminant greater than or equal to the results obtained from 90 percent of the samples). The 90<sup>th</sup> percentile levels for copper and lead must be determined under subsection (c)(3).~~

BOARD NOTE: This definition derives~~Derived~~ from 40 CFR 141.80(c)(4).

"Optimal corrosion control treatment" or "OCCT" means the corrosion control treatment minimizing~~that minimizes~~ the lead and copper concentrations at users' taps while ensuring that the treatment will~~does~~ not cause the water system to violate any national primary drinking water regulations.

"Partial lead service line replacement" means replacing any portion of a lead service line or galvanized requiring replacement service line leaving any length of the lead service line or galvanized requiring replacement service line in service and requiring replacement upon completion of the work. Section 141.84(d) allows partial lead service line replacements, but these do not count towards the mandatory or goal-based lead service line replacement rate under Section 611.384.

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"Pitcher filter" means a non-plumbed water filtration device consisting of a gravity fed water filtration cartridge and a filtered drinking water reservoir that is certified by its manufacturer, importer, or accredited third-party certifying body as complying with NSF/ANSI 53 as in effect on the date of manufacture or import.

BOARD NOTE: NSF/ANSI 53 is the health-based standard for lead and several other contaminants for water filter devices, including pitcher filter-type devices. Identifying a device as certified under NSF/ANSI 53 at the time of purchase is possible. NSF maintains an on-line list of certified devices at [info.nsf.org/Certified/dwtu/listings\\_leadreduction.asp](http://info.nsf.org/Certified/dwtu/listings_leadreduction.asp). See the definition of "accredited third-party certifying body" in 35 Ill. Adm. Code 611.126(b) relating to NSF/ANSI 372.

"Practical quantitation limit" or "PQL" means the lowest concentration of an analyte (substance) ~~a contaminant~~ that a well-operated laboratory can measure with a high degree of confidence that the analyte is present at or above that concentration ~~reliably achieve within specified limits of precision and accuracy during routine laboratory operating conditions.~~ The PQL for lead is 0.005 mg/l. The PQL for copper is 0.050 mg/l.

BOARD NOTE: ~~This definition derives~~ Derived from 40 CFR 141.89(a)(1)(ii) and (a)(1)(iv).

"Pre-stagnation flushing" means opening taps to flush standing water from plumbing before a minimum six-hour stagnation period before lead and copper tap sampling under Subpart G.

"School" means any building or building complex associated with public, private, or charter institutions primarily educating elementary or secondary students.

"Secondary school" means a school comprising any span of grades beginning with the next grade following an elementary or middle school (usually 7, 8, or 9) and ending with or below grade 12. This definition includes both junior high schools and senior high schools.

"Service line sample" means a one-liter sample of water, collected in accordance with Section 611.356(b)(3), that has been standing for at least six hours in a service line.

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"Single-family structure" means a building ~~that was~~ constructed as a residence for a single-family that the occupant residence and which is currently ~~uses~~ used as ~~either a residence or a~~ place of business.

"Small system supplier" or "small CWS supplier" means a CWS serving 10,000 or fewer persons.

BOARD NOTE: A small CWS is a small supplier that is a CWS. This definition derives from the preamble of 40 CFR 141.93. Corresponding Section 611.363 distinguishes a small CWS supplier from an NTNCWS supplier.

"Small ~~supplier system~~" means a supplier water system that regularly ~~serving~~ serves water to ~~10,000~~ 3,300 or fewer persons.

BOARD NOTE: USEPA did not revise its corresponding definition of "small water system" in 40 CFR 141.2 from 3,300 or fewer to 10,000 or fewer persons. This creates an inconsistency the Board corrected.

"Source water monitoring period" means any of the six-month periods during which a supplier must complete source water monitoring under Section 611.358.

BOARD NOTE: The Board added this definition to avoid confusion with "tap sampling period," "tap monitoring cycle", and "water quality monitoring period", as used under this Subpart G, and "compliance period" and "compliance cycle", as used elsewhere in this Part and Section 611.101 defines.

"Supplier not applying corrosion control treatment" means a PWS not fulfilling either of two conditions or purchasing all of its water from a supplier not fulfilling either of two conditions:

Neither the PWS nor the supplier providing its water has Agency-approved optimal corrosion control treatment; or

No other water quality adjustment in either the PWS's or the supplier's treatment train infrastructure includes adjusting pH or alkalinity or adding corrosion inhibitor.

"Tap monitoring cycle" means the term when a supplier must sample taps for lead and copper analyses. The lead and copper concentrations in tap samples determines the tap monitoring cycle, and the frequency can range

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from every six months (i.e., semi-annually) to once every nine years. A supplier semi-annually sampling taps must collect samples no less frequently than every six months, while a supplier annually sampling taps must sample no less frequently than every year. A supplier triennially sampling taps must collect samples no less frequently than every three years, and a supplier sampling taps under an Agency-issued waiver must sample no less frequently than every nine years. The start of each new tap monitoring cycle, with the exception of semi-annual monitoring, must begin on January 1.

BOARD NOTE: This term is equivalent to "tap sampling monitoring period" in 40 CFR 141. "Tap monitoring cycle" describes sampling frequency.

"Tap sampling period" means the period within a tap monitoring cycle when the supplier must collect samples for lead and copper analysis. For a supplier sampling at a reduced frequency, the supplier must sample taps between June and September, unless the Agency issues a SEP approving a different four-month period.

BOARD NOTE: "Tap sampling period" describes when the supplier collects samples.

"Tap sampling protocol" means the instructions a supplier gives to residents or those sampling on the supplier's behalf to sample taps under this Subpart G.

"Water quality monitoring period" means any of the six-month periods during which a supplier must complete a cycle of tap and entry point water quality monitoring under Section 611.357.

BOARD NOTE: The Board added this definition. USEPA refers to these as "monitoring periods". The Board uses "water quality monitoring period" to avoid confusion with "tap sampling period," "tap monitoring cycle", and "source water monitoring period", as used under this Subpart G, and "compliance period" and "compliance cycle", as used elsewhere in this Part and Section 611.101 defines.

"Wide-mouthed bottles" means bottles one liter in volume having a mouth that is at least 55 mm wide.

BOARD NOTE: This subsection (b) derives~~Derived~~ from 40 CFR 141.2.

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- c) Lead Trigger Level and Lead and Copper Action Levels. The supplier determines the lead trigger levels and lead and copper action levels based on tap water samples it collects under Section 141.86 to calculate the 90th percentile concentration and tests using the analytical methods in Section 141.89.
- 1) The supplier exceeds the lead trigger level if the 90th percentile lead concentration subsection (c)(4) determines is greater than 10 µg/l.
- 2) The supplier exceeds the lead action level ~~is exceeded~~ if the 90th percentile lead ~~concentration level~~ is greater than 0.015 mg/l.
- 3) The supplier exceeds the copper action level ~~is exceeded~~ if the 90th percentile copper ~~concentration level~~ is greater than 1.3 mg/l.
- 4) The supplier ~~Suppliers~~ must compute the 90th percentile lead and copper concentrations using the specified procedure ~~levels as follows~~:
- A) Suppliers Not Having Sites with a Lead Service Line and Only Having Tier 3, 4, or 5 Sites Under Section 141.86(a)
- i) The supplier must ~~list~~ List the results of all lead or copper samples ~~it took taken~~ during a ~~tap sampling six-month monitoring~~ period in ascending order, ranging from the sample with the lowest concentration ~~first~~ to the sample with the highest concentration ~~last~~. The supplier must ~~assign~~ Assign each sampling result an ordinal ~~a~~ number, ascending by single integers, ~~assigning beginning with~~ the number 1 for the sample with the lowest contaminant level. The number ~~the supplier assigns assigned~~ to the sample with the highest contaminant level must ~~be equal to~~ the total number of samples ~~the supplier took taken~~.
- ii) To determine the 90th percentile sample, the supplier must ~~multiply~~ Determine the number for the 90th percentile sample by ~~multiplying~~ the total number of samples taken during the ~~four-month tap sampling six-month monitoring~~ period ~~times~~ by 0.9.
- iii) The contaminant concentration in the sample ~~corresponding~~



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with the ordinal number ~~yielded by the calculation in subsection (c)(4)(A)(ii) yields(e)(3)(B)~~ is the 90<sup>th</sup> percentile concentration ~~contaminant level~~.

iv~~iv~~) For ~~a supplier collecting~~ suppliers that collect five samples per four-month tap samplingsix-month monitoring period, the 90<sup>th</sup> percentile concentration is ~~computed by taking~~ the average of the highest and second highest concentrations.

v~~v~~) For a supplier ~~that has been allowed by the Agency~~ allows to collect fewer than five samples ~~underin accordance with Section 611.356(c) or failing to collect five samples, the result for~~ the sample ~~result~~ with the highest concentration is ~~considered~~ the 90<sup>th</sup> percentile concentration ~~value~~.

B) Suppliers Having Enough Sites with a Lead Service Line Identified as Tier 1 or 2 Under Section 141.86(a) to Meet the Minimum Number of Sites Section 141.86(c) Requires

i) The supplier must arrange the results of all lead or copper samples it took at Tier 1 or Tier 2 sites during a tap sampling period in ascending order from the sample with the lowest concentration to the sample with the highest concentration. The supplier must not include sample results from Tier 3, 4, or 5 sites in this calculation. The supplier must assign each sampling result a number, beginning with the number 1 for the sample with the lowest contaminant concentration and ascending by single integers through increasing concentrations. The number assigned to the sample with the highest contaminant concentration must equal the total number of samples the supplier took.

ii) The supplier must multiply the number of samples it took at Tier 1 or Tier 2 sites during the tap sampling period times 0.9.

iii) The 90th percentile concentration is the contaminant concentration in the numbered sample corresponding with

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the number the calculation under subsection (c)(4)(B)(ii) yields.

iv) For a supplier serving fewer than 100 people that collects five samples per tap sampling period, the 90th percentile concentration is the average of the highest and second highest concentration.

v) For a supplier the Agency allows to collect fewer than five samples under Section 141.86(c), or failing to collect five samples, the highest sample concentration is the 90th percentile concentration.

C) Suppliers Having Sites with a Lead Service Line Identified as Tier 1 or 2 Under Section 141.86(a) but Fewer Than the Minimum Number of Sites Section 141.86(c) Requires

i) The supplier must combine the results of all lead or copper samples it took at Tier 1 or Tier 2 sites with a sufficient number of the highest results from Tier 3, 4, or 5 sites to complete the minimum number of sites. The supplier must arrange the combined results in ascending order from the sample with the lowest concentration to the sample with the highest concentration. The supplier must not include sample results from any remaining Tier 3, 4, and 5 sites in this calculation. The supplier must assign each sampling result a number, beginning with the number 1 for the sample with the lowest contaminant concentration and ascending by single integers through increasing concentrations. The number the supplier assigns to the sample with the highest contaminant concentration must equal the total minimum number of sites listed in Section 141.86(c).

ii) The supplier must multiply the number of samples it took at Tier 1 or Tier 2 sites during the tap sampling period times 0.9.

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- iii) The 90th percentile concentration is the contaminant concentration in the numbered sample corresponding with the number the calculation under subsection (c)(4)(C)(ii) yields.
  - iv) For a supplier serving fewer than 100 people that collects five samples per tap sampling period, the 90th percentile concentration is the average of the highest and second highest concentration.
  - v) For a supplier the Agency allows to collect fewer than five samples under Section 611.356(c) or failing to collect five samples, the highest sample concentration is the 90th percentile concentration.
- d) Corrosion Control ~~Treatment~~ Requirements
- 1) Every supplier ~~All suppliers~~ must install and operate corrosion control treatment under Sections 611.351 and 611.352 meeting the definition of optimal corrosion control treatment.
  - 2) Any supplier ~~complying that~~ complies with the applicable corrosion control treatment requirements ~~specified by~~ the Agency specifies under Sections 611.351 and 611.352 is deemed as complying in compliance with ~~the treatment requirement of~~ subsection (d)(1).
  - 3) A small CWS or NTNCWS supplier complying with the applicable small supplier compliance flexibility requirements the Agency specifies under Sections 611.351(a)(3) and 611.353 complies with the treatment requirement in subsection (d)(1).
  - 4) A supplier must notify the Agency in writing under Section 141.90(a)(3) of any upcoming long-term change in water treatment or plan to add a new source as Section 611.360(a)(3) describes. The supplier must not implement a long-term change in water treatment or add a new source until after the Agency reviews and approves the action in a SEP. The SEP may require the supplier to conduct additional monitoring or take other action the Agency deems appropriate to ensure that the supplier maintains minimal levels of corrosion control in its distribution system.

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- e) Source Water ~~Treatment~~ Requirements-
- 1) Any supplier ~~exceeding whose system exceeds~~ the lead or copper action level must implement all applicable source water treatment requirements ~~specified by~~ the Agency ~~specifies~~ under Section 611.353.
  - 2) A supplier planning changes in its source water or making long-term treatment changes must describe the change to the Agency in writing under Sections 611.351(a)(3), 611.356(d)(2)(D), and 611.360(a)(3). The supplier must not implement the change until the Agency reviews and approves the change in a SEP.
- f) Lead Service Line Replacement and Inventory Requirements. A supplier must conduct lead service line replacements as this subsection (f) requires.
- 1) Any supplier whose system exceeds the lead action level subsection (c) specifies after implementation of applicable corrosion control and source water treatment requirements must complete mandatory the lead service line replacement ~~requirements contained in Section 611.354~~. The supplier must conduct lead service line replacement under Section 611.354(g) and must include public education under Section 611.355(a) and (b).
  - 2) A supplier exceeding the lead trigger level subsection (c) specifies must complete goal-based lead service line replacement under Section 611.354(f) and public education under Section 611.355(g) and (h).
  - 3) All suppliers must prepare an inventory of service lines connected to their distribution systems, whether or not the supplier owns or controls the service lines, to identify lead service lines and lead status unknown service lines. The supplier must prepare the inventory under Section 611.354(a).
- g) Public Education and Notification Requirements. Under Section 611.355(d), the supplier must provide ~~notification a consumer notice~~ of the lead tap water monitoring results to the persons served at each tested site (tap) ~~that is tested~~. A CWS supplier must conduct annual outreach to the Illinois Department of Public Health and local health agencies under Section 611.355(i). The supplier must complete additional actions:

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- 1) Any supplier ~~exceeding whose system exceeds~~ the lead action level must implement the public education requirements under Section 611.355.
  - 2) Any supplier exceeding the lead trigger level subsection (c) specifies must notify all customers with a lead service line under Section 611.355(g).
  - 3) Any supplier exceeding the lead action level subsection (c) specifies must notify the public under Subpart V.
  - 4) Any supplier with lead service lines, galvanized service lines needing replacement, or lead status unknown service lines in its inventory, as Section 611.354(a) specifies, must notify all consumers with a lead service line, galvanized service line needing replacement, or a lead status unknown service line under Section 611.355(e).
  - 5) Any supplier failing to reach its lead service line replacement rate goal, as required under Section 611.354(f) must conduct outreach activities in accordance with Section 611.355(h).
- h) Monitoring and Analytical Requirements. ~~A supplier~~Suppliers must complete all tap water monitoring for lead and copper, monitoring for water quality parameters, and source water monitoring for lead and copper, and ~~analyze~~analyses ~~of~~ the monitoring results under this Subpart G ~~as in compliance with~~ Sections 611.356, 611.357, 611.358, and 611.359 require.
- i) Reporting Requirements. ~~A supplier~~Suppliers must report ~~to the Agency~~ any information ~~required by~~ the treatment provisions of this Subpart G and Section 611.360 require to the Agency.
- j) Recordkeeping Requirements. ~~A supplier~~Suppliers must maintain records ~~as in accordance with~~ Section 611.361 requires.
- k) ~~Violating~~Violation of National Primary Drinking Water Regulations. ~~Failing~~Failure to comply with ~~the applicable requirements of~~ this Subpart G, including conditions ~~imposed by~~ the Agency imposes in a SEP, ~~violates~~will constitute a violation of the ~~national primary drinking water regulations for~~ lead ~~and~~ copper NPDWR.

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- 1) Testing in Schools and Child Care Facilities. A supplier must collect samples from all schools and child care facilities within its distribution system under Section 611.362.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.80.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.351 Applicability of Corrosion Control**

- a) Corrosion Control ~~Treatment~~Required. This Section provides when a supplier must complete the corrosion control treatment steps in subsection (d) or (e) to optimize or re-optimize corrosion control treatment based on size, whether the supplier has corrosion control treatment, and whether the supplier exceeded the lead trigger level, lead action level, or copper action level. Suppliers must complete the applicable corrosion control treatment requirements described in Section 611.352 on or before the deadlines set forth in this Section.
- 1) ~~Large Suppliers~~Systems. ~~Each large system supplier (one regularly serving more than 50,000 persons) must complete the corrosion control treatment steps specified in subsection (d), unless it is deemed to have optimized corrosion control under subsection (b)(2) or (b)(3).~~
- A) A large supplier applying corrosion control treatment exceeding either the lead trigger level or copper action level must complete the corrosion control treatment steps subsection (d) specifies.
- B) A large supplier not applying corrosion control treatment with 90th percentile concentration results under Section 611.350(c)(4) exceeding either the lead practical quantitation limit of 0.005 mg/l or the copper action level must complete the corrosion control treatment steps subsection (e) specifies.
- C) The Agency may issue a SEP requiring a large supplier applying corrosion control treatment with 90th percentile concentration results under Section 611.350(c)(4) exceeding the lead practical quantitation limit but not exceeding the lead trigger level or the copper action level to complete the corrosion control treatment steps in subsection (d).

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- 2) Mid-Sized Suppliers (serving >10,000 and ≤50,000 people).
- A) A mid-sized supplier applying corrosion control treatment but exceeding either the lead trigger level or the copper action level must complete the corrosion control treatment steps subsection (d) specifies.
- B) A mid-sized supplier not applying corrosion control treatment but exceeding either the lead or copper action level must complete the corrosion control treatment steps subsection (d) specifies.
- C) A mid-sized supplier not applying corrosion control treatment but exceeding the lead trigger level but not exceeding the lead or copper action level must complete the treatment recommendation step subsection (e)(1) specifies (Step 1). The water system must complete the remaining steps subsection (e) specifies if the supplier subsequently exceeds either the lead or copper action level.
- 3) Small CWS and Non-Transient, Non-Community Water System Suppliers
- A) A small CWS or NTNCWS supplier applying corrosion control treatment but exceeding the lead trigger level or the lead action level and not exceeding the copper action level, must complete the corrosion control treatment steps subsection (d) specifies, if the Agency issues a SEP approving corrosion control treatment as a compliance option under Section 611.363(a).
- B) A small CWS or NTNCWS supplier applying corrosion control treatment but exceeding the copper action level must complete the corrosion control treatment steps subsection (d) specifies.
- C) A small CWS or NTNCWS supplier not applying corrosion control treatment but exceeding the lead action level must complete the corrosion control treatment steps subsection (e) specifies if the Agency issues a SEP approving corrosion control treatment as a compliance option under Section 611.363.

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- D) A small CWS or NTNCWS supplier not applying corrosion control treatment but exceeding the copper action level must complete the corrosion control treatment steps subsection (e) specifies.
- ~~2) Medium-Sized and Small Systems. Each small system supplier (one regularly serving 3,300 or fewer persons) and each medium-sized system (one regularly serving more than 3,300 up to 50,000 persons) must complete the corrosion control treatment steps specified in subsection (e), unless it is deemed to have optimized corrosion control under one of subsections (b)(1), (b)(2), or (b)(3).~~
- b) Suppliers Deemed to Have Optimized Corrosion Control. Subsection (b)(1), (b)(2), or (b)(3) deems a supplier~~A supplier is deemed to have OCCT or re-optimized OCCT if the supplier satisfies the criterion the subsection specifies optimized corrosion control, and is not required to complete the applicable corrosion control treatment steps identified in this Section, if the supplier satisfies one of the criteria specified in subsections (b)(1) through (b)(3). Any such system subsection (b)(1), (b)(2), or (b)(3) deems~~deemed to have OCCT having corrosion control optimized corrosion control under this subsection, and which has treatment in place, must continue operating to operate and maintaining that maintain optimal corrosion control treatment and meeting meet any additional requirements that the Agency determines are appropriate to ensure that the supplier maintains OCCT optimal corrosion control treatment is maintained.
- 1) Small and Mid-Sized Suppliers Not Applying Corrosion Control Treatment. Not exceeding the lead or copper action level during two consecutive six-month tap monitoring cycles and remaining at or below the lead trigger level and copper action level in all subsequent tap monitoring cycles under Section 611.356 deems a small or mid-sized supplier not applying corrosion control treatment to have OCCT.~~Small or Medium-Sized System Meeting Action Levels. A small system or medium-sized system supplier is deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six-month monitoring periods with monitoring conducted in accordance with Section 611.356.~~
- 2) Small and Mid-Sized Suppliers Applying Corrosion Control Treatment and Not Exceeding Levels. Not exceeding the lead or copper action level during two consecutive six-month tap monitoring cycles under Section



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~~611.356 and remaining at or below the lead trigger level and copper action level in all subsequent tap monitoring cycles under Section 611.356 deems a small or mid-sized supplier applying corrosion control treatment to have OCCT. Complying with this Section deems a small or mid-sized supplier applying corrosion control treatment exceeding the lead trigger level but not exceeding the lead or copper action level during two consecutive six-month tap monitoring cycles and remaining at or below the lead and copper action levels in all subsequent tap monitoring cycles the supplier conducts under Section 611.356 to have re-optimized OCCT. If the Agency issued a SEP setting optimal water quality parameters (OWQPs) under subsection (d) or (e), a supplier is not eligible to be deemed as having optimized or re-optimized OCCT under subsection (b). SEP for Equivalent Activities to Corrosion Control. The Agency must, by a SEP, deem any supplier to have optimized corrosion control treatment if it determines that the supplier has conducted activities equivalent to the corrosion control steps applicable under this Section. In making this determination, the Agency must specify the water quality control parameters representing optimal corrosion control in accordance with Section 611.352(f). A water supplier that is deemed to have optimized corrosion control under this subsection (b)(2) must operate in compliance with the Agency designated optimal water quality control parameters in accordance with Section 611.352(g) and must continue to conduct lead and copper tap and water quality parameter sampling in accordance with Sections 611.356(d)(3) and 611.357(d), respectively. A supplier must provide the Agency with the following information in order to support an Agency SEP determination under this subsection (b)(2):~~

- ~~A) The results of all test samples collected for each of the water quality parameters in Section 611.352(c)(3);~~
- ~~B) A report explaining the test methods the supplier used to evaluate the corrosion control treatments listed in Section 611.352(c)(1), the results of all tests conducted, and the basis for the supplier's selection of optimal corrosion control treatment;~~
- ~~C) A report explaining how the supplier has installed corrosion control and how the supplier maintains it to insure minimal lead and copper concentrations at consumer's taps; and~~

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- ~~D) The results of tap water samples collected in accordance with Section 611.356 at least once every six months for one year after corrosion control has been installed.~~
- 3) Results Less Than or Equal to the Practical Quantitation Level (PQL) for Lead. Monitoring results deem aAny supplier ~~is deemed~~ to have optimized or re-optimized OCCT~~corrosion control~~ if the supplier~~it~~ submits results of tap water monitoring undere~~conducted in accordance with~~ Section 611.356 demonstrating and source water monitoring conducted in accordance with Section 611.358 that demonstrate that for two consecutive six-month monitoring periods the difference between the 90th percentile tap water lead concentration level, computed under Section 611.350(c)(3), and the highest source water lead concentration is less than or equal to the lead PQL of 0.005 mg/l and does not exceed the copper action level for two consecutive six-month tap monitoring cycles, and the Agency did not issue a SEP setting OWQPs under subsection (d) or (e). Any water system this subsection (b)(3) deems to have optimized corrosion control must continue tap water monitoring for lead and copper no less frequently than once every three calendar years using the reduced number of sites Section 611.356(c) specifies and collecting the samples at times and locations Section 611.356(d)(4)(E) specifies. Any supplier this subsection (b)(3) deems to have OCCT must continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites Section 611.356(c) specifies and collecting samples at times and locations Section 141.86(d)(4)(E) specifies, practical quantitation level for lead specified in Section 611.359(a)(1)(B)(i).
- A) Those systems whose highest source water lead level is below the method detection limit (MDL) may also be deemed to have optimized corrosion control under this subsection (b) if the 90th percentile tap water lead level is less than or equal to the PQL for lead for two consecutive six-month monitoring periods.
- B) Any water system deemed to have optimized corrosion control in accordance with this subsection (b) must continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in Section 611.356(c) and collecting the samples at times and locations specified in Section

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~~611.356(d)(4)(D).~~

- ~~C) Any water system deemed to have optimized corrosion control under this subsection (b) must notify the Agency in writing under Section 611.360(a)(3) of any upcoming long-term change in treatment or the addition of a new source, as described in that Section. The Agency must review and approve the addition of a new source or any long-term change in water treatment before the addition or long-term change is implemented by the water system.~~
- ~~D) A supplier is not deemed to have optimized corrosion control under this subsection (b), and must implement corrosion control treatment under subsection (b)(3)(E), unless it meets the copper action level.~~
- ~~E) Any supplier triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this subsection must implement corrosion control treatment in accordance with the deadlines in subsection (e). Any such large system supplier must adhere to the schedule specified in that subsection (e) for a medium-sized system supplier, with the time periods for completing each step being triggered by the date the supplier is no longer deemed to have optimized corrosion control under this subsection (b).~~
- c) Completing Corrosion Control Steps for Small and Mid-Sized Suppliers Applying Corrosion Control Treatment~~Suppliers Not Required to Complete Corrosion Control Steps for Having Met Both Action Levels~~
- 1) Any small system or mid-sized medium-sized system supplier not applying corrosion control treatment, otherwise required to complete the corrosion control steps in subsection (e) because it exceeded due to its exceedance of the lead or copper action level, may cease completing the treatment steps after not exceeding either the lead or copper action levels during each of two consecutive six-month tap monitoring cycles under Section 611.356 before beginning Step 3 under subsection (e)(3) or Step 5 under subsection (e)(5). The supplier needs not begin the applicable of Step 3 or Step 5, except that a mid-sized supplier with lead service lines or a small supplier with lead service lines choosing the corrosion control option under Section 611.353 must complete a corrosion control treatment study under subsection (e)(3)(A). A supplier initiating Step 5 may not cease the steps

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~~and must complete all remaining steps in subsections (e)(6) through (e)(8).has fulfilled both of the following conditions:~~

- A) ~~It has met both the copper action level and the lead action level during each of two consecutive six-month monitoring periods conducted under Section 611.356; and~~
- B) ~~The supplier has submitted the results for those two consecutive six-month monitoring periods to the Agency.~~
- 2) ~~A supplier ceasing the steps prior to either Step 3 or Step 5 and later exceeding the lead or copper action level may not cease the steps a second time and that has ceased completing the corrosion control steps under subsection (c)(1) (or the Agency, if appropriate) must complete resume completion of the applicable treatment steps; beginning with the first treatment step that the supplier previously did not complete in its entirety; if the supplier thereafter exceeds the lead or copper action level during any monitoring period.~~
- 3) ~~The Agency may issue a, by SEP requiring, require a supplier to repeat treatment steps the supplier previously completed if the Agency by the supplier where it determines that this is necessary to properly implement the treatment requirements of this Section. Any such SEP must explain the basis for this decision.~~
- 4) ~~A small or mid-sized supplier exceeding the lead or copper action level must The requirement for any small or medium sized system supplier to implement corrosion control treatment steps under in accordance with subsection (e) (including a suppliers systems deemed to have optimized corrosion control under subsection (b)(1)) is triggered whenever any small or medium sized system supplier exceeds the lead or copper action level.~~
- d) ~~Treatment Steps and Deadlines for Suppliers Re-Optimizing OCCT Large Systems. Except as subsection provided in subsections (b)(2) or Section 611.363 provides otherwise and (b)(3), a supplier with corrosion control treatment large system suppliers must complete certain have completed the following corrosion control treatment steps (described in the referenced portions of Sections 611.352, 611.356, and 611.357 the steps describe) before the indicated times:~~

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- 1) ~~Step 1: Initial monitoring (Sections 611.356(d)(1) and 611.357(b)) during two consecutive six-month monitoring periods.~~
  - A) A supplier other than one to which subsection (d)(1)(ii) applies must recommend re-optimized OCCT (Section 611.352(c)) within six months after the end of the tap sampling period during which the supplier exceeds either the lead trigger level or copper action level. The Agency may issue a SEP allowing a supplier to modify its existing corrosion control treatment without a study for a supplier exceeding the lead trigger level but not the lead or copper action level. The Agency must specify re-optimized OCCT within six months after receiving the supplier's treatment recommendation. The supplier must modify its corrosion control treatment to install re-optimized OCCT within six months after the Agency specifies re-optimized OCCT.
  - B) A supplier having lead service lines and exceeding the lead action level must harvest lead pipes from its distribution system, construct flow-through pipe loops, and operate the loops with finished water within one year after the end of the tap sampling period during which the supplier exceeds the lead action level. The supplier must proceed to Step 3 under subsection (d)(3) and conduct the corrosion control studies for re-optimizing OCCT under subsection (d)(3)(A) using the pipe loops.
- 2) ~~Step 2: Corrosion control studies (Section 611.352(e)).~~
  - A) A large supplier must conduct the corrosion control studies for re-optimizing OCCT under subsection (d)(3) (Step 3), unless the system is at or below the lead action level and the Agency issues a SEP modifying the existing corrosion control treatment the Agency specified under subsection (d)(1)(A) (Step 1).
  - B) Within 12 months after the end of the tap sampling period during which a small or mid-sized water system supplier applying corrosion control treatment exceeds the lead trigger level or copper action level, the Agency may issue a SEP requiring the supplier to perform corrosion control studies for re-optimizing OCCT (Section

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611.352(b)(2) or (b)(3)). If the Agency does not require the supplier to perform corrosion control studies, the Agency must issue a SEP specifying re-optimized OCCT (Section 611.352(d)(2)) within the timeframes subsections (d)(2)(B)(i) and (d)(2)(B)(ii) specify.

- i) A mid-sized supplier must perform corrosion control studies for re-optimizing OCCT within 12 months after the end of the tap sampling period during which the supplier exceeded the lead trigger level or copper action level.
- ii) A small supplier must perform corrosion control studies for re-optimizing OCCT within 18 months after the end of the tap sampling period during which the supplier exceeded the lead trigger level or copper action level.

3) ~~Step 3: Agency approval of optimal corrosion control treatment (Section 611.352(d)) by a SEP.~~

- A) A supplier having lead service lines and exceeding the lead action level must complete the corrosion control treatment studies for re-optimizing OCCT within 30 months after the end of the tap sampling period during which the supplier exceeded the lead action level.
- B) If subsection (d)(2) (Step 2) requires the supplier to perform corrosion control studies, the supplier must complete the studies (Section 611.352(c)(2)) within 18 months after the Agency issues a SEP requiring the supplier to conduct the studies.

4) ~~Step 4: Installing optimal corrosion control treatment (Section 611.352(e)).~~

- A) The Agency must issue a SEP designating re-optimized OCCT (subsection (d)(4)) within six months after the supplier completes subsection (e)(3)(A) (Step 3).
- B) If the supplier performed corrosion control studies under subsection (d)(2) (Step 2), the Agency must issue a SEP

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designating re-optimized OCCT (Section 611.352(d)(2) or (d)(4)) within six months after the supplier completes subsection (d)(3)(B) (Step 3).

- 5) ~~Step 5: Completing follow-up sampling (Sections 611.356(d)(2) and 611.357(e)).~~
    - A) A large supplier must complete modifying its corrosion control treatment to have installed re-optimized OCCT within 12 months after the supplier completes subsection (d)(4)(A) (Step 4).
    - B) A small or mid-sized supplier must install re-optimized OCCT (Section 611.352(e)(1)) within 12 months after the supplier completes subsection (d)(4)(B) (Step 4).
  - 6) ~~Step 6 A supplier must complete follow-up sampling (Sections 611.356(d)(2) and 611.357(c)) within 12 months after the supplier completes subsection (d)(5)(A) or (d)(5)(B) (Step 5).:– Agency review of installation of treatment and approval of optimal water quality control parameters (Section 611.352(f)).~~
  - 7) ~~Step 7 The Agency must review the supplier’s installed treatment and designate optimal water quality control parameters (Section 611.352(f)(1)) within six months after completing subsection (d)(6) (Step 6).:– Operating in compliance with the Agency specified optimal water quality control parameters (Section 611.352(g)) and continue to conduct tap sampling (Sections 611.356(d)(3) and 611.357(d)).~~
  - 8) Step 8 The supplier must operate complying with the Agency-designated optimal water quality control parameters (Section 611.352(g)) and continue conducting tap sampling (Section 611.356(d)(3) and monitoring water quality parameters under Section 611.357(d)).
- e) Treatment Steps and Deadlines for Suppliers Not Applying Corrosion Control Treatment Small and Medium Sized System Suppliers. Except as provided in subsection (b) or Section 611.363 provides otherwise, a supplier not applying corrosion control treatments small and medium sized system suppliers must complete certain the following corrosion control treatment steps (~~described in the~~ referenced portions of Sections 611.352, 611.356, and 611.357 the steps describe)

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~~before~~by the indicated ~~time~~periods.

- 1) Step 1: ~~The supplier must conduct initial tap sampling (Sections 611.356(d)(1) and 611.357(b)) until the supplier either exceeds the lead action level or the copper action level or it becomes eligible for reduced monitoring under Section 611.356(d)(4). A supplier exceeding the lead action level or the copper action level must recommend optimal corrosion control treatment (Section 611.352(a)) within six months after the end of the monitoring period during which it exceeds one of the action levels.~~
  - A) A supplier other than one to which subsection (e)(1)(B) or (e)(1)(C) applies must recommend OCCT (Section 611.352(a)(1), (a)(2), (a)(3), or (a)(4)) within six months after the end of the tap sampling period during which the supplier exceeds either the lead trigger level or copper action level.
  - B) A supplier having lead service lines and exceeding the lead action level must harvest lead pipes from its distribution system, construct flowthrough pipe loops, and operate the loops with finished water within one year after the end of the tap sampling period during which the supplier exceeds the lead action level. The supplier must proceed to Step 3 in subsection (e)(3) of this section and use the pipe loops to conduct the corrosion control studies for optimizing OCCT under subsection (e)(3)(A).
  - C) A large supplier subsection (a)(1)(B) directs to perform corrosion control treatment under this subsection (e) must conduct the corrosion control studies for optimizing OCCT under subsection (e)(3) (Step 3).
- 2) Step 2: ~~Within 12 months after the end of the tap sampling monitoring period during which a supplier exceeds the lead action level or the copper action level, if not otherwise required by this rule, the Agency may issue a SEP requiring a~~require the supplier to perform corrosion control studies (Section 611.352(b)). ~~If the Agency does not require the supplier to perform corrosion control such studies, the Agency must issue, by a SEP specifying OCCT, specify optimal corrosion control treatment (under Section 611.352(d)) within the appropriate of the following timeframes subsections (e)(2)(A) and (e)(2)(B) establish.:~~



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- A) For ~~a mid-sized supplier~~medium-sized systems, ~~the supplier must complete corrosion control studies~~ within 18 months after the end of the ~~tap~~ monitoring ~~cycle~~period during which ~~the~~such supplier ~~exceeded~~exceeds the lead ~~trigger~~action level or ~~the~~ copper action level; or
- B) For ~~a small~~ supplier~~systems~~, ~~the supplier must complete corrosion control studies~~ within 24 months after the end of the ~~tap~~ monitoring ~~cycle~~period during which ~~the~~such supplier ~~exceeded~~exceeds the lead ~~trigger~~action level or ~~the~~ copper action level.
- 3) ~~Step 3: If the Agency requires a supplier to perform corrosion control studies under step 2 (subsection (e)(2)), the supplier must complete the studies (Section 611.352(e)) within 18 months after the Agency requires that such studies be conducted.~~
- A) ~~A large supplier having or not having lead service lines and exceeding the lead action level or a small or mid-sized supplier having lead service lines and exceeding the lead action level must complete the corrosion control treatment studies for optimizing OCCT within 30 months after the end of the tap sampling period during which the supplier exceeds the lead action level.~~
- B) ~~If the Agency requires a supplier to perform corrosion control studies under subsection (e)(2) of this section (Step 2), the supplier must complete the studies (Section 611.352(c)(1)) within 18 months after the Agency issues a SEP requiring the supplier to conduct the studies.~~
- 4) ~~Step 4: If the supplier has performed corrosion control studies under step 2 (subsection (e)(2)), the Agency must, by a SEP, approve optimal corrosion control treatment (Section 611.352(d)) within six months after completion of step 3 (subsection (e)(3)).~~
- A) ~~The Agency must issue a SEP designating re-optimized OCCT (Section 611.352(d)(3)) within six months after the supplier completes subsection (d)(3)(A) (Step 3).~~

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- B) If the supplier has performed corrosion control studies under subsection (e)(2) (Step 2), the Agency must issue a SEP designating OCCT (Section 611.352(d)(1)) within six months after subsection (e)(3) (Step 3) is complete.
- 5) ~~Step 5: The supplier must install OCCT~~optimal corrosion control treatment~~ (Section 611.352(e)) within 24 months after the Agency designates OCCT under subsection (e)(2) or (e)(4) (Step 2 or Step 4)~~approves that treatment.~~~~
- 6) ~~Step 6: The supplier must complete follow-up sampling under (Sections 611.356(d)(2)(A) and 611.357(c)) within 1236 months after completing subsection (e)(5) (Step 5)~~the Agency approves optimal corrosion control treatment.~~~~
- 7) ~~Step 7: The Agency must review the supplier's installation of treatment and issue, by a SEP approving, approve optimal water quality control parameters (Section 611.352(f)) within six months after the supplier completes subsection (e)(5) (Step 5)~~completion of step 6 (subsection (e)(6)).~~~~
- 8) ~~Step 8: The supplier must comply operate in compliance with the Agency-approved optimal water quality control parameters (Section 611.352(g)(1)) and continue ~~to conduct~~ tap sampling (SectionSections 611.356(d)(3)) and monitoring water quality parameters (Section 611.357(d)).~~
- f) Treatment Steps and Deadlines for Small CWS and NTNCWS Suppliers Electing Corrosion Control Treatment (CCT) As a Compliance Option under Section 611.363 or As the Agency Requires. A small CWS or NTNCWS supplier selecting the corrosion control treatment option as small supplier compliance flexibility under Section 611.363(a)(2) must complete two steps by the indicated times:
- 1) Step 1. A supplier must recommend the corrosion control treatment option as small supplier compliance flexibility under Section 611.363(a)(2) within six months after the end of the tap sampling period during which the supplier exceeds either the lead trigger level or the lead

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action level. When recommending to the Agency, the supplier must comply with Section 611.382(a)(1).

- 2) Step 2. The Agency must issue a SEP approving the recommendation of corrosion control treatment option as small supplier compliance flexibility or designating an alternative option under Section 611.363(a) within six months after the supplier recommends the option under subsection (f)(1) (Step 1). A supplier the Agency requires to optimize or re-optimize OCCT must follow the schedules in subsection (d) or (e), beginning with Step 3 in subsection (d)(3) or (e)(3), unless the Agency specifies OCCT under the applicable of subsection (d)(2)(B) or (e)(2)(B).

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.81.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.352 Corrosion Control Treatment**

Designating Optimal Corrosion Control Treatment for Systems Optimizing or Re-Optimizing Corrosion Control Treatment. A~~Each~~ supplier must complete the corrosion control treatment requirements in this Section as described below that they apply~~are applicable~~ to thesuch supplier under Section 611.351.

- a) System Recommendation Regarding Corrosion Control Treatment for Suppliers Not Having Lead Service Lines and Suppliers Having Lead Service Lines but Not Exceeding the Lead Action Level
- 1) A supplier that must recommend under Section 611.351(e) one or more of the corrosion control treatments in subsection (c)(1)(A) for the Agency to designate must base its recommendation~~Based~~ on the results of lead and copper tap monitoring and water quality parameter monitoring, ~~small and medium-sized system suppliers exceeding the lead action level or the copper action level must recommend to the Agency installation of one or more of the corrosion control treatments listed in subsection (c)(1) that the supplier believes constitutes optimal corrosion control for its system.~~
- A) A small CWS supplier or NTNCWS supplier exceeding the copper action level and recommending corrosion control treatment to the Agency under Section 611.363(a) must comply with this

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subsection (a)(1).

- B2) The Agency may ~~issue, by~~ a SEP ~~requiring, require~~ the supplier to conduct additional water quality parameter monitoring ~~in accordance with Section 611.357(b)~~ to assist ~~the Agency~~ in reviewing the supplier's recommendation.
- 2) A small CWS supplier or NTNCWS supplier subject to this subsection (a) not applying corrosion control treatment that Section 611.361(f) requires to recommend a small supplier compliance flexibility option under Section 611.363 must base its recommendation on the results of lead tap sampling and water quality parameter monitoring. A supplier not having lead service lines, exceeding the lead action level, and selecting corrosion control under Section 611.363(a)(2) must recommend the Agency designate one or more of the corrosion control treatments in subsection (c)(1) as OCCT for that system.
- 3) A supplier exceeding the lead action level and selecting corrosion control treatment under Section 611.363(a)(2) must recommend that the Agency designate one or more of the corrosion control treatments in subsection (c)(1)(A) as the OCCT for its system. A small or mid-sized supplier exceeding the lead trigger level but not exceeding the lead or copper action level needs not perform a corrosion control study under subsection (c), unless the Agency issues a SEP requiring the supplier to do so.
- 4) A small CWS or NTNCWS supplier applying corrosion control treatment exceeding the lead action level and selecting corrosion control under Section 611.363(a)(2) must recommend designation of one or more of the corrosion control treatments in subsection (c)(2) as OCCT for its system.
- 5) The Agency may issue a SEP waiving subsection (a)(4)'s OCCT-recommendation requirement for a supplier if the SEP requires the supplier to complete a corrosion control study within three months after the end of the tap sampling period during which the supplier exceeded the lead action level. In that case, the supplier must proceed directly to subsection (c) and complete a corrosion control study.
- b) Agency-Required Studies to Identify Initial Optimal of Corrosion Control Treatment and Re-Optimized OCCT Except for Large Suppliers and Small and Mid-Sized Suppliers Having Lead Service Lines and Exceeding the Lead Action

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Level. Certain suppliers must conduct corrosion control treatment studies: large suppliers exceeding the lead action level, large suppliers not applying corrosion control treatment whose 90<sup>th</sup> percentile concentration results exceed either the lead practical quantitation limit of 0.005 mg/l or the copper action level, mid-sized water system suppliers having lead service lines and exceeding the lead action level, and small suppliers having lead service lines and exceeding the lead action level and selecting the corrosion control treatment option under Section 611.363(a).

- 1) The Agency may issue, by a SEP requiring a small, require any small- or mid-sized medium-sized system supplier not applying corrosion control treatment exceeding that exceeds the lead action level or the copper action level to perform corrosion control treatment studies under subsection (c) to identify OCCT optimal corrosion control treatment for the supplier's its system.
  - 2) The Agency may issue a SEP requiring a small or mid-sized supplier not applying corrosion control treatment and exceeding the lead trigger level but not the lead or copper action level to perform corrosion control treatment studies under subsection (c)(1) to identify OCCT for its system. The supplier must install this corrosion control treatment if the supplier subsequently exceeds the lead or copper action level.
  - 3) The Agency may issue a SEP requiring a small or mid-sized supplier applying corrosion control treatment exceeding either the lead trigger level or copper action level to perform corrosion control treatment studies under subsection (c)(2) to identify re-optimized OCCT for its system (i.e., after evaluating re-optimized OCCT).
- c) Performing Corrosion Control Performance of Studies
- 1) A supplier not applying corrosion control treatment conducting corrosion control studies must complete certain actions:
    - A) Any supplier not applying corrosion control treatment performing corrosion control studies must evaluate the effectiveness of each of certain the following treatments, and, if appropriate, combinations of those the following treatments if appropriate, to identify the OCCT optimal corrosion control treatment for its system:

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- ~~iA)~~ Adjusting alkalinity~~Alkalinity~~ and pH ~~adjustment~~;
- ~~B)~~ Calcium hardness adjustment; and
- ~~iiC)~~ Adding an orthophosphate~~The addition of a phosphate-~~ or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective corrosion inhibitor residual concentration in all test ~~tap~~ samples.
- ~~iii)~~ Adding an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 1 mg/l (as PO<sub>4</sub>) in all test samples; and
- ~~iv)~~ Adding an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 3 mg/l (as PO<sub>4</sub>) in all test samples.
- ~~B2)~~ The supplier must evaluate each of the corrosion control treatments using pipe rig/loop tests; metal coupon tests; partial-system tests; or analyses based on documented analogous treatments in other systems of similar size, water chemistry, and distribution system configuration. A large or mid-sized supplier or a small CWS or NTNCWS supplier selecting the corrosion control treatment option under Section 611.363 having lead service lines and exceeding the lead action level must conduct pipe rig/loop studies using harvested lead service lines from its distribution system to assess the effectiveness of corrosion control treatment options on the existing pipe scale. The supplier may use metal coupon tests as a screen to reduce the number of options the supplier evaluates using pipe rig/loop tests to the current conditions and two options.
- ~~C3)~~ The supplier must measure ~~specific~~the following water quality parameters in any tests ~~the supplier conduct~~se~~onducted~~ under this subsection (c) before and after evaluating the corrosion control treatments in subsections (c)(1)(A) and (c)(1)(B)~~listed above~~:

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- ~~iA)~~ Lead;
  - ~~iiB)~~ Copper;
  - ~~iiiC)~~ pH;
  - ~~ivD)~~ Alkalinity;
  - ~~E)~~ Calcium;
  - ~~F)~~ Conductivity;
  - ~~vG)~~ Orthophosphate as PO<sub>4</sub> (when the supplier uses an orthophosphate-based inhibitor containing a phosphate compound is used); and
  - ~~viH)~~ Silicate (when the supplier uses an inhibitor containing a silicate compound is used); and
  - ~~f)~~ Water temperature.
- ~~D4)~~ The supplier must identify all chemical or physical constraints that limit or prohibit using any~~the use of a~~ particular corrosion control treatment; and document those such ~~constraints with at least one of the following:~~
- ~~iA)~~ With data~~Data~~ and documents~~documentation~~ showing that a particular corrosion control treatment ~~has~~ adversely affects~~affected~~ other water treatment processes when another supplier uses that treatment in a system with water having used by another supplier with comparable water quality characteristics; ~~or~~
  - ~~iiB)~~ With data~~Data~~ and documents~~documentation~~ demonstrating that the supplier ~~has~~ previously evaluated~~attempted to evaluate~~ a particular corrosion control treatment, finding either that the treatment is ineffective or ~~that it~~ adversely affects other drinking water quality treatment processes.

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- E5) The supplier must evaluate the effect of the ~~evaluated chemicals used for~~ corrosion control treatment chemicals on other water quality treatment processes. A supplier using coupon studies to screen or pipe loop/rig studies to evaluate treatment options must not exclude treatment strategies from the studies based on the effects the supplier identifies under this Section.
- F6) ~~Based on~~On the basis of an analysis of the data the supplier generated during each evaluation, the supplier must recommend in writing to the Agency ~~the, in writing, that~~ treatment option the corrosion control studies indicate constitutes OCCT~~optimal corrosion control treatment~~ for the supplier's system. The supplier must ~~give~~provide a rationale for its recommendation ~~together, along~~ with all supporting documentation ~~specified in~~ subsections (c)(~~24~~)(A) through (c)(~~25~~)(E) specify.
- 2) A supplier applying corrosion control treatment that must conduct corrosion control studies to determine re-optimized OCCT must complete specific tasks:
- A) The supplier must evaluate the efficacy of certain treatments and appropriate combinations of those treatments to identify the re-optimized OCCT for its system:
- i) Alkalinity or pH adjustment or re-adjustment;
- ii) Adding an orthophosphate- or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective corrosion inhibitor residual concentration in all test samples if the supplier does not already use the inhibitor;
- iii) Adding an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 1 mg/l (PO<sub>4</sub>) in all test samples unless the current inhibitor process already meets this residual; and



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iv) Adding an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain an orthophosphate residual concentration of 3 mg/ℓ (PO<sub>4</sub>) in all test samples unless the current inhibitor process already meets this residual.

B) The supplier must evaluate each of the corrosion control treatments using pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry, and distribution system configurations. If the supplier's system has lead service lines and exceeds the lead action level, the supplier must conduct pipe rig/loop studies using harvested lead service lines from its distribution system to assess the efficacy of corrosion control treatment options on the existing pipe scale. The supplier can use metal coupon tests as a screen to reduce the number of options it evaluates using pipe rig/loops to the current conditions and two options.

C) The supplier must measure specific water quality parameters in any tests conducted under this subsection (c)(2)(C) before and after evaluating the corrosion control treatments in subsections (c)(2)(A) and (c)(2)(B):

i) Lead;

ii) Copper;

iii) pH;

iv) Alkalinity;

v) Orthophosphate as PO<sub>4</sub> (if the supplier uses an orthophosphate-based inhibitor); and

vi) Silicate (if the supplier uses a silicate-based inhibitor).

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- D) The supplier must identify all chemical or physical constraints limiting or prohibiting using a particular corrosion control treatment and document those constraints with certain information:
- i) Data and documents showing that a particular corrosion control treatment adversely affected other drinking water treatment processes when another supplier with comparable water quality characteristics used the treatment. A supplier using coupon studies to screen or pipe loop/rig studies to evaluate treatment options must not exclude treatment strategies from the studies based on the constraints the supplier identifies under this Section; or
  - ii) Data and documents demonstrating that the supplier previously evaluated a particular corrosion control treatment and found that the treatment is ineffective or adversely affects other drinking water quality treatment processes. A supplier using coupon studies to screen or pipe loop/rig studies to evaluate treatment options must not exclude treatment strategies from the studies based on the constraints the supplier identifies under this Section, unless the supplier found the treatment ineffective in a previous pipe loop/rig study.
- E) The supplier must evaluate the effect of the chemicals it uses for corrosion control treatment on other drinking water quality treatment processes. A supplier using coupon studies to screen or pipe loop/rig studies to evaluate treatment options must not exclude treatment strategies from the studies based on the effects the supplier identifies under this Section.
- F) Based on its analysis of the data the supplier generated during each evaluation, the supplier must recommend to the Agency in writing the treatment option that the corrosion control studies indicate constitutes OCCT for its system. The supplier must provide a rationale for its recommendation together with all supporting documentation subsections (c)(1)(A) through (c)(1)(E) specify.
- d) Agency Approval of Optimized and Re-Optimized Corrosion Control Treatment.

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When designating OCCT, the Agency must consider the effects of additional corrosion control treatment on water quality parameters and other water quality treatment processes. The Agency must notify the supplier of the basis for designating OCCT in any SEP it issues under this subsection (d).

- 1) Designating OCCT for a Supplier Applying Corrosion Control Treatment. Considering available information, including applicable studies conducted under subsection (c)(1) or the supplier's recommended corrosion control treatment option, the Agency must issue a SEP designating from among the supplier-recommended corrosion control treatment option, alternative corrosion control treatments from among those in subsection (c)(1)(A), or an applicable alternative small supplier compliance flexibility option under Section 611.363(a).~~Based on consideration of available information including, where applicable, studies performed under subsection (c) and a supplier's recommended treatment alternative, the Agency must, by a SEP, either approve the corrosion control treatment option recommended by the supplier, or deny and require investigation and recommendation of alternative corrosion control treatments from among those listed in subsection (c)(1). When approving optimal treatment, the Agency must consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.~~
- 2) Designation of Re-Optimized OCCT for Suppliers Applying Corrosion Control Treatment. Considering available information, including applicable studies under subsection (c)(2) or the supplier's recommended corrosion control treatment option, the Agency must issue a SEP designating from among the supplier-recommended corrosion control treatment option, alternative corrosion control treatments from among those in subsection (c)(2)(A), or an applicable alternative small supplier compliance flexibility option under Section 611.363(a).~~The Agency must, in any SEP issued under subsection (d)(1), notify the supplier of the basis for this determination.~~
- e) Installing OCCT and Re-Optimizing OCCT~~Installation of Optimal Corrosion Control.~~ Each supplier must properly install and operate the OCCT; throughout its distribution system; that~~optimal corrosion control treatment approved by the~~ Agency approved under subsection (d).

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- f) Agency Review of Treatment and Specification of Optimal Water Quality Control Parameters for OCCT and Re-Optimized OCCT. The Agency must evaluate the results of all lead and copper tap samplingsamples and water quality parameter samplingsamples submitted by the supplier submits and determine whether the supplierit has properly installsinstalled and operatesoperated the OCCT the Agency approvesoptimal corrosion control treatment approved under subsection (d)(1) or (d)(2).
- 1) Upon reviewing the results of the supplier's tap water and water quality parameter monitoring by the supplier, both before and after installing OCCTthe installation of optimal corrosion control treatment, the Agency must issue, by a SEP specifying operating parameters, specify the following:
- A) A minimum value or a-range of values for pH measured at each entry point to the distribution system.;
- B) A minimum pH value for, measured in all tap samples. ThisSuch value must be equal to or greater than 7.0, unless the Agency determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the supplier to optimize corrosion control.;
- C) If the supplier uses a corrosion inhibitor is used, a minimum inhibitor concentration or a-range of concentrations for orthophosphate (as PO<sub>4</sub>) or silicate~~the inhibitor~~, measured at each entry point to the distribution system. ~~and in all tap samples, that the Agency determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;~~
- D) If the supplier uses a corrosion inhibitor, the supplier must maintain a minimum orthophosphate or silicate concentration measured in all tap samples that is necessary to form a passivating film on the interior walls of the pipes of the distribution system, as determined by the Agency in a SEP. If the supplier uses orthophosphate, the supplier must maintain an orthophosphate concentration equal to or greater than 0.5 mg/l (as PO<sub>4</sub>) for OCCT the Agency designates under subsection (d)(1) or 1.0 mg/l for OCCT the Agency designates under subsection (d)(2), unless the

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Agency determines that meeting the applicable minimum orthophosphate residual is not technologically feasible or is not necessary for OCCT.

- ~~E~~) If the supplier adjusts alkalinity ~~is adjusted~~ as part of OCCT optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity for; ~~measured at~~ each entry point to the distribution system and in all tap samples.;
- E) ~~If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.~~
- 2) The values for the applicable water quality control parameters listed in subsection (f)(1) must be those ~~that~~ the Agency determines reflect OCCT optimal corrosion control treatment for the supplier.
- 3) ~~The Agency may, by a SEP, approve values for additional water quality control parameters determined by the Agency to reflect optimal corrosion control for the supplier's system.~~
- 34) The Agency must, ~~in issuing a SEP~~, explain these determinations and give to the supplier, along with the basis for its decisions when issuing a SEP.
- g) Continued Operation and Monitoring for OCCT and Re-Optimized OCCT. All suppliers optimizing or re-optimizing corrosion control must continue to operate and maintain OCCT optimal corrosion control treatment, including maintaining water quality parameter values at or above minimum values or within ranges ~~approved by~~ the Agency approved under subsection (f), ~~under in accordance with~~ this subsection (g) for all samples ~~the supplier collect~~collected under Section 611.357(d) through (f). This subsection (g) applies to all suppliers that Section 611.357 does not require to monitor water quality parameters, including consecutive system suppliers distributing water that another supplier has treated applying corrosion control treatment and any suppliers applying corrosion control treatment, OCCT, or re-optimized OCCT. The supplier must determine whether it complies ~~Compliance with the requirements of~~ this subsection (g) ~~must be determined~~ every six months, as ~~specified under~~ Section 611.357(d) specifies. A

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~~supplier does not comply~~ ~~water system is out of compliance~~ with ~~the requirements of~~ this subsection (g) ~~in any~~ ~~for a~~ six-month period ~~during which the supplier~~ ~~if it~~ has excursions ~~from~~ ~~for~~ any Agency-specified water quality parameter on more than nine cumulative days during the six-month period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the Agency-designated minimum value or outside the Agency-designated range ~~designated by the Agency~~. The supplier calculates daily ~~Daily~~ values ~~are calculated as provided in~~ subsections (g)(1) through (g)(3) provide. The Agency ~~may exclude~~ ~~must delete~~ results from this calculation that it determines are obvious sampling errors ~~from this calculation~~. The supplier must record sampling errors even when not included in calculations.

- 1) On days when the supplier collects more than one measurement for the water quality parameter ~~is collected~~ at the sampling location, the daily value ~~is~~ must be the average of all results the supplier collected during the day, regardless of whether the supplier collected the samples ~~are collected~~ through continuous monitoring, grab sampling, or a combination of both.

BOARD NOTE: Corresponding 40 CFR 141.82(g)(1) further provides as follows: If USEPA approves an alternative formula under 40 CFR 142.16(d)(1)(ii) in the State's application for a program revision submitted under 40 CFR 142.12, the approved State's formula ~~is~~ must be used to aggregate multiple measurements ~~taken~~ at a sampling point for the water quality ~~parameters~~ parameter in lieu of the formula in this subsection (g)(1).

- 2) On days when the supplier collects only one measurement for the water quality parameter ~~is collected~~ at the sampling location, the daily value ~~is~~ must be the result of that measurement.
  - 3) On days when the supplier collects no measurement ~~is collected~~ for a the water quality parameter at the sampling location, the daily value ~~is~~ must be the daily value calculated on the most recent day on which the supplier measured the water quality parameter ~~was measured~~ at the sampling location ~~sample site~~.
- h) Modifying ~~Modification of~~ Agency Treatment Decisions for OCCT and re-optimized OCCT

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- 1) On its own initiative, or in response to a request by ~~the~~ supplier, the Agency may ~~issue, by~~ a SEP ~~modifying, modify~~ its determination of the ~~OCCT~~~~optimal corrosion control treatment~~ under subsection (d) or of the optimal water quality control parameters under subsection (f).
  - 2) A ~~supplier must~~ request ~~for~~ modification ~~must be~~ in writing, ~~explaining the propriety of~~~~explain why~~ the modification ~~is appropriate~~, and ~~providing~~~~provide~~ supporting documentation.
  - 3) The Agency may modify its determination ~~if~~~~where~~ it determines that ~~a~~~~such~~ change ~~will be necessary to~~ ensure that the supplier continues ~~optimizing to~~~~optimize~~ corrosion control treatment. A revised determination must ~~give set forth~~ the new treatment requirements ~~or water quality parameters~~, explain the basis for the Agency's decision, and provide an implementation schedule for completing the treatment modifications ~~for re-optimized OCCT~~.
  - 4) Any interested person may submit information to the Agency bearing on whether the Agency should ~~exercise, within~~ its discretion ~~and~~, issue a SEP ~~modifying to~~~~modify~~ its determination under subsection (h)(1). An Agency determination not to act on ~~a submission of such~~ information ~~by~~ an interested person ~~submits~~ is not an Agency determination for the purposes of Sections 39 and 40 of the Act.
- i) USEPA Treatment Decisions on OCCT and re-optimized OCCT by USEPA.  
Under ~~the procedures in~~ 40 CFR 142.19, ~~the~~ USEPA ~~reserves~~Regional Administrator has reserved the prerogative to review Agency OCCT treatment determinations ~~made by the Agency~~ under subsections (d)(1) or (d)(2), (f), or (h) and issue federal treatment determinations consistent with ~~the requirements of~~ 40 CFR 141.82(d)(1) or (d)(2), (e), or (h) ~~if USEPA, where the Regional Administrator~~ finds that certain conditions exist~~the following is true~~:
- 1) The Agency ~~fails~~~~has failed~~ to issue a treatment determination by the applicable deadlines ~~contained~~ in Section 611.351 (corresponding with 40 CFR 141.81);
  - 2) The Agency ~~abuses~~~~has abused~~ its discretion in a substantial number of instances~~seases~~ or in instances~~seases~~ affecting a substantial population; or

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- 3) The technical aspects of the Agency's determination would be indefensible in ~~an expected~~ federal enforcement action taken against ~~the~~a supplier.
- j) Find-and-fix Assessment for Tap Sample Sites Exceeding the Lead Action Level. The supplier must conduct specific steps when a tap sampling site exceeds the lead action level in monitoring under Section 611.356.
- 1) Step 1: Corrosion Control Treatment Assessment. The supplier must sample at a new water quality parameter sampling site that is on the same-sized water main, in the same pressure zone, and located within a half mile of the sampling site that exceeded the action lead level within five days after receiving the sample results. A small supplier not applying corrosion control treatment may take up to 14 days to collect the samples. The supplier must measure certain parameters:
- A) pH;
- B) Alkalinity;
- C) Orthophosphate (as PO<sub>4</sub>), if the supplier uses an inhibitor containing an orthophosphate compound;
- D) Silica, if the supplier uses an inhibitor containing a silicate compound; and
- E) A supplier having an existing water quality parameter sampling site complying with this Section may sample from that site.
- F) A supplier that must meet optimal water quality control parameters but not having an existing water quality parameter sampling site complying with this Section must add new sampling sites to the minimum number of sites Section 611.357(g) requires. The supplier must add sites until it has twice the minimum number of sites Section 611.357(a)(2)(A) requires. If a supplier exceeds this upper threshold for the number of sites, the Agency may issue a SEP determining that a newer site can better assess the efficacy of the corrosion control treatment and remove existing sites during sanitary survey evaluating OCCT.



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- 2) Step 2: Site Assessment. A supplier must collect a follow-up sample at any tap sampling site exceeding the lead action level within 30 days after receiving the sample results. The supplier may use different sample volumes or different sampling procedures collecting these follow-up samples to assess the source of elevated lead levels. The supplier must submit samples it collects under this Section to the Agency but must not include them in calculating the 90th percentile concentration under Section 611.356. If the supplier cannot collect a follow-up sample at a site, the supplier must document to the Agency why it was unable to collect a follow-up sample.
- 3) Step 3: Evaluating Results and Recommending OCCT or Other Actions. Within six months after the end of the tap sampling period during which a supplier exceeds the lead action level, the supplier must evaluate the results of the monitoring conducted under subsection (j)(2) to determine if the supplier must either locally or centrally adjust the OCCT or other distribution system actions are necessary and submit the recommendation to the Agency. Modifying corrosion control treatment might not be necessary to address every exceedance. Other distribution system actions may include flushing to reduce water residence time in the system. If known from the site assessment, the supplier must note the cause of the elevated lead level in its recommendation to the Agency because site-specific issues can be an important factor in why the supplier does not recommend any adjustment of corrosion control treatment or other distribution system actions. A supplier in the process of optimizing or re-optimizing OCCT under subsections (a) through (f) needs not recommend a find-and-fix treatment to the Agency.
- 4) Step 4: Agency Action. The Agency must issue a SEP approving the supplier's treatment recommendation or specify a different approach within six months after the supplier completes Step 3, as subsection (j)(3) describes.
- 5) Step 5: Implementing the Agency's SEP. If the Agency-issued SEP requires the water system to adjust the OCCT, the supplier must modify its corrosion control treatment within 12 months after completing Step 4, as subsection (j)(4) describes. A supplier not applying corrosion control treatment and needing to install OCCT must follow the schedule in Section 611.351(e).

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- 6) Step 6: Follow-up Sampling. A supplier adjusting its OCCT must complete follow-up sampling (Sections 611.356(d)(2) and 611.357(c)) within 12 months after completing Step 5, as subsection (j)(5) describes.
- 7) Step 7: Agency Review. For a supplier adjusting its OCCT, the Agency must review the supplier's modified corrosion control treatment, and the Agency must designate optimal water quality control parameters (Section 611.352(f)(1)) within six months after the supplier completes Step 6, as subsection (j)(6) describes.
- 8) Step 8: Operating and Complying. A supplier adjusting its OCCT must comply with the Agency-designated optimal water quality control parameters (Section 611.352(g)) and continue tap sampling (Sections 611.356(d)(3) and 611.357(d)).

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.82.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.353 Source Water Treatment**

A supplier~~Suppliers~~ must complete ~~the applicable~~ source water monitoring and treatment requirements (~~under described in the referenced portions of~~ subsection (b); and ~~in~~ Sections 611.356 and 611.358) before specific ~~by the following~~ deadlines.

- a) Deadlines for Completing Source Water Treatment Steps
  - 1) Step 1: A supplier exceeding the lead ~~action level~~ or ~~the~~ copper action level must complete lead and copper and source water monitoring (under Section 611.358(b)) and recommend ~~make a~~ treatment ~~recommendation~~ to the Agency (under subsection (b)(1)) within 180 days after the end of the tap monitoring period during which the supplier exceeded the ~~pertinent~~ action level.
  - 2) Step 2: The Agency must ~~issue, by~~ a SEP determining, make a ~~determination regarding~~ source water treatment (under subsection (b)(2)) within six months after the supplier submits ~~submission of~~ monitoring results under step 1.

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- 3) Step 3: If the Agency requires ~~installing installation of~~ source water treatment, the supplier must install that treatment (~~under~~ subsection (b)(3)) within 24 months after ~~the Agency completes completion of~~ step 2.
  - 4) Step 4: The supplier must complete follow-up tap water monitoring (~~under~~ Section 611.356(d)(2)) and source water monitoring (~~under~~ Section 611.358(c)) within 36 months after completion of step 2.
  - 5) Step 5: The Agency must ~~issue, by~~ a SEP ~~reviewing, review~~ the supplier's installation and operation of source water treatment and specify MPCs for lead and copper (~~under~~ subsection (b)(4)) within six months after ~~the Agency completes completion of~~ step 4.
  - 6) Step 6: The supplier must ~~comply operate in compliance~~ with the Agency-specified lead and copper MPCs (~~under~~ subsection (b)(4)) and continue source water monitoring (~~under~~ Section 611.358(d)).
- b) ~~Description of~~ Source Water Treatment Requirements
- 1) System Treatment Recommendation. Any supplier ~~exceeding that exceeds~~ the lead ~~action level~~ or the copper action level must recommend ~~in writing~~ to the Agency ~~in writing the installation and operation of~~ one of the source water treatments ~~listed~~ in subsection (b)(2). A supplier may recommend ~~installing that~~ no treatment ~~be installed~~ based on a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.
  - 2) Agency Determination Regarding Source Water Treatment
    - A) The Agency must ~~evaluate complete an evaluation of~~ the results of all source water samples ~~the supplier~~ submitted ~~by the supplier~~ to determine whether source water treatment is necessary to minimize lead or copper levels in water ~~the supplier delivers delivered~~ to users' taps.
    - B) If the Agency determines ~~that~~ treatment ~~necessary is needed~~, the Agency must ~~issue, by~~ a SEP ~~requiring the supplier to install, either require installation~~ and ~~operate either operation of~~ the source

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water treatment ~~the supplier~~ recommended ~~by the supplier~~ (if any) or ~~require the installation and operation of another~~ from among specific source water treatment ~~techniques from among the following:~~

- i) ion exchange;
  - ii) reverse osmosis;
  - iii) lime softening; or
  - iv) coagulation/filtration.
- C) The Agency may ~~require request and~~ the supplier ~~to must~~ submit, ~~on or before a certain date, any such~~ additional information, ~~on or before a certain date,~~ as the Agency determines is necessary to aid ~~in~~ its review.
- D) The Agency must notify the supplier in writing of its determination, ~~stating and set forth~~ the basis for its decision.
- 3) ~~Installing Installation of~~ Source Water Treatment. ~~A Each~~ supplier must properly install and operate the source water treatment ~~approved by the~~ Agency approves under subsection (b)(2).
- 4) Agency ~~Reviewing Review of~~ Source Water Treatment and Specifying Specification of Maximum Permissible Source Water Levels (MPCs)
- A) The Agency must review the source water samples ~~taken by the~~ supplier took both before and after the supplier installs source water treatment, and determine whether the supplier ~~has~~ properly installs installed and operates operated the approved source water treatment.
  - B) Based on its review, the Agency must ~~issue, by~~ a SEP approving, approve the lead and copper MPCs for finished water entering the supplier's distribution system. ~~The MPC Such~~ levels must reflect the contaminant removal capability of the treatment when properly operated and maintained.

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- C) The Agency must explain the basis for its decision under subsection (b)(4)(B).
- 5) Continued Operation and Maintenance. ~~A Each~~ supplier must maintain lead and copper levels below the MPCs ~~the Agency~~ approved ~~by the Agency~~ at ~~every each~~ sampling point ~~the supplier monitors under monitored in accordance with~~ Section 611.358. The supplier ~~does not comply is out of compliance~~ with this subsection (b) if the level of lead or copper at any sampling point is greater than the MPC ~~the Agency~~ approved ~~by the Agency~~ under subsection (b)(4)(B).
- 6) ~~Modifying Modification of~~ Agency Treatment Decisions
- A) On its own initiative, or in response to a request by ~~the a~~ supplier, the Agency may ~~issue, by~~ a SEP ~~modifying, modify~~ its determination of the source water treatment under subsection (b)(2); or the lead and copper MPCs under subsection (b)(4).
- B) A ~~supplier must make a~~ request ~~to modify for modification by a supplier must be~~ in writing, ~~explaining the propriety of explain why~~ the modification ~~is appropriate~~, and ~~providing provide~~ supporting documentation.
- C) The Agency may ~~issue, by~~ a SEP ~~modifying, modify~~ its determination ~~if where~~ it concludes that ~~the such~~ change is necessary to ensure that the supplier continues ~~minimizing to minimize~~ lead and copper concentrations in source water.
- D) A revised determination ~~made~~ under subsection (b)(6)(C) must ~~state set forth~~ the new treatment requirements, explain the basis for the Agency's decision, and provide ~~a an implementation~~ schedule for completing the treatment modifications.
- E) Any interested person may submit information to the Agency; in writing ~~bearing, that bears~~ on whether the Agency should ~~exercise, within~~ its discretion ~~and~~, issue a SEP ~~modifying to modify~~ its determination under subsection (b)(2). An Agency determination not to act on ~~a submission of such~~ information ~~by~~ an interested

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person submits is not an Agency determination for the purposes of Sections 39 and 40 of the Act.

- 7) USEPA Treatment Decisions ~~by USEPA~~. Under ~~the procedures in~~ 40 CFR 142.19, ~~the USEPA reserves~~ Regional Administrator reserves the prerogative to review Agency treatment determinations ~~made by the Agency~~ under subsections (b)(2), (b)(4), or (b)(6) and issue federal treatment determinations consistent with ~~the requirements of~~ 40 CFR 141.83(b)(2), (b)(4), and (b)(6) ~~if USEPA, where the Administrator~~ finds that certain conditions exist~~the following is true~~:
- A) the Agency fails ~~has failed~~ to issue a treatment determination by the applicable deadline ~~contained~~ in subsection (a);
  - B) the Agency abuses ~~has abused~~ its discretion in a substantial number of instances ~~eases~~ or in instances ~~eases~~ affecting a substantial population; or
  - C) the technical aspects of the Agency's determination would be indefensible in a ~~an expected~~ federal enforcement action taken against the ~~a~~ supplier.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.83.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.354 Lead Service Line Inventory and Replacing Lead Service LinesReplacement**

- a) Lead Service Line Inventory. A supplier must develop an inventory identifying the materials composition for all service lines connected to its distribution system. The inventory must meet specific requirements:
  - 1) The supplier must develop an initial inventory before October 16, 2024 and submit the inventory to the Agency as Section 611.360(e) requires.
  - 2) The inventory must include all service lines connected to the supplier's distribution system regardless of ownership status (e.g., where the supplier

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shares service line ownership, the inventory would include both the supplier-owned and customer-owned portions of the service line).

- 3) When conducting the inventory of service lines in its distribution system for the initial inventory under subsection (a)(1), the supplier must use any information on lead and galvanized iron or steel system components the supplier identified complying with 40 CFR 141.42(d). The supplier must also review the sources of information in subsections (a)(3)(A) through (a)(3)(D) to identify service line materials for the initial inventory. The supplier may use other sources of information the Agency approves in a SEP.
  - A) All construction and plumbing codes, permits, and existing records or other documents indicating the service line materials connecting structures to its distribution system.
  - B) All supplier records, including distribution system maps and drawings, historical records on each service connection, meter installation records, historical capital improvement or master plans, and standard operating procedures.
  - C) All inspections and distribution system records indicating the materials composing the service connections connecting structures to its distribution system.
  - D) Any resource, information, or method for identifying and assessing service line materials the Agency provides or requires in a SEP.
- 4) The supplier must categorize every service line and supplier-owned portion of a service line under split ownership:
  - A) “Lead” for a lead service line.
  - B) “Galvanized Requiring Replacement” for a galvanized service line at any time downstream of a lead service line or currently downstream of a lead status unknown service line. If the supplier cannot demonstrate that a galvanized service line was never downstream of a lead service line, the supplier must presume a lead service line was upstream.

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- C) “Non-Lead” for a service line the supplier determines through an evidence-based record, method, or technique is not lead or galvanized requiring replacement under subsection (a)(4)(A) or (a)(4)(B). The supplier may classify the service line using its actual material of construction (e.g., “plastic” or “copper”) as an alternative to non-lead.
- D) “Lead Status Unknown” for a service line of material the supplier does not know is lead, galvanized requiring replacement, or non-lead service line under subsection (a)(4)(A), (a)(4)(B), or (a)(4)(C), e.g., if the supplier has no documented evidence supporting material classification. The supplier may classify the line as “unknown”, as an alternative to classifying it as lead status unknown, however, all requirements applying to lead status unknown service lines will apply to those the supplier classifies as Unknown. A supplier may provide more information regarding its lead status unknown lines, as long as the inventory clearly distinguishes unknown service lines from those for which the supplier verified the material of construction through records or inspection.

BOARD NOTE: See the definition of “lead status unknown service line” in Section 611.350(b).

- 5) The supplier must identify and track service line materials in its inventory as the supplier encounters them in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities).
- 6) The supplier must update its inventory based on all applicable sources in subsections (a)(3) and (a)(5) and any lead service line replacements or service line material inspections the supplier conducted. The supplier may use other sources of information the Agency approves in a SEP and must use other sources of information the Agency requires in a SEP. The supplier must submit the updated inventory to the Agency as Section 611.360(e) requires. The publicly accessible inventory must reflect inventory updates no less frequently than when the supplier must submit them to the Agency.



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- A) A supplier whose inventory contains only non-lead service lines needs not provide inventory updates to the Agency or public. If the supplier subsequently finds a lead service line within its system, the supplier must prepare an updated inventory under subsection (a) on a schedule the Agency establishes in a SEP.
- B) This subsection (a)(6)(B) corresponds with 40 CFR 141.84(a)(6)(ii), which USEPA marked “Reserved”. This statement maintains structural consistency with USEPA’s rule.
- 7) To calculate the number of service line replacements under subsections (f) or (g), the supplier must apply the replacement rate to the sum of known lead and galvanized requiring replacement service lines when the supplier first exceeds the lead trigger level or lead action level plus the number of lead status unknown service lines in the beginning of each year of the supplier’s annual goal-based or mandatory full lead service line replacement program.
- A) A supplier must count each service line only once when calculating the required number of service lines it must replace, even if the supplier shares service line ownership, and the supplier must replace both the customer-owned and system-owned portions.
- B) The supplier must annually update the number of service lines it needs to replace by subtracting the number of lead status unknown service lines the supplier discovered are non-lead and adding the number of non-lead service lines the supplier discovered are lead or galvanized requiring replacement service lines.
- C) Verifying a lead status unknown service line as non-lead in its inventory does not count as replacing a service line.

BOARD NOTE: Using the number of lead and galvanized requiring replacement service lines at the time of first exceeding the lead trigger level applies for subsection (f). The number at the time of first exceeding the lead action level applies for subsection (g). The number of lead status unknown service lines remaining at the beginning of each year applies to both.

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- 8) The supplier must keep its service line materials inventory publicly accessible.
- A) The inventory must include a locational identifier, like a street address, block, intersection, or landmark, for each lead or galvanized requiring replacement service line. A supplier may include a locational identifier for lead status unknown service lines or list the exact address of each service line.
- B) A supplier serving more than 50,000 persons must make the publicly accessible inventory available online.
- 9) If a supplier has no lead, galvanized requiring replacement, or lead status unknown service lines (regardless of ownership) in its inventory, the supplier may comply with subsection (a)(8) using a written statement, in lieu of the inventory, declaring that its distribution system has no lead or galvanized requiring replacement service lines. The statement must include a general description of all applicable sources the supplier used under subsections (a)(3), (a)(5), and (a)(6) to determine these service lines are absent.
- 10) The supplier must include instructions for accessing the service line inventory (including inventories consisting only of a statement under subsection (a)(9)) in its Consumer Confidence Report under Section 141.153(d)(4)(K).
- b) Lead Service Line Replacement Plan. A supplier with one or more lead, galvanized requiring replacement, or lead status unknown service lines in its distribution system must submit a lead service line replacement plan to the Agency under Section 611.360(e) before October 16, 2024. The lead service line replacement plan must have sufficient detail to ensure the supplier can comply with lead service line replacement requirements under this Section. The plan must include specific descriptions:
- 1) A strategy for determining the composition of lead status unknown service lines in its inventory;
- 2) A procedure for conducting full lead service line replacement;

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- 3) A strategy for informing customers before a full or partial lead service line replacement;
  - 4) For a supplier serving more than 10,000 persons, a lead service line replacement goal rate the supplier recommends if the supplier exceeds the lead trigger level;
  - 5) A procedure for customers to flush particulate lead from service lines and premises plumbing;
  - 6) A prioritization strategy for lead service line replacement based on factors, including targeting known lead service lines, replacing lead service lines for disadvantaged consumers and populations most sensitive to the effects of lead, etc.; and
  - 7) A strategy for funding lead service line replacements considering ways to replace the customer-owned portion for those unable to pay.
- c) Operating Procedures for Replacing Lead Goosenecks, Pigtails, or Connectors
- 1) The supplier must replace any lead gooseneck, pigtail, or connector it owns when the supplier encounters it during planned or unplanned water system infrastructure work.
  - 2) The supplier must offer to replace a customer-owned lead gooseneck, pigtail, or connector; however, the supplier needs not bear the cost of replacing the customer-owned parts.
  - 3) The supplier needs not replace a customer-owned lead gooseneck, pigtail, or connector if the customer objects to replacing it.
  - 4) Replacing a lead gooseneck, pigtail, or connector does not count towards goal-based or mandatory lead service line replacements under subsections (f) or (g).
  - 5) When replacing any gooseneck, pigtail, or connector attached to a lead service line, the supplier must follow the risk mitigation procedures Section 141.85(f)(2) specifies.

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- d) Conducting Lead Service Line Replacement That May Result in Partial Replacements
- 1) A supplier planning to partially replace a lead service line (e.g., replace only the supplier-owned portion) in the course of planned infrastructure work must notify the service line's owner, or the owner's authorized agent, and any non-owner residents the service line serves at least 45 days before the replacement. The notice must explain that the supplier will replace the supplier-owned portion of the service line and offer to replace the customer-owned portion (not supplier-owned). The supplier needs not bear the cost of replacing the customer-owned portion of the lead service line.
- A) Before returning a service line to service, the supplier must provide notice complying with Section 611.355(a) and explaining that consumers may experience a temporary increase of lead levels in their drinking water due to the replacement, providing information about the health effects of lead, and describing actions consumers can take to minimize their exposure to lead in drinking water. If the lead service line undergoing partial replacement serves multi-family dwellings, the supplier may post the information at a conspicuous location instead of providing individual notice to each resident.
- B) The supplier must inform consumers about service line flushing using the procedure in subsection (b)(5) requires before returning the affected service line to service.
- C) The supplier must provide the consumer with a pitcher filter or point-of-use treatment device to reduce lead, six months of replacement cartridges, and use instructions before returning the affected service line to service. If the affected service line serves more than one residence or non-residential unit (e.g., a multi-unit building), the supplier must provide a filter, six months of replacement cartridges and use instructions to every unit in the building.
- D) The supplier must offer to collect a follow up tap sample between three and six months after partially replacing a lead service line.

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The supplier must provide the results from the follow up sample under Section 611.355(d).

- 2) Any supplier replacing the supplier-owned portion of a lead service line in the course of an emergency repair must notify and provide risk mitigation measures to the persons the affected service line serves as subsections (d)(1)(A) through (d)(1)(C) require before returning the line to service.
- 3) If a customer notifies a supplier that the customer plans to replace the customer's portion of the lead service line, the supplier must make a good faith effort to coordinate simultaneously replacing the supplier's portion. If simultaneously replacing the supplier- and customer-owned portions is not practicable, the supplier must replace the supplier-owned portion as soon as practicable but no later than 45 days after the customer replaces the customer-owned portion of the lead service line. The supplier must notify and provide risk mitigation measures as subsections (d)(1)(A) through (d)(1)(C) require. If the supplier fails to replace its portion of the lead service line within 45 days after the customer replaces the customer's portion of the lead service line, the supplier must notify the Agency under Section 611.360(e) within 30 days after failing to meet the deadline. The supplier must complete replacing the supplier-owned portion of the service line no later than 180 days after the customer replaces the customer-owned portion.
- 4) If a supplier receives notice or otherwise learns that a customer replaced the customer-owned portion of a lead service line within the previous six months leaving the system-owned portion in place, the supplier must replace its portion within 45 days after the supplier becomes aware the customer replaced the customer-owned portion. The supplier must notify and provide risk mitigation measures as subsections (d)(1)(A) through (d)(1)(C) require within 24 hours after the supplier becomes aware of the customer replacing the customer-owned portion. If the supplier fails to replace the supplier-owned portion of the service line within 45 days after becoming aware of the customer replacing the customer-owned portion, the supplier must notify the Agency under Section 611.360(e) within 30 days after failing to meet the deadline. The supplier must complete replacing the supplier-owned portion of the service line no later than 180 days after the customer replaces the customer-owned portion.

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- 5) If a supplier receives notice or otherwise learns that a customer replaced the customer-owned portion of a lead service line more than six months in the past, the supplier needs not replace the supplier-owned portion of the lead service line under this subsection (d)(5). However, the supplier must still include the system-owned portion when calculating a lead service line replacement rate under subsection (a)(7).
- e) Conducting Full Lead Service Line Replacements. A supplier conducting a full lead service line replacement must notify the service line's owner, or the owner's authorized agent, and any non-owner residents the service line serves within 24 hours after completing the replacement. The supplier needs not bear the cost of replacing the customer-owned portion of the lead service line.
- 1) The notice must comply with Section 611.355(a), explain that consumers may experience a temporary increase of lead levels in their drinking water due to the replacement, inform about the health effects of lead, and explain actions a consumer can take to minimize exposure to lead in drinking water. If the lead service line the supplier will replace serves a multi-family dwelling, the supplier may post the information at a conspicuous location instead of providing individual notice to all residents.
- 2) The supplier must inform about flushing the service line using the procedure the supplier developed under subsection (b)(5) before returning the replaced service line to service.
- 3) The supplier must provide the consumer with a pitcher filter or point-of-use treatment device to reduce lead, six months of replacement cartridges, and use instructions before returning the replaced service line to service. If the lead service line serves more than one residence or non-residential unit (e.g., a multi-unit building), the supplier must provide a filter and six months of replacement cartridges and use instructions to every unit in the building.
- 4) The supplier must offer to collect a follow up tap sample between three and six months after replacing a lead service line. The supplier must provide the results from the follow up sample under Section 611.355(d).
- f) Goal-Based Full Lead Service Line Replacement for Suppliers Having a 90th Percentile Lead Concentration Exceeding the Lead Trigger Level But Not the

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Lead Action Level. A supplier serving more than 10,000 persons having a 90th percentile lead concentration under Section 611.356 exceeding the lead trigger level but not the lead action level must conduct goal-based full lead service line replacement at a rate approved in an Agency-issued SEP.

- 1) The supplier must annually calculate the number of full lead service line replacements it must conduct under subsection (a)(7).
- 2) The supplier must replace lead service lines complying with subsection (d) or (e).
- 3) Only a full lead service line replacement counts towards a supplier's annual replacement goal. A partial lead service line replacement does not count towards the goal.
- 4) The supplier must inform customers having a lead, galvanized requiring replacement, or lead status unknown service line as Section 611.355(g) requires.
- 5) A supplier failing to meet its lead service line replacement goal must take certain actions:
  - A) Conduct public outreach activities under Section 611.355(h) until either the supplier meets its replacement goal, or tap sampling shows the 90th percentile concentration does not exceed the lead trigger level for two continuous years of monitoring.
  - B) Resume its goal-based lead service line replacement program under this subsection (f) if its 90th percentile lead concentration anytime later exceeds the lead trigger level but not the lead action level.
- 6) The first year of a supplier's lead service line replacement program begins on the first day after the end of the tap sampling period during which the supplier exceeded the lead trigger level. If the supplier samples annually or less frequently, the end of the tap monitoring cycle is September 30 of the calendar year during which the sampling occurs. If the Agency issues a SEP establishing an alternative tap monitoring cycle, the end of the supplier's tap monitoring cycle is the last day of that cycle.

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- g) Mandatory Full Lead Service Line Replacement for Suppliers Whose 90th Percentile Lead Concentration Exceeds the Lead Action Level. A supplier serving more than 10,000 persons exceeding the lead action level in tap sampling monitoring under Section 611.356 must replace full lead service lines on its distribution system at an annual rate of at least three percent on a two-year rolling average basis.
- 1) The supplier must calculate its average annual number of full lead service line replacements under subsection (a)(7).
  - 2) The supplier must replace lead service lines under subsections (d) and (e).
  - 3) Only a full lead service line replacement counts towards a supplier's mandatory annual replacement rate of at least three percent. A partial lead service line replacement does not count towards the supplier's mandatory replacement rate.
  - 4) A supplier must inform its customers having a lead, galvanized requiring replacement, or lead status unknown service line as Section 611.355(g) requires.
  - 5) A CWS supplier serving 10,000 or fewer persons or a NTNCWS supplier for which the Agency issues a SEP approving or designating replacing lead service lines as a compliance option must replace lead service lines as Section 611.363(a)(1) describes. The supplier must replace lead service lines complying with subsections (d) and (e).
  - 6) A supplier may stop replacing lead service lines after cumulatively replacing the required number. Unless the Agency issues a SEP under subsection (g)(9) requiring another percentage, the required number is at least three percent of the service lines subsection (a)(7) determines times the number of years between when the supplier most recently began mandatorily replacing lead service lines and when the supplier calculates its lead 90th percentile concentration under Section 611.360(c)(4) to be at or below the lead action level during each of four consecutive six-month tap monitoring cycles. If the supplier later exceeds the lead action level, it must restart mandatorily replacing lead service lines at the same rate on a



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two-year rolling average basis, unless the Agency issues a SEP under subsection (g)(9) requiring an alternative replacement rate.

- 7) A supplier may also cease mandatorily replacing lead service lines if the supplier has no remaining lead status unknown service lines in its inventory, and the supplier obtains refusals or non-responses to its offer to replace the customer-owned portion of the lead service line from every customer on its distribution system still served by a lead service line or a galvanized requiring replacement service line. For this subsection (g)(7) and under Section 611.360(e), a supplier must document customer refusals to the Agency, including any written refusals signed by the customers, any documents memorializing customers verbally refusing, and any documents memorializing no response from customers after the supplier made at least two good faith attempts to reach each offering to replace the full lead service line. If the supplier's lead 90th percentile concentration later exceeds the lead action level, the supplier must offer to replace the customer-owned portion for every customer served through a full or partial lead service line or galvanized requiring replacement service line. The supplier needs not bear the cost of replacing the customer-owned portion of any lead service line.
- 8) The first year of lead service line replacement begins the first day after the end of the tap sampling period during which the supplier exceeded the lead action level.
- 9) If the Agency determines a shorter schedule is feasible, the Agency must issue a SEP requiring a supplier to replace lead service lines on a shorter schedule than that this Section otherwise requires, taking into account the number of lead service lines in the supplier's system. The Agency must issue this SEP within six months after the supplier must begin replacing lead service lines under subsection (g).
- h) Reporting to Demonstrate Compliance to the Agency. To demonstrate that it complies with subsections (a) through (g), a supplier must report the information Section 611.360(e) specifies to the Agency.
- a) Suppliers Required to Replace Lead Service Lines
  - 1) If the results from tap samples taken under Section 611.356(d)(2) exceed

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~~the lead action level after the supplier has installed corrosion control or source water treatment (whichever sampling occurs later), the supplier must recommence replacing lead service lines in accordance with the requirements of subsection (b).~~

- 2) ~~If a supplier is in violation of Section 611.351 or Section 611.353 for failure to install source water or corrosion control treatment, the Agency may, by a SEP, require the supplier to commence lead service line replacement under this Section after the date by which the supplier was required to conduct monitoring under Section 611.356(d)(2) has passed.~~

b) ~~Annual Replacement of Lead Service Lines~~

1) ~~Initiation of a Lead Service Line Replacement Program~~

- A) ~~A supplier that is required to commence lead service line replacement under subsection (a) must annually replace at least seven percent of the initial number of lead service lines in its distribution system.~~
- B) ~~The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins.~~
- C) ~~The supplier must identify the initial number of lead service lines in its distribution system, including an identification of the portions of the system owned by the supplier, based on a materials evaluation, including the evaluation required under Section 611.356(a) and relevant legal authorities (e.g., contracts, local ordinances) regarding the portion owned by the system.~~
- D) ~~The first year of lead service line replacement must begin on the first day following the end of the monitoring period in which the supplier exceeded the action level under subsection (a).~~
- E) ~~If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs.~~

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- ~~F) If the Agency has established an alternate monitoring period by a SEP, then the end of the monitoring period will be the last day of that period.~~
- 2) ~~Resumption of a Lead Service Line Replacement Program after Cessation~~
- ~~A) A supplier that is resuming a program after cessation of its lead service line replacement program, as allowed under subsection (f), must update its inventory of lead service lines to include those sites that it had previously determined did not require replacement under the sampling provision of subsection (e).~~
- ~~B) The supplier will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that must be replaced per year (seven percent lead service line replacement is based on a 15-year replacement program, so that, for example, a supplier resuming lead service line replacement after previously conducting two years of replacement would divide the updated inventory by 13).~~
- ~~C) For a supplier that has completed a 15-year lead service line replacement program, the Agency must, by a SEP, determine a schedule for replacing or retesting lines that were previously tested out under the completed replacement program, whenever the supplier has re-exceeded the action level.~~
- e) ~~Service Lines Not Needing Replacement. A supplier is not required to replace any individual lead service line for which the lead concentrations in all service line samples taken from that line under Section 611.356(b)(3) are less than or equal to 0.015 mg/l.~~
- d) ~~A water supplier must replace that portion of the lead service line that it owns. In cases where the supplier does not own the entire lead service line, the supplier must notify the owner of the line, or the owner's authorized agent, that the supplier will replace the portion of the service line that it owns and must offer to replace the owner's portion of the line. A supplier is not required to bear the cost of replacing the privately owned portion of the line, nor is it required to replace the privately owned portion where the owner chooses not to pay the cost of replacing the privately owned portion of the line, or where replacing the~~

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~~privately owned portion would be precluded by State, local, or common law. A water supplier that does not replace the entire length of the service line also must complete the following tasks:~~

- ~~1) Notice Prior to Commencement of Work~~
  - ~~A) At least 45 days prior to commencing the partial replacement of a lead service line, the water supplier must provide notice to the residents of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead.~~
  - ~~B) The Agency, by issuing an appropriate SEP, may allow the water supplier to provide notice under the previous sentence less than 45 days prior to commencing partial lead service line replacement where it determines that such replacement is in conjunction with emergency repairs.~~
  - ~~C) In addition, the water supplier must inform the residents served by the line that the supplier will, at the supplier's expense, collect a sample from each partially replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed by Section 611.356(b)(3), within 72 hours after the completion of the partial replacement of the service line. The supplier must collect the sample and report the results of the analysis to the owner and the residents served by the line within three business days after receiving the results.~~
  - ~~D) Mailed notices post-marked within three business days after receiving the results must be considered "on time".~~
- ~~2) The water supplier must provide the information required by subsection (d)(1) to the residents of individual dwellings by mail or by other methods approved by the Agency by a SEP. In instances where multi-family dwellings are served by the service line, the water supplier must have the option to post the information at a conspicuous location.~~
- e) Agency Determination of Shorter Replacement Schedule

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- 1) ~~The Agency must, by a SEP, require a supplier to replace lead service lines on a shorter schedule than that otherwise required by this Section if it determines, taking into account the number of lead service lines in the system, that such a shorter replacement schedule is feasible.~~
  - 2) ~~The Agency must notify the supplier of its finding under subsection (e)(1) within six months after the supplier is triggered into lead service line replacement based on monitoring, as referenced in subsection (a).~~
- f) ~~Cessation of Service Line Replacement~~
- 1) ~~Any supplier may cease replacing lead service lines whenever it fulfills both of the following conditions:~~
    - A) ~~First draw tap samples collected under Section 611.356(b)(2) meet the lead action level during each of two consecutive six-month monitoring periods; and~~
    - B) ~~The supplier has submitted those results to the Agency.~~
  - 2) ~~If any of the supplier's first draw tap samples thereafter exceed the lead action level, the supplier must recommence replacing lead service lines under subsection (b)(2).~~
- g) ~~To demonstrate compliance with subsections (a) through (d), a supplier must report to the Agency the information specified in Section 611.360(e).~~

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.84.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 611.355 Public Education and Supplemental Monitoring and Mitigation**

A supplier exceeding that exceeds the lead action level based on tap water samples under collected in accordance with Section 611.356 must deliver the public education materials required by subsection (a) requires under in accordance with the requirements of subsection (b). A supplier exceeding that exceeds the lead action level must sample the tap water of any customer requesting sampling under who requests it in accordance with subsection (c). A small

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CWS or NTNCWS supplier electing to implement POU devices as a small supplier compliance flexibility option under Section 611.363 must provide public education materials as subsection (j) requires to inform users how to properly use POU devices. A supplier must deliver a consumer notice of lead tap water monitoring results to persons who are served by the supplier serves at each site that the supplier samples has tested, as specified in subsection (d) specifies. A supplier with lead, galvanized requiring replacement, or lead status unknown service lines, as defined in Section 611.384(a)(4), must deliver public education materials to persons served through these service lines as subsections (e) through (g) specify. A CWS supplier must conduct annual outreach to the Illinois Department of Public Health and local health agencies as subsection (i) provides. A CWS supplier serving more than 10,000 persons failing to meet its annual lead service line replacement goal under Section 611.354(f) must conduct outreach activities as subsection (h) specifies.

## a) Content of Written Public Education Materials

- 1) Community Water Systems and Non-Transient Non-Community Water Systems. A CWS or NTNCWS supplier must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed in subsections (a)(1)(A) through (a)(1)(~~GF~~). In addition, the supplier must use include the verbatim language set forth in subsections (a)(1)(A), (a)(1)(B), and (a)(1)(F) ~~in the materials, exactly as written~~, except for replacing the text in brackets with the in these subsections, for which the supplier must include system-specific information. Any additional information presented by a supplier presents must be consistent with the information set forth in subsections (a)(1)(A), through (a)(1)(~~GF~~), and the supplier must present the additional information in plain language that can be understood by the general public can understand. The supplier must submit all written public education materials to the Agency. A supplier may change the mandatory language in subsections (a)(1)(A) and (a)(1)(B) only as the Agency approves in a SEP.

- A) IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF SUPPLIER] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

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~~BOARD NOTE: The supplier must use the verbatim text set forth in this subsection (a)(1)(A), with the exception that the supplier must insert its name in place of the bracketed text.~~

- B) Health Effects of Lead. Exposure to lead in drinking water ~~Lead can cause serious health effects in all age groups~~ ~~problems if too much enters your body from drinking water or other sources.~~ Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems. ~~It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body.~~ ~~The greatest risk of lead exposure is to infants, young children, and pregnant women.~~ ~~Scientists have linked the effects of lead on the brain with lowered IQ in children.~~ ~~Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults.~~ ~~Lead is stored in the bones, and it can be released later in life.~~ ~~During pregnancy, the child receives lead from the mother's bones, which may affect brain development.~~

~~BOARD NOTE: The supplier must use the verbatim text set forth in this subsection (a)(1)(B).~~

- C) Sources of Lead
- i) Explain what lead is.
  - ii) Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home and building plumbing materials and service lines that may contain lead.
  - iii) Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

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BOARD NOTE: The supplier must use text providing that provides the information described in this subsection (a)(1)(C) describes.

- D) Discuss the steps the consumer can take to reduce his or her exposure to lead in drinking water.
- i) Encourage running the water to flush out the lead.
  - ii) Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.
  - iii) Explain that boiling water does not reduce lead levels.
  - iv) Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or water ~~treatment of water~~.
  - v) Suggest that parents have their child's blood tested for lead.

BOARD NOTE: The supplier must use text providing that provides the information described in this subsection (a)(1)(D) describes.

- E) Explain why there are elevated levels of lead in the supplier's drinking water (if known) and what the supplier is doing to reduce the lead levels in homes and buildings in this area.

BOARD NOTE: The supplier must use text providing that provides the information described in this subsection (a)(1)(E) describes.

- F) For more information, call us at [INSERT THE SUPPLIER'S NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT THE SUPPLIER'S WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit USEPA's Web site at



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[www.epa.gov/lead](http://www.epa.gov/lead) or contact your health care provider.

~~BOARD NOTE: The supplier must use the verbatim text set forth in this subsection (a)(1)(F), with the exception that the supplier must insert its name in place of the first segment of bracketed text, and it must add the second segment of bracketed text and substitute its Web address for the internal bracketed text.~~

G) Information on Lead Service Lines. A supplier having lead service lines must discuss opportunities to replace lead service lines and explain how a consumer may access the supplier's lead service line inventory to determine whether the consumer has a lead service line. The supplier must include information on programs providing financing solutions to assist property owners in replacing their portion of a lead service line, with a statement that the water system must replace the supplier-owned portion of a lead service line when the property owner notifies the supplier that the consumer will replace the property owners portion of the lead service line.

2) ~~Community Water Systems. In addition to including the elements specified in~~ subsection (a)(1) specifies, a CWS supplier must include two information items~~do both of the following~~:

A) ~~The supplier~~ It must tell consumers how to get their water tested; and

B) ~~The supplier~~ It must discuss lead in plumbing components and the difference between low-lead and lead-free components.

BOARD NOTE: At corresponding 40 CFR 141.85(a)(1), USEPA allowed the State to require prior approval of written public information materials. Rather than require prior Agency approval, the Board chooses ~~has chosen~~ to allow the Agency to raise any deficiencies that it may perceive using its existing procedure for review of public education materials. The Agency outlines ~~has outlined~~ its standard practice for review of public information materials as follows: The Agency provides a comprehensive public education packet to the supplier together with the notice that the supplier exceeds ~~has exceeded~~ the lead action

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level. That packet includes guidance and templates for the supplier to use in preparing and distributing its public education materials. The supplier must send a copy of the public education materials that it distributes to the Agency, and the Agency reviews the copy of the materials after their distribution to the public. The Agency directly communicates to the supplier any perceived defects in the materials. ~~When the Agency perceives minor defects, it~~ The Agency will request correction ~~when it perceives minor defects~~ in future distributions of the public education materials. ~~When the Agency perceives major defects in the materials, it or the Agency~~ will request a redistribution of corrected public education materials ~~the supplier when it perceives major defects in the materials~~ already distributed.

b) Delivering ~~Delivery of~~ Public Education Materials

- 1) The public education materials of a supplier ~~servicing that serves~~ a large proportion of non-English-speaking consumers must contain information in the appropriate languages regarding the importance of the notice, or ~~the materials~~ it must contain a telephone number or address where a ~~water consumer person served~~ water consumer may contact the supplier to obtain a translated copy of the public education materials or to request assistance in the appropriate language.
- 2) A CWS supplier ~~exceeding that exceeds~~ the lead action level on the basis of tap water samples ~~under collected in accordance with~~ Section 611.356 ~~and which is~~ not already conducting public education tasks under this Section must, ~~within 60 days after the end of the monitoring period in which the exceedance occurred,~~ within 60 days after the end of the tap sampling period in which the exceedance occurred ~~according to the following requirements:~~
  - A) The CWS supplier must deliver printed materials complying with ~~that meet the content requirements of~~ subsection (a) to all of its bill-paying customers.
  - B) Methods of Delivery for a CWS Supplier
    - i) The CWS supplier must contact customers who are most at risk by delivering education materials complying with ~~that meet the content requirements of~~ subsection (a) to local public health agencies, even if ~~those~~ the agencies ~~are~~ not

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located within the supplier's service area, along with an informational notice ~~encouraging that encourages~~ distribution to all of the agencies' potentially affected customers or the supplier's ~~consumers~~users. The supplier must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community-based organizations ~~servicing that serve~~the target populations, which may include organizations outside the service area of the supplier. If ~~local health agencies provide such lists are provided~~, the supplier must deliver education materials that ~~comply with meet the content requirements of~~ subsection (a) to each of the organizations on the provided lists.

- ii) The CWS supplier must contact customers who are most at risk by delivering materials ~~complying with that meet the content requirements of~~ subsection (a) to the organizations ~~listed~~in subsections (b)(2)(H)(i) through (b)(2)(H)(vi) that are located within the supplier's service area, along with an informational notice ~~encouraging that encourages~~ distribution to all the organization's potentially affected customers or supplier's users.

BOARD NOTE: The Board ~~moved found it necessary to move~~the text of 40 CFR 141.85(b)(2)(ii)(B)(1) through (b)(2)(ii)(B)(6); to appear as ~~subsections~~ subsection (b)(2)(H)(i) through ~~subsection~~(b)(2)(H)(vi); ~~in order~~ to comport with ~~Illinois Administrative Code codification requirements relating to~~allowed indent levels ~~in rules~~.

- iii) ~~The CWS supplier must make a good faith effort to locate the organizations listed in subsections (b)(2)(I)(i) through (b)(2)(I)(iii) that are located within the service area and deliver materials that meet the content requirements of subsection (a) to them, along with an informational notice that encourages distribution to all potentially affected customers or users. The good faith effort to contact at risk customers may include requesting a specific contact list of these organizations from the local public health agencies;~~

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~~even if the agencies are not located within the supplier's service area.~~

~~BOARD NOTE: The Board found it necessary to move the text of 40 CFR 141.85(b)(2)(ii)(C)(1) through (b)(2)(ii)(C)(3), to appear as subsection (b)(2)(I)(i) through subsection (b)(2)(I)(iii), in order to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.~~

- C) No less often than quarterly, the CWS supplier must provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the ~~verbatim text of the paragraph below following statement exactly as written~~, except ~~replacing for~~ the text in brackets ~~with for which the supplier must include~~ system-specific information:

[INSERT NAME OF SUPPLIER] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF SUPPLIER] [or visit (INSERT SUPPLIER'S WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the Illinois Environmental Protection Agency, Division of Public Water Supply; specifically, the Agency may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

- D) The CWS supplier must post material ~~complying with meeting the content requirements of~~ subsection (a) on the supplier's Web site if the CWS supplier serves a population greater than 100,000.
- E) The CWS supplier must submit a press release to newspaper, television, and radio stations.
- F) In addition to subsections (b)(2)(A) through (b)(2)(E), the CWS supplier must implement at least three activities from one or more

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of the categories listed below. The supplier must consult with the Agency to determine the educational content and selection of these activities ~~must be determined in consultation with the Agency.~~

- i) Public service announcements ~~Service Announcements~~.
  - ii) Paid advertisements.
  - iii) Public area information displays ~~Area Information Displays~~.
  - iv) E-mails to customers.
  - v) Public meetings ~~Meetings~~.
  - vi) Household deliveries ~~Deliveries~~.
  - vii) Targeted individual customer contact ~~Individual Customer Contact~~.
  - viii) Direct material distribution to all multi-family homes and institutions.
  - ix) Other Agency-approved methods ~~approved by the State~~.
- G) For a CWS supplier that must monitor ~~is required to conduct monitoring~~ annually or less frequently, the end of the tap sampling ~~monitoring~~ period is September 30 of the calendar year in which the sampling occurs, or on the last day of, if the Agency has established an alternative tap sampling ~~alternate monitoring~~ period the Agency sets in, by a SEP, the last day of that period.
- H) Organizations That ~~that~~ the CWS Supplier Must Contact When Required to Do So under Subsection (b)(2)(B)(iii)
- i) Schools, child care facilities, and ~~Public and private schools or~~ school boards.

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- ii) Women, Infants and Children (WIC) and Head Start programs.
- iii) Public and private hospitals and medical clinics.
- vi) Pediatricians.
- v) Family planning clinics.
- vi) Local welfare agencies.
- vii) Obstetricians-gynecologists and midwives.

BOARD NOTE: This subsection (b)(2)(H) derives from ~~corresponds with~~ 40 CFR 141.85(b)(2)(ii)(B)(1) through (b)(2)(ii)(B)(76), moved here. ~~The Board found it necessary to move the text of those federal provisions to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.~~

- ~~f) Organizations that the CWS Supplier Must Contact When Required to Do So Under Subsection (b)(2)(B)(iii)~~
  - ~~i) Licensed childcare centers.~~
  - ~~ii) Public and private preschools.~~
  - ~~iii) Obstetricians-gynecologists and midwives.~~

~~BOARD NOTE: This subsection (b)(2)(H) corresponds with 40 CFR 141.85(b)(2)(ii)(C)(1) through (b)(2)(ii)(C)(3). The Board found it necessary to move the text of those federal provisions to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.~~

- 3) As long as a CWS supplier exceeds the action level, it must repeat the activities ~~described~~ in subsection (b)(2), as ~~described in~~ subsections (b)(3)(A) through (b)(3)(D) require.

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- A) ~~The A-CWS~~ supplier must repeat the tasks ~~contained~~ in subsections (b)(2)(A), (b)(2)(B), and (b)(2)(D) every 12 months.
- B) ~~The A-CWS~~ supplier must repeat tasks ~~contained~~ in subsection (b)(2)(C) with each billing cycle.
- C) ~~The A-CWS~~ supplier serving a population greater than 100,000 must post and retain material on a publicly accessible ~~website~~ Web site under subsection (b)(2)(D).
- D) The CWS supplier must repeat the task in subsection (b)(2)(E) twice every 12 months on a schedule agreed ~~by upon with~~ the Agency ~~in by~~ a SEP. The Agency must, on a case-by-case basis, ~~issue by~~ a SEP ~~extending, extend~~ the time for the supplier to complete the public education tasks ~~set forth~~ in subsection (b)(2) beyond the 60-day limit if ~~the Agency it~~ determines that the ~~supplier needs the~~ extended time ~~to implement the tasks~~ is needed for implementation purposes; however, the Agency must issue the SEP granting any extension ~~before prior to expiration of~~ the 60-day deadline expires.
- 4) Within 60 days after the end of the ~~tap sampling monitoring~~ period in which a NTNCWS supplier exceeds the lead action level (unless it already is repeating public education tasks under subsection (b)(5)), ~~the supplier it~~ must deliver the public education materials ~~specified by~~ subsection (a) specifies.
- A) The ~~supplier must deliver the~~ public education materials ~~by certain means must be delivered as follows~~:
- i) The NTNCWS supplier must post informational posters on lead in drinking water in a public place or common area in each of the buildings ~~served by~~ the supplier serves; and
- ii) The NTNCWS supplier must distribute informational pamphlets or brochures on lead in drinking water to each person ~~served by~~ the NTNCWS supplier serves. The Agency may ~~issue, by~~ a SEP ~~allowing, allow~~ the system to use utilize electronic transmission in lieu of or combined

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with printed materials as long as the electronic transmission ~~it achieves at least~~ the same or better coverage.

- B) For a NTNCWS supplier that must monitor ~~is required to conduct monitoring~~ annually or less frequently, the end of the tap sampling monitoring ~~monitoring~~ period is September 30 of the calendar year in which the sampling occurs, or on the last day of, ~~if the Agency has established an alternative tap sampling alternate monitoring~~ the Agency sets in, ~~by a SEP, the last day of that period.~~
- 5) A NTNCWS supplier must repeat the tasks ~~set forth~~ in subsection (b)(4) at least once during each calendar year in which the supplier exceeds the lead action level. The Agency must, on a case-by-case basis, issue by ~~extend~~ a SEP extending, ~~extend~~ the time for the supplier to complete the public education tasks ~~set forth~~ in subsection (b)(2) beyond the 60-day limit if the Agency ~~it~~ determines that the extended time is needed for implementation purposes; however, the Agency must issue any the ~~any~~ SEP granting any extension before prior to expiration of the 60-day deadline expires.
- 6) A supplier may stop delivering ~~discontinue delivery of~~ public education materials after the supplier does not exceed ~~it has met~~ the lead action level during the most recent six-month tap monitoring cycle period conducted under Section 611.356. The ~~Such a~~ supplier must begin public education anew under in accordance with this Section if the supplier ~~it~~ subsequently exceeds the lead action level during any tap sampling six-month monitoring ~~monitoring~~ period.
- 7) A CWS supplier may apply to the Agency, in writing, to use only the text ~~specified~~ in subsection (a)(1) in lieu of the text in subsections (a)(1) and (a)(2) and to perform the tasks ~~listed~~ in subsections (b)(4) and (b)(5) in lieu of the tasks in subsections (b)(2) and (b)(3) under specific circumstances if the following are true:
- A) The supplier is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and
- B) The supplier system ~~provides~~ water as part of the cost of services



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provided, ~~and it does~~ not separately charging charge for water consumption.

- 8) A CWS supplier servicing that serves 3,300 or fewer people may limit certain aspects of its public education programs ~~as follows~~:
- A) For notice under ~~With respect to the requirements of~~ subsection (b)(2)(F), a supplier servicing that serves 3,300 or fewer people must implement at least one of the activities ~~listed~~ in that subsection.
  - B) For notice under ~~With respect to the requirements of~~ subsection (b)(2)(B), a supplier servicing that serves 3,300 or fewer people may limit the distribution of the public education materials required under that subsection to facilities and organizations that ~~it serves which are most likely to be visited regularly by~~ pregnant women and children are most likely to visit.
  - C) For notice under ~~With respect to the requirements of~~ subsection (b)(2)(E), the Agency may ~~issue, by~~ a SEP waiving, waive this requirement for a supplier servicing that serves 3,300 or fewer persons, as long as the supplier distributes notices to every household the supplier that it serves.
- c) Supplemental Monitoring and Notification of Results. A supplier failing that fails to meet the lead action level in on the basis of tap samples under collected in accordance with Section 611.356 must offer to sample the tap water of any customer requesting who requests it. The supplier needs is not ~~required to~~ pay for collecting or analyzing the sample, nor ~~must is~~ the supplier itself required to collect and analyze the sample ~~itself~~.
- d) Requirement for Consumer Notice of Tap Water Monitoring Results
- 1) Consumer Notice Requirement. A supplier must provide a notice of the individual tap results from lead tap water monitoring ~~carried out under the requirements of~~ Section 611.356 to the persons served by the water system serves at the specific sampling site from which the supplier took the sample ~~was taken~~ (e.g., the occupants of the building residence where the supplier sampled the tap ~~was tested~~).

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- 2) Timing of Consumer Notice. The supplier must provide the consumer notice as soon as practicable ~~practical~~, but no later than the specified timeframe:
- A) For individual samples not exceeding 15 µg/l of lead, no later than 30 days after the supplier ~~it~~ learns of the tap monitoring results.
- B) For individual samples exceeding 15 µg/l of lead, as soon as practicable but no later than three calendar days after the supplier learns of the tap monitoring results. A supplier choosing to mail the notification must post those letters so they receive postmarks within the three days.
- 3) Content of Consumer Notice. The consumer notice must include the results of lead tap water monitoring for the tap the supplier ~~that was~~ tested, an explanation of the health effects of lead, a list of steps ~~that~~ consumers can take to reduce exposure to lead in drinking water, and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from Section 611.883(c).
- 4) Delivery of Consumer Notice.
- A) For tap sampling lead results not exceeding 15 µg/l, the supplier must provide the ~~The~~ consumer notice ~~must be provided~~ to persons ~~it serves~~ ~~served~~ at the tap the supplier sampled ~~that was tested~~, ~~either~~ by mail or by another method ~~approved by~~ the Agency approves in, ~~by~~ a SEP. For example, upon Agency approval ~~by the Agency~~, a NTNCWS supplier could post the results on a bulletin board in the facility enabling ~~to allow~~ users to review the information. ~~The supplier must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.~~
- B) For tap sampling lead results exceeding 15 µg/l, the supplier must provide consumer notice to persons it serves at the tap the supplier sampled; the supplier must provide this notice electronically or by phone, hand delivery, mail, or another method the Agency approves in a SEP.

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- e) Notice of Known or Potential Service Line Containing Lead
- 1) Notice requirements. A supplier having lead, galvanized requiring replacement, or lead status unknown service lines in their inventory under Section 611.354(a) must inform all persons the supplier serves through a lead, galvanized requiring replacement, or lead status unknown service line.
  - 2) Timing of notice. A supplier must provide the initial notice within 30 days after completing the lead service line inventory Section 611.354 requires and annually repeat the notice to each person the supplier serves until the supplier's entire service connection is no longer a lead, galvanized requiring replacement, or lead status unknown service line. For each new customer, the supplier must also provide the notice when the supplier initiates service.
  - 3) Notice Content
    - A) Persons the Supplier Serves Through a Confirmed Lead Service Line. The notice must state that the supplier serves the person through a lead service line; explain the health effects of lead in a way complying with subsection (a)(1)(B); give steps persons at the service connection can take to reduce exposure to lead in drinking water; inform about opportunities to replace lead service lines, including programs providing financing solutions to assist property owners to replace the customer-owned portion of a lead service line; and explain that the supplier must replace the supplier-owned portion of a lead service line when the property owner notifies the supplier that the owner will replace the customer-owned portion of the lead service line.
    - B) Persons the Supplier Serves Through a Galvanized Requiring Replacement Service Line. The notice must state that the supplier serves the person through a galvanized requiring replacement service line, explain the health effects of lead in a way complying with subsection (a)(1)(B), give steps persons at the service connection can take to reduce exposure to lead in drinking water, and inform about opportunities to replace the service line.

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- C) Persons the Supplier Serves Through a Lead Service Line. The notice must state that the supplier serves the person through a lead status unknown service line (a service line whose material is unknown but may be lead), explain the health effects of lead in a way complying with subsection (a)(1)(B), give steps persons at the service connection can take to reduce exposure to lead in drinking water, and inform about opportunities to verify the material of the service line.
- 4) Delivery. The supplier must provide notice to persons the supplier serves at the service connection with a lead, galvanized requiring replacement, or lead status unknown service line, by mail or using another method the Agency approves in a SEP.
- f) Notice Due to Disturbing a Service Line Known to or Potentially Containing Lead
- 1) A supplier disturbing a lead, galvanized requiring replacement, or lead status unknown service line by a water shutoff or bypass to the service line, like operating a valve on the service line or meter setter, without partially or fully replacing the lead service line must inform the persons the supplier serves through the service connection about the potential for an elevated lead concentration in their drinking water due to the supplier disturbing the service line, including instructions for flushing to remove particulate lead. The supplier must comply with this subsection (f)(1) before returning the affected service line to service.
- 2) If a supplier disturbs a lead, galvanized requiring replacement, or lead status unknown service line while replacing an inline water meter, a water meter setter, or gooseneck, pigtail, or connector, the supplier must inform the persons the supplier serves through the service connection about the potential for an elevated lead concentration in their drinking water due to the supplier disturbing the service line, provide public education materials complying with subsection (a), a pitcher filter or point-of-use treatment device to reduce lead, use instructions, and six months of replacement filter cartridges. The supplier must comply with this subsection (f)(2) before returning the affected service line to service.

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- 3) A supplier partially or fully replacing a lead service line must follow applicable procedures in Section 611.354(d)(1)(A) through (d)(1)(D) or (e)(1)(A) through (e)(1)(D).
- g) Information for Persons the Supplier Serves Through a Service Line Known to or Potentially Containing Lead When the Supplier Exceeds the Lead Trigger Level
- 1) Content. A supplier having lead service lines and exceeding the lead trigger level of 10 µg/ℓ must inform persons the supplier serves through a lead, galvanized requiring replacement, or lead status unknown service line about the supplier's lead service line replacement program and opportunities for replacing the customer's lead service line.
  - 2) Timing. The supplier must inform persons it serves within 30 days after the end of the tap sampling period during which the supplier exceeded the lead trigger level. The supplier must continue to annually inform the persons it serves until the results of sampling under Section 611.356 do not exceed the lead trigger level.
  - 3) Delivery. The supplier must inform the persons it serves through a lead, galvanized requiring replacement, or lead status unknown service line by mail or another method the Agency approves in a SEP.
- h) Outreach Activities for Failing to Fulfill the Lead Service Line Replacement Goal
- 1) In the first year after a CWS supplier serving more than 10,000 persons does not fulfill its required annual lead service line replacement goal under Section 611.354(f), the supplier must conduct one outreach activity from among those in subsections (h)(1)(A) through (h)(1)(B). The supplier must annually conduct an outreach activity under this subsection (h)(1) until the supplier fulfills its replacement goal or until tap sampling shows that its 90th percentile lead concentration does not exceed the trigger level of 10 µg/ℓ for two consecutive tap monitoring cycles:
    - A) Send certified mail to customers the supplier serves through a lead or galvanized requiring replacement service line to inform them about the supplier's goal-based program for replacing lead service lines and opportunities for replacing the customer's service line.

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- B) Conduct a townhall meeting.
  - C) Participate in a community event providing information about the supplier's program for replacing lead service lines and distribute public education materials whose content complies with subsection (a).
  - D) Contact customers by phone, text message, email, or door hanger.
  - E) Use another method the Agency approves in a SEP to discuss the supplier's program for replacing lead service lines and opportunities for replacing the customer's lead service line.
- 2) Following the first year after the supplier exceeds the lead trigger level, a supplier still failing to fulfill its goal for replacing lead service lines must conduct one activity from subsection (h)(1) and two additional outreach activities each year from among those in subsections (h)(2)(A) through (h)(2)(D):
- A) Conduct social media campaign.
  - B) Conduct outreach via newspaper, television, or radio.
  - C) Contact organizations representing plumbers and contractors by mail providing information about lead in drinking water, including health effects, sources of lead, and the importance of using lead-free plumbing materials.
  - D) Visit targeted customers to discuss the supplier's program for replacing lead service lines and opportunities for replacing the customers' lead service lines.
- 3) The supplier may stop outreach activities when tap sampling shows that its 90th percentile lead concentration no longer exceeds the trigger level of 10 µg/l for two consecutive tap monitoring cycles or when all customers the supplier serves through lead or galvanized requiring replacement service lines refuse to participate in replacing the customer-owned portion under the supplier's program for replacing lead service lines. Under this subsection (h)(3), a refusal includes a customer-signed statement refusing

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to participate in replacing the customer-owned portion of the lead service line or supplier-generated documents memorializing the customer's verbal refusal or non-response after two good faith attempts by the supplier to reach the customer.

- i) Public Education to Local and State Health Agencies
  - 1) Find-and-Fix Results. A CWS supplier must inform the Department of Public Health and local health agencies about its find-and-fix activities under Section 611.352(j), including the location of the tap sample sites exceeding 15 µg/l, the results from initial tap samples, the results from follow-up tap samples, the results from water quality parameter monitoring, and any distribution system management actions or corrosion control treatment adjustments the supplier made.
  - 2) Timing and Content. A CWS supplier must annually send copies of the public education materials the supplier provided under subsections (a) and (h)(1) during a calendar year no later than July 1 of the following year.
  - 3) Delivery. The CWS supplier must send the public education materials and find-and-fix information to the Department of Public Health and local health agencies by mail or by another method the Agency approves in a SEP.
- j) Public Education for Small Supplier Compliance Flexibility POU Devices
  - 1) Content. A small CWS or NTNCWS supplier implementing the POU device option under Section 611.363 must provide public education materials to inform users how to properly use POU devices to maximize the units' effectiveness in reducing the lead concentration in drinking water.
  - 2) Timing. The supplier must provide its public education materials when the supplier delivers the POU device.
  - 3) Delivery. The supplier must provide its public education materials in person, by mail, or another method the Agency approves in a SEP, to persons at the locations where the supplier delivers the POU devices.

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BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.85.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.356 Tap Water Monitoring for Lead and Copper**

## a) Sampling Site Location

## 1) Selecting a Pool of Targeted Sampling Sites

- A) Before ~~By~~ the applicable date for beginning commencement of monitoring under subsection (d)(1), a each supplier must complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites complying with that meets the requirements of this Section based on the service line inventory the supplier developed under Section 611.354(a).
- B) The pool of targeted sampling sites must be sufficiently large enough to ensure that the supplier can collect the number of lead and copper tap samples ~~required by~~ subsection (c) requires.
- C) The supplier may not include among its sampling sites any with installed POE treatment devices, and the tap the supplier uses at a sampling site may not have a POU device designed to remove inorganic contaminants. The exceptions are that a supplier monitoring under Section 611.363(a)(3)(D) and a supplier using a POE or POU device for the primary drinking water tap to meet other primary and secondary drinking water standards may sample the connected tap if all service connections on the supplier's system have a POE or POU device to provide localized treatment to comply with those other drinking water standards. ~~must select the sites for collection of first draw samples from this pool of targeted sampling sites.~~
- D) A supplier monitoring under Section 611.363(a)(3)(D) may not use lead and copper sampling results to fulfill the criteria for reduced monitoring under subsection (d)(4). ~~The supplier must not select as sampling sites any faucets that have point of use or point of entry treatment devices designed to remove or capable of removing~~



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~~inorganic contaminants.~~

- 2) ~~Materials Evaluation. A supplier must use the information on lead, copper, and galvanized steel it identified under 40 CFR 141.42(d) when conducting a materials evaluation and the information on lead service lines that Section 611.354(a) requires the supplier to collect to identify potential lead service line sampling sites.~~

~~BOARD NOTE: Suppliers completed identifying and reporting construction materials in their distribution systems under 40 CFR 141.42(d), so the Board omitted this requirement from the Illinois rules.~~

- ~~A) A supplier must use the information on lead, copper, and galvanized steel collected under 40 CFR 141.42(d) (special monitoring for corrosivity characteristics) when conducting a materials evaluation.~~
- ~~B) When an evaluation of the information collected under 40 CFR 141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in subsection (a), the supplier must review the following sources of information in order to identify a sufficient number of sampling sites:~~
- ~~i) All plumbing codes, permits, and records in the files of the building departments that indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system;~~
  - ~~ii) All inspections and records of the distribution system that indicate the material composition of the service connections which connect a structure to the distribution system;~~
  - ~~iii) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations; and~~

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- iv) ~~The supplier must seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities).~~
- 3) ~~Tiers of Sampling Site Tiers Sites.~~ A supplier Suppliers must categorize the sampling sites within its their pool according to the following tiers:
- A) CWS Tier 1 Sampling Sites. "CWS Tier 1 sampling sites" ~~must~~ include the following single-family structures the supplier serves through a lead service line. The supplier must not use sites with lead status unknown service lines as Tier 1 sampling sites.:
- i) ~~Those that contain copper pipes with lead solder installed after 1982 or which contain lead pipes; or~~
- ii) ~~Those that are served by a lead service line.~~
- BOARD NOTE: ~~This subsection Subsection (a)(3)(A) derives was derived from segments of 40 CFR 141.86(a)(3). This allows the pool of CWS tier 1 sampling sites to consist exclusively of structures served by lead service lines.~~
- B) CWS Tier 2 Sampling Sites. "CWS Tier 2 sampling sites" ~~must~~ include the following buildings, including multiple-family structures, the supplier serves through a lead service line. The supplier must not use sites with lead status unknown service lines as Tier 2 sampling sites.:
- i) ~~Those that contain copper pipes with lead solder installed after 1982 or contain lead pipes; or~~
- ii) ~~Those that are served by a lead service line.~~

BOARD NOTE: ~~This subsection Subsection (a)(3)(B) derives was derived from segments of 40 CFR 141.86(a)(4). This allows the pool of CWS tier 2 sampling sites to consist exclusively of structures served by lead service lines.~~

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- C) CWS Tier 3 Sampling Sites. "CWS Tier 3 sampling sites" ~~must~~ include ~~the following~~ single-family structures containing galvanized service lines the supplier identified as currently or formerly downstream of a lead service line or known to be downstream of a lead gooseneck, pigtail, or connector; those that contain copper pipes with lead solder installed before 1983. The supplier must not use sites with lead status unknown service lines as Tier 3 sampling sites.

BOARD NOTE: This subsection Subsection (a)(3)(C) derives was derived from segments of 40 CFR 141.86(a)(5).

- D) CWS Tier 4 Sampling Sites. "CWS Tier 4 sampling sites" include single-family structures or buildings containing copper pipes with lead solder installed before June 19, 1986.

BOARD NOTE: This subsection (a)(3)(D) derives from segments of 40 CFR 141.86(a)(6).

- E) CWS Tier 5 Sampling Sites. "CWS Tier 5 sampling sites" include single-family structures, including multiple-family residences, representing sites throughout the supplier's distribution system. The supplier must not use sites with lead status unknown service lines as Tier 5 sampling sites. Under this subsection (a)(3)(E) and subsection (a)(4)(A)(vi), a site representing sites throughout the distribution system has plumbing materials commonly found at the other sites the supplier serves.

BOARD NOTE: This subsection (a)(3)(E) derives from segments of 40 CFR 141.86(a)(7).

- ~~F)~~ NTNCWS Tier 1 Sampling Sites. "NTNCWS Tier 1 sampling sites" ~~must~~ include sites that the supplier serves through a lead service line. The supplier must not use sites with lead status unknown service lines as Tier 1 sampling sites.~~the following buildings:~~

- i) ~~Those that contain copper pipes with lead solder installed after 1982 or which contain lead pipes; or~~

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- ii) ~~Those that are served by a lead service line.~~

BOARD NOTE: ~~This subsection Subsection (a)(3)(FD) derives was derived from segments of 40 CFR 141.86(a)(86). This allows the pool of NTNCWS tier 1 sampling sites to consist exclusively of buildings served by lead service lines.~~

- ~~GE)~~ Alternative NTNCWS Tier 3 Sampling Sites. "Alternative NTNCWS Tier 3 sampling sites" ~~must include sites having galvanized lines the supplier identified as currently or formerly downstream of a lead service line or known to be downstream of a lead gooseneck, pigtail, or connector~~ the following buildings: those that contain copper pipes with lead solder installed before 1983. The supplier must not use sites with lead status unknown service lines as Tier 3 sampling sites.

BOARD NOTE: ~~This subsection Subsection (a)(3)(GE) derives was derived from segments of 40 CFR 141.86(a)(97).~~

- ~~H)~~ NTNCWS Tier 5 Sampling Sites. "NTNCWS Tier 5 sampling sites" include sites representing sites throughout the supplier's distribution system. Under this subsection (a)(3)(H), a site representing sites throughout the distribution system has plumbing materials commonly found at the other sites the supplier serves.

BOARD NOTE: This subsection (a)(3)(H) derives from segments of 40 CFR 141.86(a)(10).

- 4) ~~Selecting Selection of~~ Sampling Sites. ~~A supplier Suppliers~~ must select sampling sites for its their sampling pool using specific criteriaas follows:
- A) CWS Suppliers. ~~A CWS supplier suppliers~~ must use CWS Tier tier-1 sampling sites, except that the supplier may include CWS Tier tier-2 or CWS Tier tier-3 sampling sites in its sampling pool under certain circumstances as follows:
- i) ~~If multiple-family residences comprise at least 20 percent of the structures the supplier serves served by a supplier,~~

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the supplier may use CWS ~~Tier tier-2~~ sampling sites in its ~~Tier 1~~ sampling pool, if the supplier serves the sampling site through a lead service line.~~;~~~~or~~

BOARD NOTE: This subsection ~~Subsection~~-(a)(4)(A)(i) ~~derives was derived~~ from a segment of 40 CFR 141.86(a)(3)(ii).

- ii) If the CWS supplier ~~does not have a sufficient~~ has an insufficient number of CWS ~~Tier tier-1~~ sampling sites on its distribution system, the supplier may use CWS ~~Tier tier-2~~ sampling sites the supplier serves through a lead service line in its sampling pool; or

BOARD NOTE: This subsection ~~Subsection~~-(a)(4)(A)(ii) ~~derives was derived~~ from a segment of 40 CFR 141.86(a)(4).

- iii) If the CWS supplier ~~does not have a sufficient~~ has an insufficient number of CWS ~~Tier tier-1~~ and CWS ~~Tier tier-2~~ sampling sites on its distribution system, the supplier may complete its sampling pool with CWS ~~Tier tier-3~~ sampling sites.

BOARD NOTE: This subsection ~~Subsection~~-(a)(4)(A)(iii) ~~derives was derived~~ from a segment of 40 CFR 141.86(a)(5).

- iv) If the CWS supplier ~~does not have a sufficient~~ has an insufficient number of CWS ~~Tier tier-1~~ sampling sites, CWS ~~Tier tier-2~~ sampling sites, and CWS ~~Tier tier-3~~ sampling sites, the supplier must complete its sampling pool with CWS Tier 4 ~~use those CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites that it has and complete its sampling pool with representative sites throughout its distribution system for the balance of its sampling sites. For the purpose of this subsection (a)(4)(A)(iv), a representative site is a site in which the plumbing materials used at that site would be~~

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~~commonly found at other sites served by the water system.~~

BOARD NOTE: ~~This subsection Subsection (a)(4)(A)(iv) derives was derived~~ from segments of 40 CFR 141.86(a)(~~65~~).

- v) If a CWS supplier does not have a sufficient number of CWS Tier 1, CWS Tier 2, CWS Tier 3, and CWS Tier 4 sampling sites, the CWS supplier must complete its sampling pool with CWS Tier 5 sampling sites.

BOARD NOTE: This subsection (a)(4)(A)(v) derives from a segment of 40 CFR 141.86(a)(7).

- vi) A supplier may use non-residential buildings representing sites throughout its distribution system only if there are an insufficient number of single-family or multiple-family residential Tier 5 sampling sites available.

BOARD NOTE: This subsection (a)(4)(A)(vi) derives from a segment of 40 CFR 141.86(a)(7).

B) NTNCWS Suppliers

- i) An NTNCWS supplier must select NTNCWS ~~Tier tier~~-1 sampling sites for its sampling pool.

BOARD NOTE: ~~This subsection Subsection (a)(4)(B)(i) derives was derived~~ from segments of 40 CFR 141.86(a)(~~86~~).

- ii) If the NTNCWS supplier has an insufficient number of NTNCWS ~~Tier tier~~-1 sampling sites, the supplier ~~must may~~ complete its sampling pool with ~~alternative~~-NTNCWS Tier 3 sampling sites.

BOARD NOTE: ~~This subsection Subsection (a)(4)(B)(ii) derives was derived~~ from segments of 40 CFR 141.86(a)(~~97~~).

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- iii) If the NTNCWS supplier has an insufficient number of NTNCWS ~~Tier tier-1 and Tier 3~~ sampling sites ~~and NTNCWS alternative sampling sites~~, the supplier must complete its sampling pool with Tier 5 NTNCWS sampling sites ~~use representative sites throughout its distribution system~~. For the purpose of this subsection (a)(4)(B)(ii), a representative site is a site where ~~in which~~ the plumbing materials are used at that site ~~would be~~ commonly found at other sites ~~served by~~ the water system serves.

BOARD NOTE: This subsection ~~Subsection~~ (a)(4)(B)(iii) derives ~~was derived~~ from segments of 40 CFR 141.86(a)(~~107~~).

- C) Suppliers with Lead Service Lines. Any supplier whose distribution system contains lead service lines must collect all samples for monitoring under this Section ~~draw samples during each six month monitoring period~~ from sampling sites the supplier serves through a lead service line. A supplier that cannot identify a sufficient number of sampling sites that it serves through lead service lines must still collect samples from every site the supplier serves though a lead service line and collect the remaining samples under subsections (a)(4)(A)(iii) through (a)(4)(A)(vi) or subsections (a)(4)(B)(ii) and (a)(4)(B)(iii). ~~as follows:~~

- i) ~~50 percent of the samples from sampling sites that contain lead pipes or from sampling sites that have copper pipes with lead solder; and~~
- ii) ~~50 percent of those samples from sites served by a lead service line.~~
- iii) ~~A supplier that cannot identify a sufficient number of sampling sites served by a lead service line must collect first draw samples from all of the sites identified as being served by such lines.~~

BOARD NOTE: This subsection ~~Subsection~~ (a)(4)(C) derives ~~was~~

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~~derived from segments of 40 CFR 141.86(a)(118). This allows the pool of sampling sites to consist exclusively of structures or buildings served by lead service lines.~~

- b) Sample-Collecting ~~Sample Collection~~ Methods
- 1) All tap samples a supplier collects for lead and copper ~~under collected in accordance with this Subpart G, with the exception of fifth-liter tap samples the supplier collects under subsection (b)(3) and samples the supplier collects under subsections (b)(5) and (h) lead service line samples collected under Section 611.354(c) and samples collected under subsection (b)(5),~~ must be first-draw tap samples. The supplier must analyze the first-draw tap sample for lead and copper during tap sampling periods when the supplier must monitor both contaminants. In tap sampling periods during which the supplier must monitor only lead, the supplier may analyze the first-draw tap sample for lead only.
  - 2) First-Draw Tap Samples
    - A) A ~~Each~~ first-draw tap sample for lead and copper must be one liter in volume and have stood motionless at least six hours in the plumbing system of the ~~each~~ sampling site ~~for at least six hours~~.
    - B) The supplier must use wide-mouthed bottles to collect first-draw tap samples.
    - ~~CB)~~ For residential housing, the supplier must collect first-draw tap ~~First draw samples from residential housing must be collected from the~~ cold-water ~~cold water~~ kitchen tap or bathroom sink tap.
    - ~~DC)~~ For non-residential buildings, the supplier must collect first-draw tap ~~First draw samples one-liter in volume from a~~ from a non-residential building must be one liter in volume and must be collected at an interior tap ~~occupants from which water is typically use drawn for consuming water~~ consumption.
    - ~~ED)~~ The Agency-approved substitute non-first-draw tap ~~Non first draw samples the supplier collects~~ collected in lieu of first-draw tap ~~samples under subsection (b)(5) must be one liter in volume~~ from



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~~and must be collected at an interior tap occupants from which water is typically use drawn for consuming water consumption.~~

- ~~FE)~~ The supplier may collect first-draw tap ~~First draw samples may be collected by the supplier or the supplier may allow residents to collect first-draw~~ tap samples after instructing the residents in of the sampling procedures specified in this subsection (b) specifies.
- i) Sampling instructions the supplier provides to residents must not include instructions for removing the aerator and cleaning or flushing taps before the minimum six-hour stagnation period begins.
- ii) To avoid problems of residents handling nitric acid, the supplier may acidify acidification of first-draw tap samples may be done up to 14 days after the supplier or a resident collects the sample is collected.
- iii) After adding acid acidification to resolubilize the metals, a the sample must stand in its the original container for the time specified in the USEPA-approved approved USEPA method specifies before the laboratory analyzes the sample can be analyzed.
- ~~GF)~~ If a supplier allows residents to perform sampling under subsection (b)(2)(D), the supplier may not challenge the accuracy of sampling results based on alleged errors in sample collection.
- 3) Service Line Samples
- A) A supplier must collect all tap samples for copper at sites it serves through a lead service line as a first-draw tap sample using the procedure in this subsection (b)(3). The supplier must collect and analyze tap samples for copper only during tap monitoring cycles when the supplier must monitor copper. Each service line sample must be one liter in volume and have stood motionless in the lead service line for at least six hours.
- B) First-Draw and Fifth-Liter Tap Water Samples

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- i) A supplier must collect tap water samples in five consecutively numbered wide-mouthed bottles after the water has stood motionless in the sampling site's plumbing for at least six hours without flushing the tap prior to collecting the sample.
- ii) The supplier must analyze first-draw tap samples for copper, when applicable, and fifth-liter tap samples for lead.
- iii) The supplier must use wide-mouthed bottles to collect these samples. The supplier must collect the first-draw tap sample in the first numbered bottle, then sequentially fill each numbered bottle until the final bottle is full with the fifth-liter tap sample, constantly running the water while collecting the samples. The fifth-liter tap sample is the final sample collected in this sequence.
- iv) The supplier must collect first-draw and fifth-liter tap samples from residential housing from the cold-water kitchen or bathroom sink tap. The supplier must collect first-draw and fifth-liter tap samples from a nonresidential building at an interior cold water tap typically used for consuming water.
- v) The supplier may itself collect first-draw and fifth-liter tap samples or allow residents to collect the samples after instructing the residents on the sampling procedures in this subsection (b)(3)(B). The sampling instructions the supplier provides to customers must not direct the customer to remove the aerator or clean or flush the taps before the minimum six-hour stagnation period begins. To avoid problems from residents handling nitric acid, the supplier may acidify first-draw tap samples up to 14 days after the resident collects the sample. After the supplier acidifies the sample to resolubilize the metals, the sample must stand in its original container for the time a USEPA-approved method provides before analysis. If the supplier allows

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residents to sample, the supplier may not challenge the accuracy of sampling results based on alleged errors collecting samples.

B) ~~Lead service line samples must be collected in one of the following three ways:~~

i) ~~At the tap after flushing that volume of water calculated as being between the tap and the lead service line based on the interior diameter and length of the pipe between the tap and the lead service line;~~

ii) ~~Tapping directly into the lead service line; or~~

iii) ~~If the sampling site is a single family structure, allowing the water to run until there is a significant change in temperature that would be indicative of water that has been standing in the lead service line.~~

4) Follow-Up First-Draw Tap Samples

A) A supplier must collect each follow-up first-draw tap sample from the same sampling site where from which it collected the previous samples originated. A supplier must collect each follow-up fifth-liter tap sample from the same sampling site where the previous sample originated.

B) ~~If, for any reason,~~ the supplier cannot access gain entry to a sampling site ~~in order~~ to collect a follow-up tap sample for reasons beyond the control of the supplier, the supplier may collect the follow-up tap sample from another sampling site in its sampling pool, as long as the new site meets the same targeting criteria and is within reasonable proximity of the original site.

5) Substitute Non-First-Draw Tap Samples

A) A NTNCWS supplier or a CWS supplier meeting that meets the criteria in of Sections 611.355(b)(7)(A) and (b)(7)(B), that does not having have enough taps for that can supply first-draw tap

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samples or fifth-liter tap samples meeting the six-hour minimum stagnation time, as defined in Section 611.102, may apply to the Agency in writing for a SEP allowing the supplier to substitute non-first-draw, first-draw, or fifth-liter tap samples that do not meet the six-hour minimum stagnation time by a SEP.

- B) A supplier approved to substitute non-first-draw tap samples must collect as many first-draw or fifth-liter tap samples from interior appropriate taps typically used for consuming water, as possible and must identify sampling times and locations that would likely give result in the longest standing time for the remaining sites.
- C) The Agency may grant a SEP waiving that waives the requirement for prior Agency approval of non first draw sampling sites not meeting selected by the six-hour stagnation timesystem.

## c) Number of Samples

- 1) A supplier Suppliers must collect at least one sample each from the number of sites listed in the first column of Table D (labelled "standard monitoring") during each six-month tap monitoring cycle period specified in subsection (d) specifies.
- 2) A supplier conducting reduced monitoring under subsection (d)(4) must collect one sample each from the number of sites specified in the second column of Table D (labelled "reduced monitoring") during each reduced tap monitoring cycle period specified in subsection (d)(4) specifies. The Such reduced monitoring sites must represent be representative of the sites required for standard monitoring requires. A supplier whose system has fewer than five drinking water taps capable of use that can be used for human consumption that and which can meet the sampling site criteria of subsection (a) to reach the required number of sampling sites listed in this subsection (e) must collect multiple samples from individual taps to reach the required number of sampling sites Table D requires. To accomplish this, the supplier must collect at least one sample from each tap, then it must collect additional samples from those same taps on different days during the tap sampling monitoring period, in order to collect a total number of samples meeting that meets the required number of sampling sites. Alternatively, the Agency may issue must, by a SEP allowing the;

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~~allow a~~ supplier whose system has fewer than five drinking water taps to collect a number of samples that is fewer than the number of sites ~~specified in~~ this subsection (c) specifies if ~~the Agency~~ ~~it~~ determines that the supplier samples 100 percent of all taps capable of use that can be used for human consumption ~~are sampled~~ and that the reduced number of samples will produce the same results as collecting would the collection of multiple samples from some taps. ~~The Any-Agency~~ must base any SEP approving a reduced approval of a reduction of the minimum number of samples ~~must be based~~ on a request from the supplier or Agency on on-site verification ~~by the Agency~~. The Agency may, ~~by a SEP~~, specify sampling locations in a SEP when a system conducts is conducting reduced monitoring.

## d) Timing of Monitoring

- 1) Standard Monitoring. Standard monitoring is a six-month tap monitoring cycle beginning on January 1 or July 1 of a year during which the supplier monitors at the standard number of sites under subsection (c).
  - A) A supplier having lead service lines, including a supplier Section 611.351(b)(3) deems to have optimized or re-optimized OCCT or a supplier that did not monitor complying with this Section (i.e., selecting sites under subsection (a), collecting samples under subsection (b), etc.) before January 16, 2024, must begin its first standard tap monitoring cycle on January 1, 2025. After completing the first standard monitoring cycle, the supplier must monitor under subsection (d)(1)(B).
  - B) A supplier that completed monitoring complying with this Section (i.e., selecting sites under subsection (a), collecting samples under subsection (b), etc.) before January 16, 2024 or a supplier that completed monitoring under subsection (d)(1)(A), must continue monitoring:
    - i) A supplier not meeting the criteria in subsection (d)(4) must conduct standard monitoring.
    - ii) A supplier meeting the criteria in subsection (d)(4) must continue to monitor under subsection (d)(4).

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- iii) A supplier monitoring at a reduced frequency under subsection (d)(4) and exceeding the lead or copper action level must resume standard monitoring on January 1 immediately after the tap monitoring cycle during which the supplier exceeded the action level. The supplier must also monitor water quality parameters as Section 611.357(b), (c), or (d) require.
- iv) A supplier monitoring at a reduced frequency and exceeding the lead trigger level but not the copper action level must monitor no less frequently than annually and must collect samples from the standard number of sites that subsection (c) establishes. The supplier must begin this monitoring in the calendar year after the tap monitoring cycle during which the supplier exceeded the lead trigger level. The supplier must also monitor water quality parameters as Section 611.357(b), (c), or (d) require.
- v) A supplier failing to operate at or above the minimum value or within the range of values for the water quality parameters the Agency specifies under Section 611.352(f) for more than nine days in any water quality monitoring period Section 611.357 specifies must conduct standard tap water monitoring and resume sampling for water quality parameters under Section 611.357(d). The supplier must begin this standard monitoring no later than the six-month tap monitoring cycle beginning January 1 of the calendar year after the supplier fails to comply with the Agency-specified water quality parameters.
- vi) A supplier becoming a large supplier not applying corrosion control treatment or any large supplier not applying corrosion control treatment having a 90th percentile lead concentration exceeding the lead practical quantitation limit must conduct standard monitoring for at least two consecutive six-month tap monitoring cycles, then continue monitoring under this subsection (d)(1)(B)(vi).

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- 1) ~~Six Month Sampling Periods. Six month sampling periods begin on January 1 and July 1 of each year.~~
  - A) ~~All large system suppliers must monitor during each consecutive six month period, except as provided in subsection (d)(4)(B).~~
  - B) ~~All small and medium sized system suppliers must monitor during each consecutive six month monitoring period until the following is true:~~
    - i) ~~The supplier exceeds the lead action level or the copper action level and is therefore required to implement the corrosion control treatment requirements under Section 611.351, in which case the supplier must continue monitoring in accordance with subsection (d)(2); or~~
    - ii) ~~The supplier meets the lead action level and the copper action level during each of two consecutive six month monitoring periods, in which case the supplier may reduce monitoring in accordance with subsection (d)(4).~~
- 2) Monitoring after ~~Installing Initial or Re-Optimized Installation of Corrosion Control Treatment, Installing and Source Water Treatment, Adding a New Source, or a Change in Treatment~~
  - A) A supplier installing or re-optimizing corrosion control treatment after exceeding the lead or copper action level must monitor for lead and copper every six months and comply with applicable Agency-designated water quality parameter values until the Agency issues a SEP specifying new water quality parameter values for optimal corrosion control.
  - B) A supplier reoptimizing corrosion control treatment after exceeding the lead trigger level but not exceeding the lead or copper action level must annually monitor for lead at the standard number of sites subsection (c) requires. The supplier must triennially analyze samples for copper. A small or mid-sized supplier not exceeding the lead trigger level in three annual tap monitoring cycles may reduce lead monitoring under subsection

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(d)(4).

- C) A supplier installing source water treatment under Section 611.353(a)(3) must monitor every six months until the supplier is at or below lead and copper action levels for two consecutive six-month tap sampling periods. A supplier not exceeding the lead or copper action level for two consecutive six-month tap monitoring cycles may reduce monitoring under subsection (d)(4).
- D) If a supplier gives prior notice to the Agency under Section 611.360(a)(3) of adding a new source or making a long-term change in treatment, the supplier must monitor every six months at the standard number of sites subsection (c) requires until the supplier is at or below the lead and copper action levels for two consecutive six-month monitoring cycles, unless the Agency issues a SEP determining that adding the new source or making the long-term change in treatment is not significant and does not warrant more frequent monitoring. A supplier not exceeding the lead action level, copper action level, or lead trigger level for two consecutive six-month tap sampling periods may reduce monitoring under subsection (d)(4).
- ~~A) Any large system supplier that installs optimal corrosion control treatment under Section 611.351(d)(4) must monitor during two consecutive six-month monitoring periods.~~
- ~~B) Any small or medium-sized system supplier that installs optimal corrosion control treatment under Section 611.351(e)(5) must monitor during two consecutive six-month monitoring periods before 36 months after the Agency approves optimal corrosion control treatment, as specified in Section 611.351(e)(6).~~
- ~~C) Any supplier that installs source water treatment under Section 611.353(a)(3) must monitor during two consecutive six-month monitoring periods before 36 months after completion of step 2, as specified in Section 611.353(a)(4).~~
- 3) Monitoring after the Agency Specifies ~~Specification of~~ Water Quality Parameter Values for OCCT~~Optimal Corrosion Control~~.



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- A) After the Agency specifies the values for water quality control parameters under Section 611.352(f), the supplier must conduct standard monitoring for two consecutive ~~monitor during each subsequent six-month tap monitoring cycles period, with the first six-month monitoring period to begin on the date the Agency specifies the optimal values.~~
- B) A supplier that must complete the re-optimization steps in Section 611.351(d) after exceeding the lead trigger level but not exceeding the lead or copper action level must monitor for two consecutive six-month tap monitoring cycles. The supplier may then reduce monitoring under subsection (d)(4) after the Agency issues a SEP approving reduced monitoring.
- 4) Reduced Monitoring Based on 90th Percentile Concentrations. Reduced monitoring refers to an annual or triennial tap monitoring cycle. A supplier's 90th percentile concentration determines the reduced monitoring frequency.
- A) Reducing Reduction to Annual Monitoring for Small and Medium Sized System Suppliers Meeting the Criteria for Reduced Monitoring Lead and Copper Action Levels. A small or medium sized system supplier meeting that meets the criteria for reduced monitoring under subsection (d)(4) must collect these samples from sampling sites the supplier identified under subsection (a). A supplier monitoring annually or less frequently must conduct lead and copper tap sampling during June, July, August, or September, unless the Agency approves a different tap sampling period under subsection (d)(4)(A)(i) lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of samples in accordance with subsection (c), and reduce the frequency of sampling to once per year. A small or medium sized system supplier that collects fewer than five samples as specified in subsection (c) and which meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce its frequency of sampling to once per year. In no case can the supplier reduce the number of samples required below the minimum of one sample per available tap. This reduced

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~~sampling may only begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.~~

- B) ~~SEP Allowing Reduction to Annual for Suppliers Maintaining Water Quality Control Parameters~~
- ~~i) Any supplier that meets the lead action level and which maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f) during each of two consecutive six-month monitoring periods may reduce the frequency of monitoring to once per year and the number of lead and copper samples to that specified by subsection (c) if it receives written approval from the Agency in the form of a SEP. This reduced sampling may only begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.~~
  - ~~ii) The Agency must review monitoring, treatment, and other relevant information submitted by the water system in accordance with Section 611.360, and must notify the system in writing by a SEP when it determines the system is eligible to reduce its monitoring frequency to once every three years under this subsection (d)(4).~~
  - ~~iii) The Agency must review, and where appropriate, revise its determination under subsection (d)(4)(B)(i) when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency.~~
- C) ~~Reduction to Triennial for Small and Medium-Sized System Suppliers~~
- ~~i) Small and Medium-Sized System Suppliers Meeting Lead and Copper Action Levels. A small or medium-sized system supplier that meets the lead action level and which~~

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~~meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years.~~

- ii) ~~SEP for Suppliers Meeting Optimal Corrosion Control Treatment. Any supplier that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f) during three consecutive years of monitoring may reduce its monitoring frequency from annual to once every three years if it receives written approval from the Agency in the form of a SEP. Samples collected once every three years must be collected no later than every third calendar year.~~
- iii) ~~The Agency must review, and where appropriate, revise its determination under subsection (d)(4)(C)(ii) when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency.~~

~~D) Sampling at a Reduced Frequency. A supplier that reduces the number and frequency of sampling must collect these samples from representative sites included in the pool of targeted sampling sites identified in subsection (a), preferentially selecting those sampling sites from the highest tier first. Suppliers sampling annually or less frequently must conduct the lead and copper tap sampling during the months of June, July, August, or September, unless the Agency has approved a different sampling period in accordance with subsection (d)(4)(D)(i).~~

- i) ~~The Agency may grant a SEP approving that approves a different tap sampling period for a supplier to conduct conducting the lead and copper tap sampling to a supplier for systems collecting samples at a reduced frequency number of samples. The duration of the Such a period must not exceed be no longer than four consecutive months within one calendar year and must represent a time~~

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of normal operation ~~when where~~ the highest lead levels ~~of lead~~ are most likely to occur. For a NTNCWS supplier ~~that does not operating operate~~ during ~~any the months~~ of June through September and ~~whose normal operating for which the period when of normal operation where~~ the highest levels of lead are most likely to occur is not known, the Agency must designate a period that represents a time of normal operation for the system. This reduced monitoring sampling may only begin during the Agency-designated period ~~approved or designated by the Agency~~ in the calendar year immediately following the end of the second ~~consecutive~~ six-month tap monitoring cycle, period for a supplier systems initiating annual monitoring, ~~or in and during~~ the three-year period following the end of the third consecutive ~~calendar~~ year of annual monitoring, for a supplier initiating triennial monitoring.

- ii) A supplier monitoring annually ~~and that has been~~ collecting samples during the months of June through September ~~that and which~~ receives Agency approval to alter its tap sampling sample collection period under subsection (d)(4)(D)(i) must collect its next round of samples during a time period ~~ending that ends~~ no later than 21 months after ~~its the~~ previous round of sampling. A supplier monitoring once every three years ~~and that has been~~ collecting samples during the months of June through September ~~that and which~~ receives Agency approval to alter ~~its tap the~~ sampling collection period ~~under as provided in~~ subsection ~~(d)(4)(A)(i) (d)(4)(D)(i)~~ must collect its next round of samples during a time period ~~ending that ends~~ no later than 45 months after the previous ~~tap round of sampling period~~. The supplier must conduct subsequent monitoring ~~Subsequent rounds of sampling must be collected~~ annually or once every three years, as ~~required by~~ this Section requires.
- iii) A small ~~system~~ supplier collecting samples during the months of June through September, receiving with a waiver ~~granted~~ under subsection (g) and receiving that has been

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~~collecting samples during the months of June through September and which receives Agency approval to alter its tap sampling sample collection period under subsection (d)(4)(D)(i) must collect its next round of samples before the end of the nine-year tap monitoring compliance cycle (as that term is defined in Section 611.101 defines the term).~~

- B) A supplier meeting the lead trigger level and copper action level during two consecutive six-month tap monitoring cycles may reduce its monitoring frequency to annually monitoring and must sample at the standard number of sampling sites for lead and reduced number of sites for copper that subsection (c) specifies. A supplier operating OCCT must also maintain the range of OWQPs the Agency set under Section 611.352(f) during the same period and receive a SEP from the Agency approving annual monitoring based on the Agency's review of the supplier's monitoring, treatment, and other relevant information the supplier reports under Section 611.360. The supplier must begin this sampling no later than the calendar year immediately following the last calendar year during which the supplier sampled.
- C) A supplier exceeding the lead trigger level but neither the lead nor copper action level during two consecutive six-month tap monitoring cycles must monitor no less frequently than annually at the standard number of sampling sites for lead and copper subsection (c) specifies. A supplier operating OCCT must also maintain the range of OWQPs the Agency set under Section 611.352(f) during the same period and receive a SEP from the Agency approving annual monitoring based on the Agency's review of monitoring, treatment, and other relevant information the supplier reports under Section 611.360. The supplier must begin this sampling no later than the calendar year immediately following the last calendar year during which the supplier sampled.
- D) A supplier exceeding the lead trigger level but neither the lead nor copper action level during three consecutive years of monitoring may increase the tap monitoring cycle (reduce its monitoring frequency) for copper to once every three years; however, the

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supplier may not increase the tap monitoring cycle (reduce its monitoring frequency) for lead. A supplier operating OCCT must also maintain the range of OWQPs the Agency set under Section 611.352(f) during the same period and receive a SEP from the Agency approving triennial monitoring based on the Agency's review of monitoring, treatment, and other relevant information the supplier reports under Section 611.360. The supplier must begin this sampling no later than the third calendar year immediately following the last calendar year during which the supplier sampled.

E) A small or mid-sized supplier not exceeding the lead trigger level or copper action level during three consecutive years of monitoring (completing standard monitoring during both six-month tap monitoring cycles of a calendar year constitutes one year of monitoring) may sample at the reduced number of sites for lead and copper that subsection (c) provides and reduce its monitoring frequency to triennially monitoring. A supplier operating OCCT must also maintain the range of OWQPs the Agency set under Section 611.352(f) during the same three-year period and receive a SEP from the Agency approving triennial monitoring based on the Agency's review of monitoring, treatment, and other relevant information the supplier reports under Section 611.360. The supplier must begin this sampling no later than three calendar years after the last calendar year during which the supplier sampled.

~~F~~E) A supplier demonstrating ~~Any water system that demonstrates~~ for two consecutive six-month tap monitoring cycles ~~periods that its 90<sup>th</sup> percentile the tap water lead concentration, calculated level computed~~ under Section 611.350(c)(~~43~~), is less than or equal to 0.005 mg/l and that its 90th percentile the tap water copper concentration, calculated level computed under Section 611.350(c)(~~43~~), is less than or equal to 0.65 mg/l may sample at ~~reduce the reduced number of sites for lead and copper under samples in accordance with~~ subsection (c) and reduce its monitoring the frequency of sampling to ~~triennially once every three calendar years~~. A supplier applying corrosion control treatment must maintain the range of water quality parameter values reflecting OCCT the Agency specifies under Section 611.352(f) to qualify for reduced monitoring under this subsection

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(d)(4)(F).

F) Resumption of Standard Monitoring

- i) Small or Medium-Sized Suppliers Exceeding Lead or Copper Action Level. A small or medium-sized system supplier subject to reduced monitoring that exceeds the lead action level or the copper action level must resume sampling in accordance subsection (d)(3) and collect the number of samples specified for standard monitoring under subsection (c). Such a supplier must also conduct water quality parameter monitoring in accordance with Section 611.357(b), (c), or (d) (as appropriate) during the six-month monitoring period in which it exceeded the action level. Any such supplier may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subsection (c) after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of subsection (d)(4)(A). Any such supplier may resume monitoring once every three years for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (d)(4)(C) or (d)(4)(E).
- ii) Suppliers Failing to Operate within Water Quality Control Parameters. Any supplier subject to reduced monitoring frequency that fails to meet the lead action level during any four-month monitoring period or that fails to operate within the range of values for the water quality control parameters specified under Section 611.352(f) for more than nine days in any six-month period specified in Section 611.357(d) must conduct tap water sampling for lead and copper at the frequency specified in subsection (d)(3), must collect the number of samples specified for standard monitoring under subsection (c), and must resume monitoring for water quality parameters within the distribution system in accordance with Section 611.357(d). This standard tap water sampling must begin no later than the six-month

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~~period beginning January 1 of the calendar year following the lead action level exceedance or water quality parameter excursion. A supplier may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system only if it fulfills the conditions set forth in subsection (d)(4)(H).~~

BOARD NOTE: The Board moved the material from the last sentence of 40 CFR 141.86(d)(4)(vi)(B) and 40 CFR 141.86(d)(4)(vi)(B)(1) through (d)(4)(vi)(B)(3) to subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii), since Illinois Administrative Code codification requirements allow subsections only to four indent levels.

- G) ~~Any water supplier subject to a reduced monitoring frequency under subsection (d)(4) must notify the Agency in writing in accordance with Section 611.360(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that Section. The Agency must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the supplier. The Agency may, by a SEP, require the system to resume sampling in accordance with subsection (d)(3) and collect the number of samples specified for standard monitoring under subsection (c) or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.~~
- H) ~~A supplier required under subsection (d)(4)(F) to resume monitoring in accordance with Section 611.357(d) may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:~~
- i) ~~The supplier may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subsection (c) after it has completed two subsequent six-month rounds of monitoring that meet the criteria of subsection (d)(4)(B) and the supplier has received written~~



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~~approval from the Agency by a SEP that it is appropriate to resume reduced monitoring on an annual frequency. This sampling must begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.~~

- ~~ii) The supplier may resume monitoring for lead and copper once every three years at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (d)(4)(C) or (d)(4)(E) and the system has received a SEP from the Agency that it is appropriate to resume monitoring once every three years.~~
- ~~iii) The supplier may reduce the number of water quality parameter tap water samples required in accordance with Section 611.357(e)(1) and the frequency with which it collects such samples in accordance with Section 611.357(e)(2). Such a system may not resume monitoring once every three years for water quality parameters at the tap until it demonstrates, in accordance with the requirements of Section 611.357(e)(2), that it has re-qualified for monitoring once every three years.~~

~~BOARD NOTE: Subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii) are derived from the last sentence of 40 CFR 141.86(d)(4)(vi)(B) and 40 CFR 141.86 (d)(4)(vi)(B)(1) through (d)(4)(vi)(B)(3), since Illinois Administrative Code codification requirements allow only four indent levels of subsections.~~

- e) Additional Monitoring. The supplier and the Agency must consider the results of any monitoring the supplier conducts conducted in addition to the minimum requirements in of this Section (such as customer-requested sampling) must be considered by the supplier and the Agency in making any determinations (i.e., calculating the 90<sup>th</sup> percentile lead concentration action level or the copper action level) under this Subpart G. A supplier serving through lead service lines that cannot collect the minimum number of samples from Tier 1 or Tier 2 sites must calculate the 90<sup>th</sup> percentile concentration using data from all sites it serves through lead service lines (Tier 1 and Tier 2 sites) together with the highest lead

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and copper results from lower-tier sites to complete the minimum number of sampling sites subsection (c) requires. The supplier must submit data from additional Tier 3, Tier 4 or Tier 5 sites to the Agency but may not use these results in calculating the 90th percentile concentration. The supplier must include customer-requested samples from sites the supplier knows it serves through lead service lines in calculating its 90th percentile concentration if the samples comply with this Section.

- f) Invalidation of Lead ~~and or~~ Copper Tap ~~Water~~ Samples Used in Calculating the 90th Percentile Concentration. A sample the Agency invalidates ~~invalidated~~ under this subsection (f) does not count toward determining lead or copper 90<sup>th</sup> percentile concentrations ~~levels~~ under Section 611.350(c)(~~43~~) or toward complying with ~~meeting the minimum monitoring requirements of~~ subsection (c).
- 1) The Agency must invalidate a lead or copper tap water sample if it determines that any one of certain the following conditions exists:
    - A) The laboratory establishes that improper sample analysis caused erroneous results;
    - B) The supplier took the sample ~~was taken~~ from a site that did not meet the site selection criteria in of this Section;
    - C) The sample container sustained damage ~~was damaged~~ in transit; or
    - D) There is substantial reason to believe that someone tampered with the sample ~~was subject to tampering~~.
  - 2) The supplier must report the results from of all samples to the Agency and submit all supporting documentation for samples the supplier believes the Agency should invalidate ~~be invalidated~~.
  - 3) To invalidate a sample under subsection (f)(1), the Agency must document its decision and ~~the~~ rationale for the decision must be documented in writing. The Agency may not invalidate a sample solely because on the grounds that a follow-up sample result is higher or lower than that of the original sample.
  - 4) The ~~water~~ supplier must collect replacement samples for any samples the

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~~Agency invalidates~~ ~~invalidated~~ under this Section if, ~~after the invalidation of one or more samples,~~ the supplier has too few samples to meet the minimum requirements of subsection (c) ~~after the Agency invalidates samples.~~ ~~The supplier must take any~~ ~~Any such~~ replacement samples ~~must be taken~~ as soon as possible, but no later than ~~the latter of 20 days after the date~~ the Agency invalidates the original sample or before ~~by~~ the end of the applicable tap sampling monitoring period, ~~whichever occurs later.~~ ~~The supplier must not use replacement~~ Replacement samples it takes taken after the end of the applicable tap sampling monitoring period ~~must not also be used~~ to meet the monitoring requirements of a subsequent tap sampling monitoring period. The supplier must take replacement samples ~~must be taken~~ at the same locations where it took as the invalidated samples or, if that is not possible, at other locations the supplier did not use other than those already used for sampling during the tap sampling monitoring period.

- g) Monitoring Waivers for ~~Small System~~ Suppliers Serving 3,300 or Fewer Persons. Any ~~small system~~ supplier serving 3,300 or fewer persons complying with that meets the criteria in ~~of~~ this subsection (g) may apply to the Agency for a SEP reducing its to reduce the frequency of monitoring for lead and copper monitoring frequency under this Section to once every nine years (i.e., a "full waiver") if the supplier complies with it meets all of the materials criteria specified in subsection (g)(1) specifies and all of the monitoring criteria specified in subsection (g)(2) specifies. Any ~~small system~~ supplier serving 3,300 or fewer persons complying with that meets the criteria in subsections (g)(1) and (g)(2) only for lead, or only for copper, may apply to the Agency State for a SEP reducing its tap water monitoring waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (i.e., a "partial waiver").
- 1) Materials Criteria. The supplier must demonstrate that its distribution system, ~~and~~ service lines, and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials or copper-containing materials, as ~~those terms are defined in~~ this subsection (g)(1) defines these terms, as follows:
- A) Lead. To qualify for a SEP granting a full waiver, or a partial waiver of the tap water monitoring requirements for lead (i.e., a "lead waiver"), the ~~water~~ supplier must provide certification and

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supporting documentation to the Agency demonstrating that its the system is free of all lead-containing materials, ~~as follows:~~

- i) The system has ~~It contains~~ no plastic pipes ~~that contain lead plasticizers,~~ or plastic service lines containing that contain lead plasticizers; and
- ii) The system ~~It~~ is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass- ~~brass-~~ or bronze-alloy ~~bronze-alloy-~~ fittings and fixtures, unless those such- ~~those such-~~ fittings and fixtures comply with ~~meet the requirements of~~ Section 611.126(b).

BOARD NOTE: Corresponding 40 CFR 141.86(g)(1)(i)(B) specifies "any standard established pursuant to 42 USC 300g-6(e) (SDWA section 1417(e))". Congress changed the lead standards for fittings and fixtures in ~~for~~ the Reduction of Lead in Drinking Water Act, P.L. Pub. L.-111-380, section 2(a)(2) and (b), 124 Stat. 4131 (Jan. 4, 2011). The Board incorporated the statutory changes into this Section by referencing Section 611.126(b).

- B) Copper. To qualify for a SEP granting a full waiver, or a partial waiver of the tap water monitoring requirements for copper (i.e., a "copper waiver"), the ~~water-~~ supplier must provide certification and supporting documentation to the Agency demonstrating that its the system contains no copper pipes or copper service lines.
- 2) Monitoring Criteria for Waiver Issuance. The supplier must have completed at least one six-month round of standard tap water monitoring for lead and copper at Agency-approved sites ~~approved by the Agency~~ and from the number of sites ~~required by~~ subsection (c) requires and demonstrate to the Agency that the 90<sup>th</sup> percentile concentrations levels for any and all rounds of monitoring conducted since the system became free of all lead-containing or copper-containing materials, as appropriate, meet certain ~~the following~~ criteria:
- A) Lead Levels. To qualify for a full waiver, or a lead partial waiver,

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the supplier must demonstrate that ~~its the~~ 90<sup>th</sup> percentile lead ~~concentration level~~ does not exceed 0.005 mg/ℓ.

- B) Copper Levels. To qualify for a full waiver, or a copper partial waiver, the supplier must demonstrate that ~~its the~~ 90<sup>th</sup> percentile copper ~~concentration level~~ does not exceed 0.65 mg/ℓ.
- 3) Agency State Approval of Waiver Application. The Agency must notify the supplier of its waiver determination ~~in by~~ a SEP ~~stating, in writing, setting forth~~ the basis of its decision and any condition ~~on of~~ the waiver. As a condition ~~on of~~ the waiver, the Agency may require the supplier to perform specific activities (e.g., limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver, ~~etc.~~) to avoid the risk of lead or copper concentration of concern in tap water. The ~~small-system~~ supplier must continue monitoring for lead and copper at the tap as ~~required by~~ subsections (d)(1) through (d)(4) ~~require~~, as appropriate, until ~~the supplier it~~ receives written notification from the Agency ~~approving that~~ the waiver ~~has been approved~~.
- 4) Monitoring Frequency for Suppliers with Waivers
- A) A supplier with a full waiver must conduct tap water monitoring for lead and copper ~~under in accordance with~~ subsection (d)(4)(D) at the reduced number of sampling sites ~~identified in~~ subsection (c) ~~identifies~~ at least once every nine years and provide ~~to the Agency~~ the materials certification ~~specified in~~ subsection (g)(1) ~~specifies~~ for both lead and copper ~~together to the Agency along~~ with the monitoring results. ~~The supplier must collect samples~~ ~~Samples collected~~ every nine years ~~must be collected~~ no later than ~~the every~~ ninth calendar year.
- B) A supplier with a partial waiver must conduct tap water monitoring for the waived contaminant ~~under in accordance with~~ subsection (d)(4)(D) at the reduced number of sampling sites ~~specified in~~ subsection (c) ~~specifies~~ at least once every nine years and provide ~~to the Agency~~ the materials certification ~~specified in~~ subsection (g)(1) ~~specifies~~ pertaining to the waived contaminant ~~together along~~ with the monitoring results. Such a supplier also must

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continue to monitor for the non-waived contaminant in under the applicable of accordance with requirements of subsections (d)(1) through (d)(4), as appropriate.

- C) A Any supplier with a full or partial waiver must notify the Agency in writing under in accordance with Section 611.360(a)(3) of any upcoming long-term change in treatment or adding addition of a new source, as described in that rule describes Section. The Agency must review and approve adding the addition of a new source or long-term change in water treatment before the supplier implements it is implemented by the supplier. The Agency may has the authority to require the supplier to add or modify waiver conditions (e.g., require recertification that the supplier's system is free of lead-containing or copper-containing materials, require additional rounds of monitoring, etc.); if the Agency determines that the it deems such modifications are necessary to address system treatment or source water changes at the system.
- D) If a supplier with a full or partial waiver becomes aware that its system it is no longer free of lead- lead-containing or copper-containing materials, as appropriate (e.g., as a result of new construction or repairs), the supplier must notify the Agency in writing no later than 60 days after becoming aware of the such a change.
- 5) Continued Eligibility. If the supplier continues to comply with satisfy the requirements of subsection (g)(4), the waiver will renew be renewed automatically, unless any of the conditions listed in subsections (g)(5)(A) through (g)(5)(C) occur. A supplier whose waiver the Agency revokes has been revoked may re-apply for a waiver when the supplier at such time as it again meets the appropriate materials and monitoring criteria of subsections (g)(1) and (g)(2).
- A) A supplier with a full waiver or a lead partial waiver does not renew if the supplier no longer satisfies the materials criteria of subsection (g)(1)(A) or has a 90<sup>th</sup> percentile lead concentration level greater than 0.005 mg/l.
- B) A supplier with a full waiver or a copper partial waiver does not

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renew if the supplier no longer satisfies the materials criteria of subsection (g)(1)(B) or has a 90<sup>th</sup> percentile copper concentration level ~~greater than 0.65 mg/l.~~

- C) A waiver terminates when the Agency ~~The State~~ notifies the supplier, ~~in writing,~~ that the Agency revokes the waiver ~~has been revoked, in writing and describing setting forth~~ the basis of its decision.
- 6) Requirements Following Waiver Revocation. A supplier whose full or partial waiver the Agency revokes must comply with specific ~~has been revoked by the Agency is subject to the~~ corrosion control treatment and lead and copper tap water monitoring requirements, ~~as follows:~~
- A) If the supplier exceeds the lead or copper action level, the supplier must implement corrosion control treatment within in accordance ~~with the deadlines specified in~~ Section 611.351(e) specifies; and any other applicable requirements under of this Subpart G.
- B) If the supplier meets both the lead and the copper action levels ~~level~~, the supplier must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sampling sites specified in ~~subsection (c)~~ specifies.
- 7) Pre-Existing Waivers. A waiver ~~Small system supplier waivers approved by the Agency granted a supplier~~ in writing prior to April 11, 2000 remains must remain in effect under certain the following conditions:
- A) If the supplier demonstrates has demonstrated that its system it is ~~both~~ free of both lead-containing lead-containing and copper-containing materials, as required by ~~subsection (g)(1) requires,~~ and that its 90<sup>th</sup> percentile lead levels ~~and 90th percentile~~ copper concentrations comply with levels meet the criteria of subsection (g)(2), the waiver remains in effect so long as the supplier continues eligible for a to meet the ~~waiver under eligibility criteria of~~ subsection (g)(5). The supplier must complete its first round of tap water monitoring conducted ~~under~~ subsection (g)(4) must be completed ~~no later than nine years after the last time~~ the supplier last monitored for lead and copper at the tap.

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- B) If the supplier complies with ~~has met~~ the materials criteria of subsection (g)(1) but has not complied with ~~met~~ the monitoring criteria of subsection (g)(2), the supplier must conduct a round of monitoring for lead and copper at the tap demonstrating that it complied with ~~met the criteria of~~ subsection (g)(2). Thereafter, the waiver remains ~~must remain~~ in effect as long as the supplier complies with ~~meets~~ the continued eligibility criteria in ~~of~~ subsection (g)(5). The supplier must complete its first round of tap water monitoring ~~conducted~~ under subsection (g)(4) must be completed no later than nine years after the supplier conducts the ~~round of~~ monitoring ~~conducted~~ under subsection (g)(2).
- h) Follow-Up Samples for “Find-and-Fix” Under Section 611.352(j). A supplier must collect a follow-up sample at any site exceeding the lead action level within 30 days after receiving the sample results. For these follow-up samples, the supplier may use different sample volumes or different sample collection procedures to assess the source of elevated lead. A supplier must submit the results from samples it collects under this Section to the Agency but must not include those results in calculating its 90th percentile concentration.
- i) Public Availability of Tap Monitoring Results the Supplier Used in Calculating its 90th Percentile Concentration. A supplier must make the results of its compliance tap water monitoring data, including data the supplier used in calculating its 90th percentile concentration under Section 611.350(c)(4), available to the public within 60 days after the end of the applicable tap sampling period. This Section does not require a supplier to make publicly available the addresses of the sites where the supplier collected tap samples. A large supplier must make available the monitoring results in a digital format. A small or mid-sized supplier must make available the monitoring results in either a written or digital format. A supplier must retain tap sampling monitoring data under Section 611.361.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.86.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.357 Monitoring for Water Quality Parameters**

A All large supplier or any small or mid-sized supplier exceeding system suppliers, and all



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~~small and medium sized system suppliers that exceed the lead action level or the copper action level or a small or mid-sized supplier applying corrosion control treatment and exceeding the lead trigger level;~~ must monitor water quality parameters in addition to lead and copper under ~~in accordance with~~ this Section. ~~The requirements of this Section are summarized in Table G.~~

## a) General Requirements

## 1) Sample Collection Methods

A) ~~Using Use of Tap Samples. In The~~ totality, ~~of all tap samples a supplier collects collected by a supplier~~ must represent be ~~representative of~~ water quality throughout the supplier's ~~distribution system, considering taking into account~~ the number of persons served, the different sources of water, the different treatment methods ~~employed by the supplier employs~~, and seasonal variability. Although a supplier may conveniently conduct tap sampling for water quality parameters at sites it uses ~~used for coliform sampling performed under Subpart L, the~~ supplies needs ~~it is not required to~~ do so, and the a supplier needs ~~is not required to~~ perform tap sampling under this Section at taps it ~~targeted for lead and copper sampling under Section 611.356(a). The supplier must include sites it selects for tap samples under this Section in the site sample plan under Section 611.356(a)(1). The supplier must update site sample plan before changing sampling locations.~~

B) ~~Using Use of Entry Point Samples. A Each~~ supplier must collect samples at entry points to the distribution system from locations representing representative of each source after treatment. If a supplier draws water from more than one source and combines the sources ~~are combined~~ before distribution, the supplier must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when the supplier uses water representing is representative of all sources ~~being used~~).

## 2) Number of Samples

A) Tap Samples. ~~A Each~~ supplier must collect two tap samples for applicable water quality parameters during each six-month water

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quality monitoring period ~~specified~~ under subsections (b) through (e) from the minimum number of sites ~~indicated in~~ the first column of Table F (labelled “standard monitoring”) indicates. A supplier adding sites under Section 611.352(j) (“find-and-fix” requirements) must collect tap samples for applicable water quality parameters during each water quality monitoring period under subsections (b) through (e) and must sample from that adjusted minimum number of sites. A supplier needs not add sites if it monitors at least twice the minimum number of sites the first column of Table F indicates.

B) Entry Point Samples

- i) Initial Monitoring. Except as ~~provided in~~ subsection (c)(23) provides otherwise, a each supplier not applying corrosion control treatment must collect two samples for each applicable water quality parameter at each entry point to its the distribution system during each six-month water quality monitoring period ~~specified in~~ subsection (b) specifies.
- ii) Subsequent Monitoring. A Each supplier must collect one sample for each applicable water quality parameter at each entry point to its the distribution system during each six-month water quality monitoring period ~~specified in~~ subsections (c) through (e) specify. During each water quality monitoring period subsections (c) through (e) specify, a supplier applying corrosion control treatment must continue collecting one sample for each applicable water quality parameter at each entry point to its distribution system at least once every two weeks.

b) Initial Sampling for Suppliers

- 1) Large Suppliers-Systems. A Each large system-supplier not applying corrosion control treatment must begin monitoring for measure the applicable water quality parameters ~~specified in~~ subsection (b)(3) specifies at taps and at each entry point to the distribution system during the first two each six-month tap monitoring cycles no later than January 1 after the

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supplier either becomes a large supplier or fails to maintain its 90th percentile lead concentration below the PQL for lead monitoring period specified in Section 611.356(d)(1).

- 2) Small and Mid-Sized Suppliers. A small or mid-sized Each small and medium-sized system supplier exceeding the lead or copper action level or a supplier applying corrosion control treatment for which the Agency did not designate OWQPs and exceeding the lead trigger level must begin monitoring for measure the applicable water quality parameters subsection (b)(3) specifies for two consecutive six-month water quality monitoring periods in the month immediately after the tap sampling period during which the exceedance occurred specified in subsection (b)(3) at the locations specified in this subsection during each six-month monitoring period specified in Section 611.356(d)(1) during which the supplier exceeds the lead action level or the copper action level.
- 3) Water Quality Parameters
  - A) Tap Water Samples. The supplier must collect two samples each for specific parameters:
    - i) pH; and
    - ii) Alkalinity.
  - A) pH;
  - B) Entry Point Samples. The supplier must collect a sample from each entry point to its distribution system for analyses for the parameters in subsection (b)(3)(A):
  - B) Alkalinity;
  - C) Orthophosphate, when an inhibitor containing a phosphate compound is used;
  - D) Silica, when an inhibitor containing a silicate compound is used;

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- E) ~~Calcium;~~
- F) ~~Conductivity; and~~
- G) ~~Water temperature.~~

c) Monitoring after Installing OCCT or Reoptimized OCCT ~~Installation of Corrosion Control~~

- 1) ~~A Large Systems. Each large system supplier installing or modifying that installs optimal corrosion control treatment under Section 611.351(d)(5) or (e)(5) that Section 611.351(d)(6) or (e)(6) requires to monitor must monitor measure the water quality parameters in subsections (c)(1)(A) and (c)(1)(B) every six months at the locations and frequencies those specified in subsections specify until the Agency specifies new water quality parameter values for optimal corrosion control under subsection (d)(4) and (e)(5) during each six-month monitoring period specified in Section 611.356(d)(2)(A). The supplier must collect these samples evenly throughout the six-month water quality monitoring period to reflect seasonal variability.~~

A) Tap Water Samples. The supplier must collect two samples at each tap for each of specific water quality parameters:

- i) pH;
- ii) Alkalinity;
- iii) Orthophosphate if the supplier uses an inhibitor containing an orthophosphate compound; and
- iv) Silica if the supplier uses an inhibitor containing a silicate compound.

B) Entry Point Samples. Except as subsection (c)(1)(C) provides otherwise, a supplier must collect one sample at each entry point to its distribution system every two weeks (bi-weekly) for specific water quality parameters:

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- i) pH;
  - ii) If the supplier adjusts alkalinity as part of optimal corrosion control, a reading of the chemical dosage rate the supplier uses to adjust alkalinity and the alkalinity concentration; and
  - iii) If the supplier uses a corrosion inhibitor as part of optimal corrosion control, a reading of the inhibitor dosage rate the supplier uses and the orthophosphate or silica concentration.
- 2) ~~Small and Medium Sized Systems. Each small or medium sized system that installs optimal corrosion control treatment under Section 611.351(e)(5) must measure the water quality parameters at the locations and frequencies specified in subsections (e)(4) and (e)(5) during each six-month monitoring period specified in Section 611.356(d)(2)(B) in which the supplier exceeds the lead action level or the copper action level.~~
  - C3) Groundwater Systems. A Any groundwater system supplier can limit entry point sampling under described in subsection (c)(12)(B) to those entry points representing that are representative of water quality and treatment conditions throughout the system. If water from untreated groundwater sources mixes with water from treated groundwater sources, the system must monitor for water quality parameters both at both representative entry points receiving treatment and representative entry points not receiving no treatment. Before starting Prior to the start of any monitoring under this subsection (c)(1)(C), the supplier system must provide to the Agency written information to the Agency identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites represent are representative of water quality and treatment conditions throughout the system, including information on seasonal variability.
- 2) Upon determining that doing so is necessary, the Agency may issue a SEP requiring a small or mid-sized supplier applying corrosion control treatment for which the Agency has not designated OWQPs that exceeds

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the lead trigger level but not the lead or copper action level to conduct water quality parameter monitoring under subsection (c)(1). Alternatively, the Board may require an alternative scheme for monitoring water quality control parameters, by rule, variance, or adjusted standard.

- 4) ~~Tap water samples, two samples at each tap for each of the following water quality parameters:~~
  - A) ~~pH;~~
  - B) ~~Alkalinity;~~
  - C) ~~Orthophosphate, when an inhibitor containing a phosphate compound is used;~~
  - D) ~~Silica, when an inhibitor containing a silicate compound is used; and~~
  - E) ~~Calcium, when calcium carbonate stabilization is used as part of corrosion control.~~
  
- 5) ~~Entry point samples, except as provided in subsection (c)(3), one sample at each entry point to the distribution system every two weeks (bi-weekly) for each of the following water quality parameters:~~
  - A) ~~pH;~~
  - B) ~~When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and~~
  - C) ~~When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).~~
  
- d) Monitoring after the Agency Specifies Water Quality Parameter Values for Optimal Corrosion Control
  - 1) After the Agency specifies the values for water quality control parameters

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reflecting OCCT under Section 611.352(f), a supplier must monitor for the specified OWQPs during six-month water quality monitoring periods beginning on January 1 or July 1. The supplier must space this monitoring evenly throughout the six-month water quality monitoring period to reflect seasonal variability and be consistent with subsections (c)(1)(A) through (c)(1)(C).

- A1) Large System Suppliers. A After the Agency has specified the values for applicable water quality control parameters reflecting optimal corrosion control treatment under Section 611.352(f), each large system supplier must measure the applicable water quality parameters the Agency specifies in accordance with subsection (e) and determine whether the supplier complies compliance with the requirements of Section 611.352(g) every six months, with the first water quality monitoring six-month period to begin on the sooner of either January 1 or July 1, whichever comes first, after the Agency specifies the optimal values under Section 611.352(f).
- B2) Small Small and Mid-Sized Medium Sized System Suppliers. A small Each small or mid-sized medium sized system supplier must exceeding an action level must begin conduct such monitoring during the each six-month water quality monitoring period immediately following the tap monitoring cycle during specified in this subsection (d) in which the exceedance occurs and continue monitoring until the supplier no longer exceeds the lead action level or the copper action level and meets the OWQPs in two consecutive six-month tap monitoring cycles under Section 611.356(d)(3). For a small or mid-sized supplier any such small and medium size system that is subject to a reduced water quality monitoring cycle frequency under Section 611.356(d)(4) at the time it exceeds of the action level exceedance, the start of the applicable six-month water quality monitoring cycle period under this subsection (d) coincides must coincide with the start of the applicable tap monitoring cycle period under Section 611.356(d)(4).
- C3) A supplier must determine whether it complies Compliance with Agency-designated OWQPs optimal water quality parameter values must be determined as specified under Section 611.352(g)

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specifies.

- 2) A small or mid-sized supplier exceeding the lead trigger level but not the lead or copper action level for which the Agency has set OWQPs must monitor every six months as subsection (d)(1) specifies, until the supplier no longer exceeds the lead trigger level in two consecutive tap monitoring cycles.
- 3) The Agency may issue a SEP requiring a supplier of this section to continue monitoring OWQPs under subsection (d)(2) if the Agency determines this necessary to demonstrate that the supplier will continue to comply.

e) Reduced Monitoring

- 1) Reduced ~~Reduction in~~ Tap Monitoring. A large supplier maintaining that has maintained the range of values for the water quality parameters reflecting OCCT the Agency specifies under Section 611.352(f) and not exceeding the lead trigger level optimal corrosion control treatment during each of two consecutive six-month water quality monitoring cycles periods under subsection (d) must continue monitoring at the entry points to the distribution system as specified in subsection (c)(1)(B)(e)(4) specifies. The Such a supplier may collect two samples from each tap for applicable water quality parameters from the reduced number of sites indicated in the second column of Table F (Standard Monitoring) indicates E during each subsequent six-month water quality monitoring cycle period. The supplier must collect these samples evenly throughout the six-month water quality monitoring cycle to reflect seasonal variability.
- 2) Reduced ~~Reduction in~~ Monitoring Frequency
  - A) Annual Monitoring. A supplier maintaining the range of values for the water quality parameters reflecting OCCT under Section 611.352(f) exceeding the lead trigger level or copper action level during three consecutive years of monitoring may reduce its tap sampling frequency for applicable water quality parameters subsection (e)(1) specifies from every six months to annually. The supplier must begin this reduced sampling during the calendar year immediately following the end of the water quality monitoring



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cycle in which the third consecutive year of six-month monitoring occurs.~~Staged Reductions in Monitoring Frequency~~

- i) ~~Annual Monitoring. A supplier that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified under Section 611.352(f) during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subsection (e)(1) from every six months to annually. This reduced sampling may only begin during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs.~~
  - ii) ~~Triennial Monitoring. A supplier that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified under Section 611.352(f) during three consecutive years of annual monitoring under subsection (e)(2)(A)(i) may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subsection (e)(1) from annually to once every three years. This reduced sampling may only begin no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.~~
- B) A supplier may reduce its tap sampling ~~the frequency with which it collects tap samples~~ for applicable water quality parameters specified in subsection (e)(1) to once every year ~~three years~~ if the supplier it demonstrates that it complies with ~~has fulfilled the conditions set forth in~~ subsections (e)(2)(B)(i) through (e)(2)(B)(iii) during two consecutive water quality monitoring cycles~~periods~~, subject to ~~the limitation of~~ subsection (e)(2)(B)(iv).
- i) The supplier must demonstrate that its tap water 90th percentile concentration for lead level at the 90th percentile is less than or equal to the PQL for lead of 0.005 mg/l

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~~specified in Section 611.359(a)(1)(B).~~

- ii) The supplier must demonstrate that its tap water 90th percentile concentration for copper level at the 90<sup>th</sup> percentile is less than or equal to 0.65 mg/l ~~for copper in~~ Section 611.350(c)(32).
  - iii) The supplier must demonstrate that it maintains ~~also has maintained~~ the range of values for the water quality parameters reflecting OCCT optimal corrosion control treatment specified by the Agency specified under Section 611.352(f).
  - ~~iv) Monitoring conducted every three years must be done no later than every third calendar year.~~
- 3) A supplier ~~that conducts~~ sampling annually or triennially every three years must collect these samples evenly throughout the calendar year ~~so as to~~ reflect seasonal variability.
- 4) ~~A Any~~ supplier ~~on subject to~~ a reduced monitoring frequency under this subsection (e) failing that fails to operate at or above the minimum value or within the range of values for the water quality parameters the Agency specifies specified under Section 611.352(f) for more than nine days in any six-month period for determining compliance under specified in Section 611.352(g) must resume tap water sampling complying in ~~accordance with the number and frequency requirements of samples~~ subsection (d) requires. A supplier thus ceasing reduced monitoring ~~Such a system~~ may resume annual monitoring for water quality parameters at the tap at the reduced number of sites ~~specified in~~ subsection (e)(1) specifies after completing it has completed two subsequent consecutive six-month rounds of monitoring complying with that meet the criteria of that subsection (e)(1). ~~The supplier or~~ may resume annual monitoring ~~once every three years~~ for water quality parameters ~~at the tap~~ at the reduced number of sites after demonstrating it demonstrates through subsequent rounds of monitoring that the supplier complies with it meets ~~the criteria of either~~ subsection (e)(2)(A) or (e)(2)(B).
- f) Additional Monitoring by Suppliers. The supplier and the Agency must consider

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~~any monitoring results and what of any monitoring conducted in addition to the minimum requirements of this Section requires must be considered by the supplier and the Agency~~ in making any determinations (i.e., determining concentrations of water quality parameters) under this Section or Section 611.352.

- g) Sites Added During Find-and-Fix. A supplier conducting water quality parameter monitoring at additional sites during a “find-and-fix” assessment under Section 611.352(j) must add those sites to the minimum number of sites subsections (a) through (e) specify, unless the supplier monitors at least twice the required minimum number of sites.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.87.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.358 Monitoring for Lead and Copper in Source Water**

- a) Sampling~~Sample~~ Location, Collection Methods, and Number of Samples
- 1) A supplier ~~failing that fails~~ to meet the lead ~~action level~~ or the copper action level on the basis of tap samples ~~underecollected in accordance with~~ Section 611.356 must collect lead and copper source water samples under specific in accordance with the following requirements ~~for regarding~~ sample location, number of samples, and collection methods:
- A) A groundwater supplier must take a minimum of one sample at every entry point to the distribution system after the supplier applies any treatment or in the distribution system at a point representing that is representative of each source well after treatment (~~hereafter called a~~ "sampling point"). The supplier must take one sample at the same sampling point unless conditions make another sampling point more closely represent a representative of ~~each~~ source or treatment plant.
- B) A surface water supplier must take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a sampling point that is representative of each source after treatment (hereafter called a sampling point). The supplier system must take each sample at the

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same sampling point unless conditions make another sampling point more closely represent ~~arepresentative of each~~ source or treatment plant.

BOARD NOTE: For ~~the purposes of~~ this subsection (a)(1)(B), a system using a combination of surface water and groundwater sources is a surface water ~~systems include systems with a combination of surface and ground sources.~~

- C) If a supplier draws water from more than one source and combines the sources ~~are combined~~ before distribution, the supplier must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water represents ~~is representative of~~ all sources being used).
- D) The Agency may issue, ~~by~~ a SEP reducing, ~~reduce~~ the total number of samples a supplier that must analyze ~~be analyzed~~ by allowing the supplier to composite samples ~~use of compositing~~. Certified laboratory personnel must composite the ~~Compositing of samples must be done by certified laboratory personnel.~~ A composite sample may include ~~Composite samples from~~ a maximum of five samples. However are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/l or the copper concentration is greater than or equal to 0.160 mg/l, ~~then~~ the supplier must do either of two things ~~the following~~:
- i) The supplier must take and analyze a follow-up sample within 14 days at each sampling point included in the composite sample; or
  - ii) If duplicate samples ~~duplicates of~~ or sufficient volumes of quantities from the original samples are available from each sampling point the certified laboratory used in the composite sample are available, the supplier may use those ~~these~~ instead of resampling.

- 2) SEP Requiring an Additional Sample

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- A) ~~Upon determining~~~~When the Agency determines~~ that ~~the results of~~ sampling ~~indicates~~~~indicate an~~ exceedance of the lead or copper MPC ~~established~~ under Section 611.353(b)(4), ~~the Agency#~~ must ~~issue, by~~ a SEP ~~requiring, require~~ the supplier to collect one additional sample as soon as possible after the initial sample at the same sampling point, but ~~before~~~~no later than~~ two weeks after the supplier took the initial sample.
- B) If a supplier takes an Agency-required confirmation sample for lead or copper, the supplier must average the results obtained from the initial sample with ~~those~~~~the results obtained~~ from the confirmation sample ~~to determine whether it complies in~~ ~~determining compliance~~ with the Agency-specified lead and copper MPCs.
- i) ~~For averaging, consider any~~~~Any~~ analytical result below the MDL ~~must be considered~~ as zero ~~for the purposes of~~ averaging.
- ii) ~~Consider any~~~~Any~~ value above the MDL but below the PQL ~~must either be considered~~ as the measured value or ~~be considered~~ one-half the PQL.
- b) Monitoring Frequency after System Exceeds Tap Water Action Level. A supplier ~~exceeding~~~~that exceeds~~ the lead ~~action level~~ or ~~the~~ copper action level in tap ~~for~~ ~~the first time or for the first time after adding a new source or installing source~~ ~~water treatment under Section 611.353(b)(2)~~~~sampling~~ must collect one source water sample from each entry point to ~~its~~~~the~~ distribution system no later than six months after the end of the ~~tap sampling~~~~monitoring~~ period during which ~~the~~ ~~supplier exceeds~~ the lead or copper action level ~~was exceeded~~. For ~~annual or less~~ ~~frequent tap~~ monitoring ~~cycles~~~~periods that are annual or less frequent~~, the end of the ~~tap sampling~~~~monitoring~~ period is September 30 of the calendar year ~~during~~~~in~~ which the sampling occurs, or ~~the last day of any alternative tap sampling period~~~~if~~ the Agency ~~establishes in~~ ~~has established an alternate monitoring period by~~ a SEP, ~~the last day of that period. If the Agency determines under Section~~ ~~611.353(b)(2) that source water treatment is not necessary, the Agency may issue~~ ~~a SEP waiving source water monitoring for the supplier subsequently exceeding~~ ~~the lead or copper action level at the tap under subsections (b)(1)(A) through~~ ~~(b)(1)(C).~~

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- 1) The Agency may issue a SEP waiving source water monitoring for the supplier exceeding the lead or copper action level at the tap under specific conditions:
    - A) The supplier already conducted source water monitoring after previously exceeding the lead or copper action level;
    - B) The Agency issued a SEP determining that source water treatment is not necessary; and
    - C) The supplier has not added any new water sources.
  - 2) This subsection (b)(2) corresponds with 40 CFR 141.88(b)(2), which USEPA marked "[reserved]". This statement maintains structural consistency with USEPA's rule.
- c) Monitoring Frequency after ~~Installing~~Installation of Source Water Treatment or Adding a New Source-
- 1) A supplier ~~installing~~that installs source water treatment under Section 611.353(a)(3) must collect ~~one an additional~~ source water sample from each entry point to ~~its~~the distribution system during each of two consecutive six-month source water monitoring periods on or before 36 months after ~~completing~~completion of step 2, as ~~specified in~~ Section 611.353(a)(4) specifies.
  - 2) A supplier adding a new source must collect one source water sample from each entry point to its distribution system during each six-month source water monitoring period until the supplier demonstrates that the supplier has maintained finished drinking water entering the distribution system below the MPCs for lead and copper the Agency specifies under Section 611.353(b)(4), or the Agency issues a SEP determining that the supplier does not need source water treatment.
- d) Monitoring Frequency after the Agency ~~Specifies~~Has Specified the Lead and Copper MPCs ~~or Has Determined That Source Water Treatment Is Not Needed~~
- 1) A supplier must monitor at the frequency subsections (d)(1) and (d)(2)

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~~specify if specified by subsection (d)(1)(A) or (d)(1)(B) where the Agency specifies has specified the MPCs under Section 611.353(b)(4) or has determined that the supplier is not required to install source water treatment under Section 611.353(b)(2).~~

## A) GWS Suppliers

- i) A GWS supplier ~~sampling underrequired to sample by~~ subsection (d)(1) must collect samples once during the three-year compliance period (as ~~that term is defined in~~ Section 611.101 ~~defines the term~~) during which the Agency makes its determination under Section 611.353(b)(4) or 611.353(b)(2).
- ii) A GWS supplier ~~sampling underrequired to sample by~~ subsection (d)(1) must ~~sample collect samples~~ once during each subsequent compliance period.
- iii) ~~A supplier must triennially collect~~ ~~Triennial~~ samples ~~must be collected~~ every third calendar year.

B) A SWS or mixed system supplier must collect samples once during each calendar year, the first annual ~~source water~~ monitoring period to begin during the year in which the Agency makes its determination under Section 611.353(b)(4) or 611.353(b)(2).

- 2) A supplier ~~needs is~~ not ~~sample required to conduct~~ source water ~~sampling~~ for lead or copper if the supplier meets the action level for the specific contaminant in all tap water samples ~~collected~~ during the entire source water ~~monitoring~~ ~~sampling~~ period ~~applicable~~ under subsection (d)(1)(A) or (d)(1)(B).

## e) Reduced Monitoring Frequency

- 1) A GWS supplier may reduce ~~its source water~~ ~~the~~ monitoring frequency for lead and copper ~~in source water~~ to once during each nine-year compliance cycle (as ~~that term is defined in~~ Section 611.101 ~~defines the term~~), provided ~~the supplier collects that~~ the samples ~~are collected~~ no later than every ninth calendar year, and only if the supplier meets ~~certain one of the~~

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following criteria:

- A) The supplier demonstrates that finished drinking water entering the distribution system ~~remainshas been maintained~~ below the MPCs for maximum permissible lead and copper the Agency specifies under concentrations specified by the State in Section 611.353(b)(4) during at least three consecutive monitoring compliance periods under subsection (d)(1).~~;~~~~or~~
- B) This subsection (e)(1)(B) corresponds with 40 CFR 141.88(e)(1)(ii), which USEPA marked "[reserved]". This statement maintains structural consistency with USEPA's rule. The Agency has determined, by a SEP, that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under subsection (d)(1), the concentration of lead in source water was less than or equal to 0.005 mg/l and the concentration of copper in source water was less than or equal to 0.65 mg/l.
- 2) A SWS or mixed system supplier may reduce ~~its~~the monitoring frequency ~~in~~ subsection (d)(1) requires to once during each nine-year compliance cycle (as ~~that term is defined in~~ Section 611.101 defines the term) if the supplier collects, provided that the samples ~~are collected~~ no later than every ninth calendar year, and only if the supplier meets ~~certain one of the following~~ criteria:
- A) The supplier demonstrates that finished drinking water entering ~~its~~the distribution system ~~remainshas been maintained~~ below the MPCs for maximum permissible lead and copper the Agency specifies under concentrations specified by the Agency under Section 611.353(b)(4) for at least three consecutive years.~~;~~~~or~~
- B) This subsection (e)(1)(B) corresponds with 40 CFR 141.88(e)(1)(ii), which USEPA marked "[reserved]". This statement maintains structural consistency with USEPA's rule. The Agency has determined, by a SEP, that source water treatment is not needed and the supplier demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/l and the concentration of copper in



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~~source water was less than or equal to 0.65 mg/l.~~

- 3) A supplier ~~using that uses~~ a new source of water ~~may~~ not ~~reduce its eligible for reduced~~ monitoring for lead or copper until ~~after the supplier~~ demonstrates by samples ~~it~~ collected from the new source during three consecutive ~~source water~~ monitoring periods, ~~of the appropriate duration provided by~~ subsection (d)(1) ~~provides~~; that lead or copper ~~level concentrations~~ are below the MPC ~~as specified by~~ the Agency ~~specifies~~ under Section 611.353(a)(4).

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.88.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.359 Analytical Methods**

~~The supplier must conduct analyses~~ Analyses for lead, copper, pH, ~~conductivity, calcium,~~ alkalinity, orthophosphate, ~~and~~ silica, ~~and temperature must be conducted~~ using the methods ~~set forth~~ in Section 611.611(a).

- a) ~~Only a certified laboratory in one of the categories in Section 611.490(a) may conduct analyses~~ Analyses for lead and copper ~~to demonstrate that a supplier complies performed for the purposes of compliance~~ with this Subpart G ~~must only be conducted by a certified laboratory in one of the categories listed in Section 611.490(a)~~. To obtain certification ~~for conducting to conduct~~ analyses for lead and copper, ~~a laboratory~~ laboratories must ~~fulfill specific conditions~~ ~~do the following~~:
- 1) ~~The laboratory must analyze lead- and copper-containing~~ Analyze performance evaluation samples ~~that include lead and copper~~ provided by USEPA ~~Environmental Monitoring and Support Laboratory~~ or ~~equivalent samples provided by~~ the Agency;
  - 2) ~~The laboratory must achieve certain~~ Achieve quantitative acceptance limits ~~as follows~~:
    - A) For lead:  $\pm 30$  percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.005 mg/l (the PQL for lead is 0.005 mg/l);

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- B) For copper:  $\pm 10$  percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.050 mg/l (the PQL for copper is 0.050 mg/l);
- 3) ~~The laboratory must achieve~~Achieve the method detection limit (MDL) for lead ~~of~~ (0.001 mg/l ~~using, as defined in Section 611.350(a)) according to~~ the procedures in 35 Ill. Adm. Code 186 and appendix B to 40 CFR 136: "Definition and Procedure for the Determination of the Method Detection Limit – Revision 1.11", incorporated by reference in Section 611.102(c). ~~This need only be accomplished if the laboratory will be processing source water composite samples under Section 611.358(a)(1)(D); and~~
- 4) ~~The laboratory must have current certification~~Be currently certified to perform analyses ~~under~~ the specifications ~~this described in~~ subsection (a)(1) ~~describes~~.

BOARD NOTE: ~~This subsection~~Subsection (a) ~~derives is derived~~ from 40 CFR 141.89(a) and (a)(1).

- b) The Agency must ~~issue, by~~ a SEP ~~allowing, allow~~ a supplier to use previously collected monitoring data ~~for the purposes of monitoring~~ under this Subpart G if the ~~supplier data were~~ collected and analyzed ~~the data complying in accordance with the requirements of~~ this Subpart G.

BOARD NOTE: ~~This subsection~~Subsection (b) ~~derives is derived~~ from 40 CFR 141.89(a)(2).

- c) Reporting Lead and Copper Levels
- 1) ~~The supplier must report all~~All lead and copper levels greater than or equal to the lead and copper PQL ( $Pb \geq 0.005$  mg/l and  $Cu \geq 0.050$  mg/l) ~~must be reported~~ as measured.
- 2) ~~The supplier must report all~~All lead and copper levels ~~measured~~ less than the PQL ~~but and~~ greater than the MDL ( $0.005$  mg/l  $> Pb > MDL$  and  $0.050$  mg/l  $> Cu > MDL$ ) ~~must be~~ either ~~reported~~ as measured or as one-half the PQL ~~set forth~~ in subsection (a) (i.e., ~~reported as~~ 0.0025 mg/l for

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lead or 0.025 mg/l for copper).

- 3) ~~The supplier must report all~~ lead and copper levels below the lead and copper MDL (MDL > Pb) ~~must be reported~~ as zero.

BOARD NOTE: ~~This subsection~~ Subsection (c) ~~derivesis derived~~ from 40 CFR 141.89(a)(3) and (a)(4).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.360 Reporting**

A supplier must report ~~specificall of the following~~ information to the Agency ~~asin accordance with~~ this Section ~~provides~~.

- a) Reporting for Tap, Lead, and Copper, and Water Quality Parameter Monitoring
- 1) ~~Notwithstanding Section 611.840(a) and except~~ Except as ~~provided in~~ subsection (a)(1)(H) ~~provides otherwise~~, a supplier must report the ~~following~~ information ~~subsections (a)(1)(A) through (a)(1)(I) specify~~ for all samples ~~specified in Section 611.356~~ and for all water quality parameter samples ~~specified in~~ Section 611.357 ~~specifies~~ within ten days after the end of each applicable ~~tap~~ sampling period ~~specified in~~ Sections 611.356 and 611.357 ~~specify~~ (i.e., every six months, annually, ~~triennially every three years~~, or every nine years). For a ~~tap~~ monitoring ~~cycle shorter period with a duration less~~ than six months, the end of the ~~tap~~ monitoring ~~cycle period~~ is the last date on which ~~the supplier may collect~~ samples ~~can be collected~~ during that ~~tap sampling~~ period, as ~~specified in~~ Sections 611.356 and 611.357 ~~specify~~.
- A) The results of all tap samples for lead and copper, including the location of each site and the criteria under Section 611.356(a)(3) through (a)(~~107~~) ~~the supplier used as the basis for selecting under~~ ~~which~~ the site ~~was selected~~ for ~~its the supplier's~~ sampling pool, ~~accounting for Section 611.356(a)(11)~~;
- B) ~~Supporting documents~~ Documentation for each tap water lead or copper sample ~~for which~~ the ~~water~~ supplier requests ~~the Agency~~ ~~invalidate~~ invalidation under Section 611.356(f)(2);

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- C) A supplier having lead, galvanized requiring replacement, or lead status unknown service lines in its lead service line inventory under Section 611.354(a) must re-evaluate the tap sampling locations the supplier uses in its sampling pool prior to the compliance date Section 611.350(a) specifies, then the more frequent of annually or prior to the each subsequent round of tap sampling the supplier conducts, whichever is more frequent; This subsection (a)(1)(C) corresponds with 40 CFR 141.90(a)(1)(iii), a provision that USEPA removed and marked "reserved". This statement preserves structural parity with the federal rules;
- i) Before the first applicable tap monitoring cycle under Section 611.356(d), the supplier must submit a site sample plan to the Agency under Section 611.356, including a list of tap sample site locations identified in the inventory under Section 611.354(a), and a list a tap sampling WQP sites the supplier selected under Section 611.357(a)(1). The supplier must update and submit the site sample plan to the Agency before changing any sample site locations. The Agency may issue a SEP requiring the supplier to modify its site sample plan as necessary.
  - ii) For a supplier having lead service line sites but an insufficient number to meet the minimum number Section 611.356 requires, the supplier must document support for its conclusion that it has an insufficient number of lead service line sites complying with the applicable of Section 141.86(a)(3) or (a)(4) (for a CWS supplier) or Section 141.86(a)(8) (for an NTNCWS supplier);
- D) The 90<sup>th</sup> percentile lead and copper concentrations the supplier measures~~measured~~ from among all lead and copper tap samples the supplier collect~~collected~~ during each tap sampling period (calculated under~~in accordance with~~ Section 611.350(c)(3)), unless the Agency calculates the supplier's system's 90<sup>th</sup> percentile lead

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and copper ~~concentrations~~ levels under subsection (h);

- E) With the exception of initial tap sampling ~~conducted~~ under Section 611.356(d)(1), the supplier must ~~identify~~ designate any site ~~it did that was~~ not ~~samples~~ sampled during previous tap sampling periods; and ~~explain~~ include an explanation of why sampling sites have changed;
- F) The results of all water quality parameter tap samples ~~the supplier must collect for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected~~ under Section 611.357(b) through (e);
- G) The results of all samples ~~the supplier collect~~ collected at entry points for applicable water quality parameters under Section 611.357(b) through (e); ~~and~~
- H) A ~~water~~ supplier must report the results of all water quality parameter samples ~~the supplier collect~~ collected under Section 611.357(c) through (f) during each six-month water quality monitoring period ~~specified in~~ Section 611.357(d) specifies within the first ten days following the end of the water quality monitoring period, unless the Agency ~~specifies~~ has specified, by a SEP, a more frequent reporting requirement in a SEP; and
- I) Before the first applicable tap sampling period under Section 611.356(d), the supplier must submit to the Agency, a copy of the tap sampling protocol the supplier provides to persons sampling. The Agency must verify that the supplier uses wide-mouth collection bottles and the supplier does not recommend pre-stagnation flushing or aerator cleaning or removal before collecting samples under Section 611.356(b). The tap sampling protocol must contain instructions for correctly collecting a first draw sample at a site without a lead service line and a first draw and a fifth liter sample at a site with a lead service line, as applicable. If the supplier seeks to modify the tap sampling protocol it submitted this subsection (a)(1)(I), the supplier must submit the updated version of the protocol to the Agency for review and approval at least 60 days before using it.

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- 2) For ~~ana~~ NTNCWS supplier, or a CWS supplier complying with Section 611.355(b)(5)~~meeting the criteria of Sections 611.355(b)(7)(A) and (b)(7)(B), that does not~~ having~~have~~ enough taps for which can provide first-draw or fifth liter tap samples, the supplier must do one~~either~~ of two~~the following~~:
- A) The supplier must identify~~Provide written documentation~~ to the Agency in writing~~that identifies~~ standing times and locations for enough non-first-draw and fifth liter tap samples to make up its sampling pool under Section 611.356(b)(5), unless the Agency waives~~has waived~~ prior Agency approval of non-first-draw and fifth liter tap sampling sites selected by the supplier selects under Section 611.356(b)(5); or
- B) If the Agency waives~~has waived~~ prior approval of non-first-draw sampling sites selected by the supplier selects, the supplier must identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected under Section 611.356(b)(5) in writing and include this information with the lead and copper tap sample results the supplier must submit~~required to be submitted~~ under subsection (a)(1)(A).
- 3) At a time specified by the Agency specifies in, by a SEP, or if no specific time is designated by the Agency, then as early as possible prior to the addition of a new source or any change in water treatment, a water supplier deemed to have optimized corrosion control under Section 611.351(b)(3), a water supplier subject to reduced monitoring under Section 611.356(d)(4), or a water supplier subject to a monitoring waiver under Section 611.356(g), must document adding a new source or any change in water treatments~~submit written documentation~~ to the Agency describing the change or addition or change. If the Agency does not specify a time in a SEP, the supplier must document the changes to the Agency as early as possible but no later than six months before adding a new source or any change in water treatment. The Agency may issue a SEP requiring a supplier to take actions before or after adding a new source or making a long-term change in treatment to ensure the supplier will operate and maintain OCCT, like additional water quality parameter

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monitoring, additional lead or copper tap sampling, and re-evaluating corrosion control treatment.

BOARD NOTE: USEPA gives examples of long-term changes in treatment as including adding a new treatment process or modifying an existing treatment process. USEPA gives examples of modifying treatment as including switching secondary disinfectants, coagulants (e.g., alum to ferric chloride), or corrosion inhibitor (e.g., orthophosphate to blended phosphate). USEPA said that long-term changes can also include dose changes to existing chemicals if the supplier plans long-term changes to its finished water pH or residual inhibitor concentration. USEPA said that long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes where the supplier does not add a new source.

- 4) Any small ~~system~~-supplier applying for a monitoring waiver under Section 611.356(g), or subject to a waiver granted under Section 611.356(g)(3), must provide certain the following information to the Agency in writing before by the applicablespecified deadline:
- A) BeforeBy the start of the first applicable tap monitoring cycleperiod in Section 611.356(d), any small ~~water system~~ supplier applying for a monitoring waiver must provide the documents demonstrating documentation required to demonstrate that the supplier qualifies for it meets the waiver under Section criteria of Sections 611.356(g)(1) and (g)(2).
- B) No later than nine years after the monitoring the supplier previously conducted under Section 611.356(g)(2) or Section 611.356(g)(4)(A), each small ~~system~~-supplier wantingdesiring to maintain its monitoring waiver must provide the information Sectionrequired by Sections 611.356(g)(4)(A) and (g)(4)(B) requires.
- C) No later than 60 days after the small supplier becomes aware that it is no longer free of lead-containing or copper-containing material, as appropriate, each small ~~system~~-supplier havingwith a monitoring waiver must notifyprovide written notification to the Agency in writing, statingsetting forth the circumstances

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~~introducing lead resulting in the lead-containing~~ or copper-containing materials ~~being introduced~~ into the system and ~~describing any what~~ corrective action, ~~if any~~, the supplier plans to remove these materials.

~~D) Any small system supplier with a waiver granted prior to April 11, 2000 and that had not previously met the requirements of Section 611.356(g)(2) must have provided the information required by that Section.~~

5) ~~A~~Each GWS supplier ~~limiting its that limits~~ water quality parameter monitoring to a subset of entry points under Section 611.357(c)(3) must ~~identify its selected entry points provide, by the commencement of such monitoring, written correspondence~~ to the Agency ~~in writing, including that identifies the selected entry points and includes~~ information ~~sufficiently demonstrating sufficient to demonstrate~~ that the sites ~~representare representative of~~ water quality and treatment conditions throughout the ~~supplier's~~ system.

b) Reporting for Source Water Monitoring

1) A supplier must report ~~its the~~ sampling results for all source water samples ~~it collects under collected in accordance with~~ Section 611.358 within ten days after the end of each source water ~~monitoringsampling~~ period (~~i.e., annually, per compliance period, per compliance cycle~~) specified in Section 611.358 ~~specifies~~.

2) With the exception of the first round of source water sampling ~~a supplier conductseonducted~~ under Section 611.358(b), a supplier must specify any site ~~it did that was~~ not ~~sample sampled~~ during ~~source water monitoringprevious sampling~~ periods, ~~explaining and include an explanation of~~ why ~~the supplier changed~~ the sampling point ~~has changed~~.

c) Reporting for Corrosion Control Treatment. ~~Before~~By the applicable dates under Section 611.351, a supplier must report ~~certain the following~~ information:

1) ~~A~~For a supplier demonstrating that it ~~has~~ already optimized corrosion control ~~must provide~~, the information ~~required by~~ Section ~~611.351(b)(1) through 611.352(b)(2) or~~ (b)(3) ~~requires~~.



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- 2) ~~A~~For a supplier ~~that must~~~~required to~~ optimize corrosion control ~~must provide~~; its recommendation regarding ~~OCCT~~~~optimal corrosion control treatment~~ under Section 611.352(a).
  - 3) ~~A~~For a supplier ~~that must~~~~required to~~ evaluate the effectiveness of corrosion control treatments under Section 611.352(c) ~~must provide~~; the information ~~required by~~ Section 611.352(c) ~~requires~~.
  - 4) ~~A~~For a supplier ~~that must~~~~required to~~ install optimal corrosion control ~~approved by~~ the Agency ~~approves~~ under Section 611.352(d) ~~must provide~~; a copy of the Agency permit letter, which acts as certification that the supplier ~~has~~ completed installing the permitted treatment.
- d) Reporting for Source Water Treatment. ~~Before~~~~On or before~~ the applicable dates in Section 611.353, a supplier must provide ~~certain the following~~ information to the Agency:
- 1) If ~~required by~~ Section 611.353(b)(1) ~~requires~~, ~~the supplier must provide~~ its recommendation ~~on~~~~regarding~~ source water treatment; or
  - 2) ~~A supplier that must~~~~For suppliers required to~~ install source water treatment under Section 611.353(b)(2) ~~must provide~~; a copy of the Agency permit letter, which acts as certification that the supplier ~~has~~ completed installing the ~~Agency-approved~~ treatment ~~approved by the Agency~~ within 24 months after ~~the~~ Agency ~~approval~~~~approved the treatment~~.
- e) Reporting for Lead Service Line Inventory and Replacement. A supplier must report ~~certain the following~~ information to the Agency ~~demonstrating it complies to demonstrate compliance~~ with ~~Sections the requirements of Section~~ 611.354 ~~and 611.355~~:
- 1) No later than October 16, 2024, the supplier must submit an inventory of service lines to the Agency, as Section 611.354(a) requires.
  - 2) No later than October 16, 2024, a supplier that inventoried a lead, galvanized requiring replacement, or lead status unknown service line in its distribution system must submit a lead service line replacement plan to the Agency, as Section 141.84(b) requires.

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- 3) The supplier must provide the Agency with an updated version of its inventory under Section 611.354(a) consistent with its tap monitoring cycle schedule under Section 611.356(d), but no more frequently than annually. The supplier must submit its updated inventory within 30 days after the end of each tap monitoring cycle.
  - A) If the supplier demonstrates that it has no lead, galvanized requiring replacement, or lead status unknown service lines in its inventory, the supplier needs no longer submit inventory updates to the Agency, except as subsection (e)(3)(B) requires.
  - B) If a supplier complying with subsection (e)(3)(A) subsequently discovers that it must replace any service lines in its distribution system, the supplier must notify the Agency within 30 days after identifying the service lines and prepare an updated inventory under Section 611.354(a) on a schedule the Agency establishes in a SEP.
- 4) Within 30 days after the end of each tap monitoring cycle, the supplier must certify replacing any encountered lead goosenecks, pigtails, and connectors under Section 611.354(c).
- 5) Within 30 days after the end of each tap monitoring cycle, the supplier must certify to the Agency that the supplier made any partial and full lead service line replacements under Section 611.354(d) and (e).
- 6) If it fails to meet the 45-day deadline for completing a customer-initiated lead service line replacement under Section 611.354(d)(4), a supplier must notify the Agency within 30 days after the deadline to request that the Agency extend the deadline up to 180 days for completing the customer-initiated lead service line replacement. The supplier must annually certify that it has completed all customer-initiated lead service line replacements under Section 611.354(d)(4).
- 7) No later than 30 days after the end of the supplier's annual period for replacing lead service lines under Section 611.354(f) or (g), the supplier must submit certain information to the Agency and continue submitting

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the information each year the supplier conducts lead service line replacements under Section 611.354(f) or (g):

- A) The number of lead service lines, as Section 611.354(a)(4) defines the term, in its inventory at the beginning of the annual period;
  - B) The number of galvanized requiring replacement service lines in its inventory at the beginning of the annual period;
  - C) The number of lead status unknown service lines, as Section 611.354(a)(4) defines the term, in its inventory at the beginning of the annual period;
  - D) The number of full lead service line replacements the supplier has made and the street address for each service line the supplier replaced;
  - E) The number of galvanized requiring replacement service lines the supplier replaced and the street address for each service line the supplier replaced;
  - F) The number of lead status unknown service lines, as Section 611.354(a)(4) defines the term, remaining in its inventory;
  - G) The total number of lead status unknown service lines the supplier determines are non-lead, as Section 611.354(a)(4) defines the terms; and
  - H) The total number of service lines the supplier initially inventoried as non-lead later and later discovered are lead or galvanized requiring replacement service lines.
- 8) No later than 30 days after the end of each tap sampling period, a supplier that received a customer refusal for a lead service line replacement or no customer response after the supplier makes a minimum of two good-faith efforts to contact customers regarding a full lead service line replacement under Section 611.354(g)(7) must certify to the Agency the number of customer refusals or non-responses it received from customers the supplier

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serves through a lead or galvanized requiring replacement service line. The supplier must maintain these documents.

- 91) No later than 12 months after the end of a tap sampling~~monitoring~~ period during~~in~~ which a supplier exceeds the lead action level in sampling underreferred to in Section 611.356~~611.354(a)~~, the supplier must provide to the Agency its schedule for annually replacing at least the number of service lines in its distribution system that Section 611.254(g) requires.~~submit each of the following to the Agency in writing:~~
- A) ~~The material evaluation conducted as required by Section 611.356(a);~~
  - B) ~~Identify the initial number of lead service lines in its distribution system at the time the supplier exceeds the lead action level; and~~
  - C) ~~Provide the Agency with the supplier's schedule for annually replacing at least seven percent of the initial number of lead service lines in its distribution system.~~
- 102) No later than 12 months after the end of a sampling~~monitoring~~ period during~~in~~ which a supplier exceeds the lead trigger~~action~~ level in monitoring~~undersampling referred to in~~ Section 611.356~~611.354(a)~~, and every 12 months after that~~thereafter~~, the supplier must certify~~demonstrate~~ to the Agency in writing ~~that the supplier has done either of the following:~~
- A) That the supplier conducted consumer notification, as Sections 611.354(f)(4) and 611.355(g) require; and~~has replaced, in the previous 12 months, at least seven percent of the initial number of lead service lines in its distribution system (or any greater number of lines specified by the Agency under Section 611.354(e)); or~~
  - B) That the supplier delivered public education materials to the affected consumers, as specified in Section 611.355(a).~~has conducted sampling that demonstrates that the lead concentration in all service line samples from individual lines, taken under Section 611.356(b)(3), is less than or equal to 0.015 mg/l. This demonstration requires that the total number of lines that the supplier has replaced, combined with the total number that meet~~

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~~the criteria of Section 611.354(e), must equal at least seven percent of the initial number of lead lines identified under subsection (e)(1) (or the percentage specified by the Agency under Section 611.354(e)).~~

C) If a supplier does not fulfill its annual service line replacement goal under Section 611.354(f), it must certify to the Agency in writing that the supplier conducted public outreach, as Section 141.85(h) requires. The supplier must also submit the outreach materials it used to the Agency.

113) The annual certification the supplier submits letter submitted to the Agency under subsection (e)(102) must certify that the supplier provided the results from samples it collected between three months and six months after fully or partially replacing a lead service line to the resident within the timeframe Section 611.355(d)(2) requires. A mailed notice postmarked within three business days after receiving the results is timely.~~contain the following information:~~

A) The number of lead service lines originally scheduled to be replaced during the previous year of the supplier's replacement schedule;

B) The number and location of each lead service line actually replaced during the previous year of the supplier's replacement schedule; and

C) If measured, the water lead concentration from each lead service line sampled under Section 611.356(b)(3) and the location of each lead service line sampled, the sampling method used, and the date of sampling.

124) Any supplier collecting that collects lead service line samples following partial lead service line replacement required by Section 611.354 requires must report the results to the Agency before the tenth day of within the first ten days after the next month after following the month in which the supplier receives the laboratory results, or as specified by the Agency specifies in a SEP. The Agency may issue, by a SEP waiving the supplier reporting, eliminate this requirement to report these monitoring results, but

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the supplier must retain these records. A supplier must also report any additional information ~~as specified by~~ the Agency specifies, and in a time and manner ~~prescribed by~~ the Agency prescribes, to verify that the supplier completed all partial lead service line replacement activities ~~have taken place.~~

13) A supplier having lead service lines in its inventory must certify on an annual basis that the supplier complied with consumer notification of service line containing lead under Section 611.355(e).

f) Reporting for Public Education Program

- 1) Any water supplier ~~that is~~ subject to ~~the public education requirements in~~ Section 611.355 must send documents to the Agency containing certain items; within ten days after the end of each period in which the supplier ~~mustis required to~~ perform public education underin accordance with Section 611.355(b); ~~send written documentation to the Agency that contains the following:~~
- A) The public education materials the supplier delivered, and documents showingA demonstration that the supplier ~~has~~ delivered the public education materials complying withthat meet the content requirements in Sections 611.355(a) and the delivery requirements in Section 611.355(b); and
- B) A list of all ~~the~~ newspapers, radio stations, television stations, and facilities and organizations to which the supplier delivered public education materials when this Subpart C ~~during the period in which the supplier was~~ required the supplier to perform public education tasks.
- 2) Unless ~~required by~~ the Agency issues, ~~by~~ a SEP requiring a supplier to do so, a supplier that previously ~~has~~ submitted the information ~~required by~~ subsection (f)(1)(B) requires need not resubmit the information ~~required by~~ subsection (f)(1)(B) requires, as long as ~~there have been~~ no changes in the distribution list occurred, and the supplier certifies that it distributed the public education materials ~~were distributed~~ to the same list the supplier previously submitted ~~previously.~~

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- 3) No later than three months ~~after following~~ the end of the ~~tap sampling monitoring~~ period, each supplier must mail a sample copy of the consumer notification of tap ~~water monitoring~~ results to the Agency, ~~certifying along with a certification~~ that ~~the supplier distributed~~ the notification ~~has been distributed~~ in a manner ~~complying consistent~~ with ~~the requirements of~~ Section 611.355(d).
  - 4) ~~The supplier must demonstrate to the Agency before July 1 of each year that the supplier delivered annual consumer notice and lead service line information materials under Section 611.355(e) to affected consumers the supplier serves through a lead, galvanized requiring replacement, or lead status unknown service line during the previous calendar year. The supplier must also provide a copy of the consumer notice and information materials to the Agency.~~
  - 5) ~~The supplier must demonstrate to the Agency before July 1 of each year that the supplier conducted an outreach activity under Section 611.355(h) if the supplier failed to meet the lead service line replacement goal under Section 611.354(f) during the previous calendar year. The supplier must also submit a copy to the Agency of the outreach it provided to customers.~~
  - 6) ~~The supplier must certify to the Agency before July 1 of each year that the supplier delivered notice to affected customers under Section 611.355(f) after any lead service line disturbance during the previous calendar year. The supplier must also submit a copy of the notice to the Agency.~~
  - 7) ~~The supplier must certify to the Agency before July 1 of each year that the supplier delivered the required find-and-fix information to the Agency and local health departments under Section 611.356(i) during the previous calendar year.~~
- g) Reporting ~~of~~ Additional Monitoring Data. Any supplier ~~collecting more samples than the required minimum that collects sampling data in addition to that required by this Subpart G~~ must report ~~those sampling data the results of that sampling~~ to the Agency within the first ten days following the end of the applicable sampling periods ~~specified by~~ Sections 611.356 through 611.358 ~~specify~~ during which ~~the supplier collected~~ the samples ~~are collected~~. ~~This includes the monitoring data for “find-and-fix” under Sections 611.356(h) and 611.357(g). The supplier must certify to the Agency the number of customer refusals or nonresponses for follow-~~

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up sampling it received under Section 611.352(j) with information supporting the accuracy of the refusals or non-responses. The supplier must certify within the first ten days after the end of the applicable tap sampling period during which any individual sample exceeded the lead action level.

- h) Reporting ~~of~~ 90<sup>th</sup> Percentile Lead and Copper Concentrations ~~If Where~~ the Agency Calculates a ~~Supplier's System's~~ 90<sup>th</sup> Percentile Concentrations. A water supplier ~~needs is~~ not ~~required to~~ report ~~its the~~ 90<sup>th</sup> percentile lead and copper concentrations ~~measured from among all lead and copper tap water samples collected during~~ each ~~tap~~ monitoring ~~cycle period~~, as ~~required by~~ subsection (a)(1)(D) ~~requires,~~ under certain circumstances if the following is true:
- 1) The Agency ~~has~~ previously notified the ~~water~~ supplier that ~~the Agency it~~ will calculate the ~~supplier's water system's~~ 90<sup>th</sup> percentile lead and copper concentrations; based on the lead and copper tap results ~~the supplier~~ submitted under subsection (h)(2)(A), and ~~has specified a date before the end of the applicable monitoring period by which~~ the supplier ~~provides must provide~~ the results ~~from of~~ lead and copper tap water samples ~~no later than ten days after the end of the applicable tap monitoring cycle;~~
  - 2) The supplier ~~provides has provided~~ the ~~specific following~~ information to the Agency ~~before by~~ the date ~~specified in~~ subsection (h)(1) ~~specifies:~~
    - A) The results ~~from of~~ all tap ~~water~~ samples for lead and copper, including the location of each site and the ~~criteria under~~ Section 611.356(a)(3) ~~through (a)(10) criteria, (a)(4), (a)(5), (a)(6), or (a)(7)~~ under which ~~the supplier selected~~ the site ~~was selected for its the system's~~ sampling pool, ~~under subsection (a)(1)(A); and~~
    - B) ~~The supplier must identify~~ ~~An identification of~~ sampling sites ~~it used utilized~~ during the current ~~tap~~ monitoring ~~cycle period~~ that ~~it did were~~ not ~~samples sampled~~ during previous ~~tap~~ monitoring ~~cycles periods~~, ~~explaining and an explanation~~ why ~~the supplier changed~~ sampling sites ~~have changed;~~ and
  - 3) The Agency ~~provides has provided~~ the ~~written~~ results of ~~calculating~~ the 90<sup>th</sup> percentile lead and copper ~~concentrations calculations, in writing,~~ to the ~~water~~ supplier ~~within 15 days after before~~ the end of the ~~tap~~



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sampling~~monitoring~~ period.

- i) Reporting Requirements for CWS Public Education and Sampling in Schools and Child Care Facilities
  - 1) A CWS supplier must report to the Agency before July 1 of each year the previous calendar year's activity. The report must include certain information:
    - A) The supplier must certify that it made a good faith effort to identify schools and child care facilities under Section 611.362(e). The good faith effort may include reviewing customer records and requesting lists of schools and child care facilities from the Agency, the Department of Children and Family Services, the State Board of Education, or other pertinent local agency. A supplier certifying that it serves no schools or child care facilities needs not include the information subsections (i)(1)(B) through (i)(1)(D) require in the report. If changes occur to schools and child care facilities a supplier serves, the supplier must submit an updated list at least once every five years under Section 611.362(e).

BOARD NOTE: The Department of Children and Family Services regulates daycare facilities in Illinois, and the State Board of Education regulates primary and secondary schools. Local agencies may play a role, and many facilities and schools are not regulated under Illinois law. E.g., 225 ILCS 10 and 105 ILCS 5.
    - B) The supplier must certify that it delivered information about health risks from lead in drinking water to the school and child care facilities it serves under Section 611.362(a)(2) and (g)(1).
    - C) The supplier must certify that it completed notifying and sampling under Section 611.362 and subsections (i)(1)(C)(i) through (i)(1)(C)(v) at a minimum of 20 percent of elementary schools and 20 percent of child care facilities the supplier serves. The supplier must certify that it completed notifying and sampling under Section 611.362(g) and subsections (i)(1)(C)(i), (i)(1)(C)(ii), and (i)(1)(C)(v) for secondary schools the supplier sampled. After a

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supplier completes one cycle of required sampling in all elementary schools and child care facilities it identified under Section 611.362(a)(1), the supplier must subsequently certify that it completed notifying and sampling under Section 611.362(g) and subsections (i)(1)(C)(i), (i)(1)(C)(ii), and (i)(1)(C)(v) for all sampling the supplier later completes in any school or child care facility.

- i) The number of schools and child care facilities the supplier serves;
  - ii) The number of schools and child care facilities the supplier sampled in the calendar year;
  - iii) The number of schools and child care facilities that refused sampling;
  - iv) Information about outreach attempts for sampling that a school or child care facility declined; and
  - v) The analytical results for all schools and child care facilities the supplier sampled in the calendar year.
- D) The supplier must certify that it provided its sampling results to schools, child care facilities, and the Illinois Department of Public Health and local health agencies.
- 2) This subsection (i)(2) corresponds with 40 CFR 141.90(i)(2), which USEPA marked "reserved". This statement maintains structural consistency with the corresponding USEPA rules.
- j) Reporting Requirements for Small Supplier Compliance Flexibility Options. Before the times subsections (j)(1) and (j)(2) provide, a supplier implementing a small supplier compliance option under Section 611.363 must provide certain information to the Agency:
- 1) Point-of-Use Device Option. A small CWS or NTNCWS supplier implementing the point-of-use device option under Section 611.363(a)(3), must report the results from tap sampling under Section 611.363 no later

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than ten days after the end of the tap monitoring cycle. If results exceed the lead trigger level, the supplier must reach out to the homeowner or building management within 24 hours after receiving the tap sample results. The supplier must complete corrective action within 30 days. If the supplier does not complete corrective action within 30 days, the supplier must document to the Agency within 30 days of the failure explaining why the supplier was unable to correct the issue. A supplier selecting the point-of-use device option under Section 611.363(a)(3) must document to the Agency certifying that the supplier maintains the point-of-use devices, unless the Agency issues a SEP waiving this requirement.

- 2) Replacing Lead-Bearing Plumbing Option. A small CWS or NTNCWS supplier implementing the option of replacing all lead-bearing plumbing under Section 611.363(a)(4) must certify to the Agency that the supplier replaced all lead-bearing material on the schedule the Agency establishes in a SEP within one year after designating the option under Section 611.363(a)(4).

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.90.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 611.361 Recordkeeping**

Any supplier subject to ~~the requirements of~~ this Subpart G must retain ~~on its premises~~ original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, Agency determinations, and any other information ~~required by~~ Sections 611.351 through ~~Section~~ 611.360, 611.362, and 611.363 require. Each supplier must retain the records ~~required by~~ this Section requires on its premises for at least 12 years.

BOARD NOTE: This Section derives~~Derived~~ from 40 CFR 141.91 ~~(2002)~~.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 611.362 Monitoring for Lead in Schools and Child Care Facilities**

A CWS supplier must conduct directed public education and lead monitoring at those schools and child care facilities it serves that were constructed prior to January 1, 2014. A supplier must sample for lead at elementary schools and child care facilities it serves once and

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afterwards on request of the school or facility. The supplier must also sample for lead at secondary schools it serves on request. This Section does not apply to a school or child care facility that is a regulated PWS. This subsection (a) applies until the supplier samples all the elementary schools and child care facilities it serves once under subsection (c). After sampling all elementary schools and child care facilities, the supplier must comply with subsection (g).

a) Public Education to Schools and Child Care Facilities

- 1) Before the compliance date Section 611.350(a)(3) specifies, a supplier must compile a list of schools and child care facilities the supplier serves.
- 2) A supplier must contact elementary schools and child care facilities the supplier listed under subsection (a)(1):
  - A) The supplier must annually or more frequently provide information about health risks from lead in drinking water that complies with Section 611.355(a);
  - B) Notice that the supplier must sample for lead at elementary schools and child care facilities, including certain information:
    - i) A proposed schedule for sampling at the facility;
    - ii) Information about sampling for lead in schools and child care facilities; and

BOARD NOTE: USEPA has guidance available from USEPA, National Center for Environmental Publications: "3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities: A Training, Testing, and Taking Action Approach, Revised Manual" (October 2018), USEPA, Office of Water, doc. no. EPA 815-B-18-007 (search: "815B18007") and "U.S. EPA 3Ts Program Training, Testing & Taking Action: Lead Sample Collection Field Guide for Schools and Child Care Facilities" (July 2022), USEPA, Office of Water, doc. no. EPA 815-F-22-009 (search: "815F22009").

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- iii) Instructions for identifying sampling outlets and preparing for a sampling event 30 days prior to the event.
  - 3) The supplier must document under Section 611.360(i) if an elementary school or child care facility fails to respond or otherwise declines to participate in monitoring or education under this Section. Under this Section, a school or child care facility fails to respond after the supplier makes at least two separate good faith attempts to contact the facility to schedule sampling and receives no response.
  - 4) The supplier must annually or more frequently contact all secondary schools it listed under subsection (a)(1) to provide information on health risks from lead in drinking water and how to request lead sampling under subsection (g)(1).
- b) Lead Sampling in Schools and Child Care Facilities
  - 1) The supplier must collect five samples per school and two samples per child care facility at outlets typically used for consumption. Except as subsections (b)(1)(A) through (b)(1)(D) provide otherwise, the outlets must not have a POU device. The supplier must sample at specific locations:
    - A) For schools: two drinking water fountains, one kitchen faucet persons use for preparing food or drink, one classroom faucet or other outlet persons use for drinking, and one nurse's office faucet, as available.
    - B) For child care facilities: one drinking water fountain and one of either a kitchen faucet persons use for preparing food or drink or one classroom faucet or other outlet persons use for drinking.
    - C) If any school or facility has fewer than the required number of outlets, the supplier must sample all outlets persons use for consumption.

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- D) The supplier may sample at outlets having POU devices if the school or facility has POU devices installed on all outlets persons typically use for consumption.
- E) If any school or facility does not contain the type of faucet listed above, the supplier must collect a sample from another outlet the school or facility identifies as one persons typically use for consumption.
- F) The supplier must collect all samples from cold water taps fulfilling specific additional requirements:
- i) All samples for lead must be first-draw samples;
  - ii) All samples must be 250 ml in volume;
  - iii) The water must remain stationary in the sampling site's (building's) plumbing system for at least eight but no more than 18 hours before sampling; and
  - iv) The supplier must acidify samples and analyze them using the analytical methods in Section 611.359.
- 2) Appropriately trained personnel of the water system, school, or child care facility or another appropriately trained person may collect samples under subsection (b)(1).
- c) Sampling Frequency at Elementary Schools and Child Care Facilities
- 1) Annually, or on an alternative Agency-approved schedule, the supplier must collect samples from no fewer than 20 percent of elementary schools and 20 percent of child care facilities the supplier serves, until the supplier samples all schools and child care facilities it listed under subsection (a)(1) that did not decline to participate. Under this Section, a supplier may count an elementary school or child care facility failing to respond or otherwise declining to participate as part of its annual 20 percent minimum.

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- 2) A supplier must sample all elementary schools and child care facilities it serves at least once in the five years following the compliance date under Section 611.360(a)(3).
  - 3) After a supplier completes one required cycle of sampling in all elementary schools and child care facilities it serves, the supplier must sample at the request of any elementary school or child care facility under subsection (g).
  - 4) A supplier must sample at the request of a secondary school under subsection (g). If a supplier receives requests from more than 20 percent of secondary schools it listed under subsection (a)(1) in any of the five years following the compliance date under Section 141.80(a)(3), the supplier may schedule the requests exceeding 20 percent for the following year, and the supplier needs not sample an individual secondary school more than once during the five-years.
- d) Alternative School and Child Care Lead Sampling Programs
- 1) If a CWS supplier conducts mandatory sampling for lead in drinking water for schools and child care facilities the supplier serves under another State or local law or program, the Agency may issue a SEP exempting the supplier from duplicative requirements under this Section:
    - A) If the sampling under that State or local law or program is consistent with subsections (b) and (c);
    - B) If the sampling under that State or local law or program is consistent with subsections (b)(1)(A) through (b)(1)(vi) and (c) and the sampling is coupled with certain remediation actions:
      - i) Disconnecting affected fixtures;
      - ii) Replacing affected fixtures with fixtures certified lead-free as Section 611.126(j) requires; or
      - iii) Installing POU devices;

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- C) If the sampling under that State or local law or program occurs in schools and child care facilities the supplier serves less frequently than once every five years, and the sampling is coupled with any of the remediation actions in subsection (d)(1)(B); or
- D) If the sampling is conducted under a voluntary school and child care program lead testing grant awarded under section 1464(d) of SDWA (42 USC 300j-24(d)), consistent with the requirements of the grant.
- 2) The term of the waiver may not exceed the duration of the mandatory or voluntary sampling, and the waiver must automatically expire at the end of any 12-month period during which sampling does not occur at the required number of schools or child care facilities.
- 3) The Agency may issue a SEP granting the supplier a partial waiver if the sampling covers only a subset of the schools or child care facilities the supplier serves as it listed under subsection (a)(1).
- 4) The Agency may issue a SEP granting a waiver applicable to more than one supplier (e.g., one waiver for all suppliers subject to a statewide sampling program complying with subsection (d)).
- e) Confirming or Revising Schools and Child Care Facilities in Inventory. At least once every five years, a supplier must either confirm that the list it assembled under subsection (a)(1) of schools and child care facilities it serves has not changed or submit a revised list.
- f) Notice of results.
- 1) A supplier must provide analytical results to the school or child care facility as soon as practicable but no later than 30 days after receiving them with information about remediation options.
- 2) A water system must annually provide analytical results:
- A) To the local and State health departments; and
- B) To the Agency under Section 611.360(i).



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- g) Lead Sampling in Schools and Child Care Facilities on Request
- 1) A supplier must contact schools and child care facilities the supplier identified under subsection (a)(1) at least annually to provide:
- A) Information about health risks from lead in drinking water;
- B) Information about how to request sampling for lead at the facility; and
- C) Information about sampling for lead in schools and child care facilities.
- BOARD NOTE: USEPA has guidance available from USEPA, National Center for Environmental Publications: "3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities: A Training, Testing, and Taking Action Approach, Revised Manual" (October 2018), USEPA, Office of Water, doc. no. EPA 815-B-18-007 (search: "815B18007") and "U.S. EPA 3Ts Program Training, Testing & Taking Action: Lead Sample Collection Field Guide for Schools and Child Care Facilities" (July 2022), USEPA, Office of Water, doc. no. EPA 815-F-22-009 (search: "815F22009").
- 2) A supplier must conduct sampling under subsection (b) when the school or facility requests, and the supplier must provide information to the facility:
- A) Instructions for identifying outlets for sampling and preparing for sampling at least 30 days before it occurs; and
- B) Results as subsection (f) requires.
- 3) If a supplier receives requests from more than 20 percent of the schools and child care facilities the supplier listed under subsection (a)(1) in a given year, the supplier may schedule sampling for those exceeding 20 percent for the following year. A supplier needs not sample an individual school or child care facility more than once every five years.

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- 4) The Agency may issue a SEP exempting a CWS supplier from this Section by issuing a written waiver under subsection (d) if the supplier conducts voluntary sampling for lead in drinking water complying with this Section at schools and child care facilities the supplier serves.

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.363 Small Supplier Compliance Flexibility**

This section gives compliance flexibility options applying to a small CWS supplier serving 10,000 or fewer persons or an NTNCWS supplier. A CWS or NTNCWS supplier having corrosion control treatment in place must continue operating and maintaining OCCT until the Agency issues a SEP determining this no longer necessary, and the supplier must comply with any conditions the Agency are appropriate before implementing an Agency-approved compliance flexibility option under this Section.

- a) A small CWS or NTNCWS supplier exceeding the lead trigger level but neither the lead nor copper action level must collect samples for water quality parameters under Section 611.357(b), evaluate compliance flexibility options under subsections (a)(1) through (a)(4), and recommend a compliance flexibility option to the Agency within six months of the end of the tap sampling period in which the exceedance occurred. When recommending to the Agency, the supplier must comply with Section 611.382(a)(1). The Agency must either approve the supplier's recommended compliance flexibility option or designate an alternative under subsections (a)(1) through (a)(4) within six months after the supplier recommends an option. If the supplier subsequently exceeds the lead action level, the supplier must implement the Agency-approved compliance flexibility option under subsection (b). A supplier must select one from among specific compliance flexibility options:
- 1) Replacing Lead Service Lines. A supplier must implement a program for full lead service line replacement on an Agency-approved schedule not exceeding 15 years. The supplier must begin replacing lead service lines within one year after the Agency approves or designates this compliance flexibility option.
- A) The supplier must replace lead service lines complying with Section 611.354(e) and (g)(4), (g)(8), and (g)(9).

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- B) The supplier must continue replacing lead service lines even if the supplier's 90th percentile lead concentration is at or below the lead action level in future tap monitoring cycles.
  - C) The supplier must have no lead, galvanized requiring replacement, or lead status unknown service lines in its inventory before ending its lead service line replacement program.
- 2) Corrosion Control Treatment. A supplier must install and maintain OCCT under Sections 611.351 and 611.352, even if its 90th percentile concentration is at or below the lead action level in future tap monitoring cycles. A supplier having installed corrosion control treatment must re-optimize its corrosion control treatment under Section 611.351(d). A supplier the Agency requires to optimize or re-optimize corrosion control treatment must follow the appropriate schedule in Section 611.351(d) or (e), beginning with Step 3 in Section 611.351(d)(3) or (e)(3), unless the Agency specifies OCCT under the applicable of Section 611.351(d)(2)(B) or (e)(2).
- 3) Point-of-Use Devices. A supplier must continue installing, maintaining, and monitoring POU devices in each household or building it serves even if its 90th percentile lead concentration is at or below the action level in future tap monitoring cycles.
- A) Schedule for Installing POU Devices
    - i) A CWS supplier must install a minimum of one POU device (at one tap) in every household and at every tap persons use for cooking or drinking in every non-residential building the supplier serves on a schedule not exceeding one year the Agency specifies in a SEP.
    - ii) An NTNCWS supplier must provide a POU device to every tap persons use for cooking or drinking on a schedule not exceeding three months the Agency specifies in a SEP.

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- B) A third party must independently certify the POU device to meet the American National Standards Institute standard applying to the specific type of POU unit for reducing lead in drinking water.
- C) The supplier must maintain each POU device according to its manufacturer's recommendations to ensure the POU device continues effectively filtering, including changing filter cartridges and resolving any operational issues. The POU devices must have mechanical warnings ensuring automatic notice to customers of operational problems. The supplier must certify to the Agency under Section 611.360(j)(1) that it maintains the POU devices, unless the Agency issues a SEP waiving this requirement.
- D) The supplier must monitor one-third of the POU devices each year and all POU devices within a three-year cycle. The supplier must collect first draw tap samples under this Section after water passes through the POU device to assess its performance. Samples must be one-liter in volume and have had a minimum six-hour stagnation time. Results from all samples must not exceed the lead trigger level. The supplier must report its tap sampling results no later than 10 days after the end of the tap monitoring cycle under Section 611.360(j)(1). The supplier must document the problem and take corrective action at any site exceeding the lead trigger level. If a site exceeds the lead trigger level, the supplier must reach out to the homeowner or building manager no later than 24 hours after receiving the tap sample results. The supplier must complete the corrective action within 30 days. If the supplier does not complete the corrective action within 30 days, the supplier must document to the Agency within 30 days explaining why the supplier was unable to correct the issue.
- E) The supplier must provide public education to consumers under Section 611.355(j) informing them how to properly use POU devices to maximize their effectiveness in reducing lead concentrations.
- F) The supplier must operate and maintain the POU devices until the Agency approves another compliance flexibility option, and supplier implements it.

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- 4) Replacing Lead-Bearing Plumbing. A supplier controlling all plumbing in buildings the supplier serves and having no lead status unknown, galvanized requiring replacement, or lead service lines must replace all plumbing that is not lead free as Section 611.126(c) defines the term when the supplier replaces it. Replacing all lead-bearing plumbing must occur on a schedule not exceeding one year as established by the Agency in a SEP. The supplier must certify to the Agency that it has replaced all lead-bearing material under Section 611.360(j)(2).
- b) Implementing a Compliance Option after Exceeding an Action Level
- 1) A supplier exceeding the lead action level after exceeding the lead trigger level but not exceeding the copper action level must implement the compliance option the Agency approved under subsection (a).
- 2) A supplier exceeding the lead action level but not the copper action level and not previously exceeding the lead trigger level must comply with subsection (a) and implement the compliance option the Agency approved under subsection (a).
- 3) A supplier exceeding the lead trigger level after implementing a compliance option the Agency approved under subsection (a) must complete the steps in subsection (a). If the supplier later exceeds the lead action level, the supplier must implement the compliance option the Agency approved under subsection (a).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART I: DISINFECTANT RESIDUALS, DISINFECTION  
BYPRODUCTS, AND DISINFECTION BYPRODUCT PRECURSORS

**Section 611.380 General Requirements**

- a) ~~The Requirements of~~ This Subpart I ~~Constitutes~~ ~~Constitute~~ NPDWRs
- 1) ~~This~~ ~~The regulations in this~~ Subpart I ~~establishes~~ ~~establish~~ standards ~~for~~ ~~under which~~ a CWS supplier or an NTNCWS supplier ~~adding that adds a~~ chemical disinfectant to ~~its the~~ water in any part of the ~~drinking water~~

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treatment process ~~modifying must modify~~ its practices to comply with meet MCLs and MRDLs in Sections 611.312 and 611.313, respectively, and complying with must meet the treatment technique requirements for DBP precursors in Section 611.385.

- 2) ~~This The regulations in this~~ Subpart I ~~establishes establish~~ standards for ~~under which~~ a transient non-CWS supplier ~~using that uses~~ chlorine dioxide as a disinfectant or oxidant ~~modifying must modify~~ its practices to comply with meet the MRDL for chlorine dioxide in Section 611.313.
  - 3) ~~The Board has established~~ MCLs for TTHM and HAA5 and treatment technique requirements for DBP precursors ~~to~~ limit the levels of known and unknown DBPs that may have adverse health effects. These DBPs may include chloroform, bromodichloromethane, dibromochloromethane, bromoform, dichloroacetic acid, and trichloroacetic acid.
- b) This subsection (b) corresponds with 40 CFR 141.130(b), which recites past implementation deadlines. This statement maintains structural consistency with the corresponding federal rules.
  - c) Qualified personnel complying with 35 Ill. Adm. Code 681 must operate the water system for each ~~Each~~ CWS or NTNCWS supplier subject to regulated ~~under~~ subsection (a) ~~must be operated by qualified personnel who meet the requirements specified in 35 Ill. Adm. Code 680.~~
  - d) Controlling Control of Disinfectant Residuals. Notwithstanding the MRDLs in Section 611.313, a supplier may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in its ~~the~~ distribution system ~~of chlorine or chloramines (but not chlorine dioxide)~~ to a level and for a time necessary to protect public health, to address specific microbiological contamination problems ~~that caused by~~ circumstances like such as, but not limited to, distribution line breaks, storm run-off events, source water contamination events, or cross-connection events caused.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.130.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.381 Analytical Requirements**

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- a) A supplier must use only the analytical methods ~~specified in~~ this Section specifies, each ~~of which is~~ incorporated by reference in Section 611.102, or alternative methods ~~that approved by~~ the Agency approved under Section 611.480 to demonstrate ~~that it complies compliance with the requirements of~~ this Subpart I and ~~with the requirements of~~ Subparts W and Y.
- b) Disinfection Byproducts (DBPs)
- 1) Methods for Disinfection Byproducts ~~A supplier must measure disinfection byproducts (DBPs) by the appropriate of the following methods:~~
- A) TTHM
- i) By Purge and Trap, Gas Chromatography, Electrolytic Conductivity Detector, and Photoionization Detector. USEPA 502.2 (95). If TTHMs are the only analytes the laboratory measures being measured in the sample, it needs not use then a photoionization detector ~~is not required~~.
- ii) By Purge and Trap, Gas Chromatography-Mass Spectrometer. USEPA 524.2 (95) or USEPA 524.3 (09), or USEPA 524.4 (13).
- iii) By Liquid-Liquid Extraction, Gas Chromatography, Electron Capture Detector. USEPA 551.1 (95).
- B) HAA5
- i) Liquid-Liquid Extraction (Diazomethane), Gas Chromatography, Electron Capture Detector. SM 6251 B (94) or SM 6251 B (07).
- ii) Solid Phase Extractor (Acidic Methanol), Gas Chromatography, Electron Capture Detector. USEPA 552.1 (92).

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- iii) Liquid-Liquid Extraction (Acidic Methanol), Gas Chromatography, Electron Capture Detector. USEPA 552.2 (95) or 552.3 (03).
  - iv) Ion Chromatography, Electrospray Ionization, Tandem Mass Spectrometry. USEPA 557 (09).
  - v) Two-Dimensional Ion Chromatography (IC) with Suppressed Conductivity Detection. Thermo-Fisher 557.1 (17).
- C) Bromate
- i) Ion Chromatography. ASTM D6581-00 or USEPA 300.1 (97).
  - ii) Ion Chromatography and Post-Column Reaction. USEPA 317.0 (01) or USEPA 326.0 (02).
  - iii) Inductively Coupled Plasma-Mass Spectrometer. USEPA 321.8 (97).
  - iv) Two-Dimensional Ion Chromatography. USEPA 302.0 (09).
  - v) Ion Chromatography, Electrospray Ionization, Tandem Mass Spectrometry. USEPA 557 (09).
  - vi) Chemically Suppressed Chromatography. ASTM D6581-08 A.
  - vii) Electrolytically Suppressed Chromatography. ASTM D6581-08 B.

BOARD NOTE: The supplier must use ion chromatography and post column reaction or inductively coupled plasma-mass spectrometry to monitor bromate to demonstrate for purposes of demonstrating eligibility for reduced monitoring under , as prescribed in Section 611.382(b)(3)(B). For inductively coupled plasma-mass



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spectrometry, the supplier must preserve samples ~~must be preserved~~ at the time of sampling with 50 mg ethylenediamine (EDA) per liter of sample, and the supplier must analyze the samples ~~must be analyzed~~ within 28 days.

## D) Chlorite

- i) Amperometric Titration for Daily Monitoring Under Section 611.382(b)(2)(A)(i). SM 4500-ClO<sub>2</sub> E (93) or 4500-ClO<sub>2</sub> E (00).
- ii) Amperometric Sensor for Daily Monitoring Under Section 611.382(b)(2)(A)(i). Palintest ChlordioX Plus (13) or Palintest ChlordioX Plus (20).
- iii) Spectrophotometry. USEPA 327.0 (05).
- iv) Ion Chromatography. USEPA 300.0 (09), USEPA 300.1 (97), USEPA 317.0 (01), USEPA 326.0 (02), or ASTM D6581-00.
- v) Chemically Suppressed Chromatography. ASTM D6581-08 A.
- vi) Electrolytically Suppressed Chromatography. ASTM D6581-08 B.

BOARD NOTE: The supplier may use amperometric ~~Amperometric~~ titration or spectrophotometry ~~may be used~~ for routine daily monitoring of chlorite at the entrance to the distribution system ~~under, as prescribed in~~ Section 611.382(b)(2)(A)(i). The supplier must use ion ~~ion~~ chromatography ~~must be used~~ for routine monthly chlorite ~~chlorite~~ monitoring ~~of chlorite~~ and additional chlorite ~~chlorite~~ monitoring ~~of chlorite~~ in the distribution system, as ~~prescribed in~~ Section 611.382(b)(2)(A)(ii) and (b)(2)(B) require.

- 2) Only a certified laboratory in one of the categories in Section 611.490(a) may conduct analyses ~~Analyses under this Section~~ for DBPs under this

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~~Section must be conducted by a certified laboratory in one of the categories listed in Section 611.490(a) except as specified under subsection (b)(3) specifies otherwise.~~ To receive certification to conduct analyses for the DBP contaminants ~~listed~~ in Sections 611.312 and 611.381 and Subparts W and Y, the laboratory must fulfill the specific conditions in ~~fulfill the requirements of~~ subsections (b)(2)(A), (b)(2)(C), and (b)(2)(D).

- A) The laboratory must analyze performance evaluation (PE) samples ~~that are~~ acceptable to ~~USEPA or~~ the Agency at least once during each consecutive 12-month period by each method for which the laboratory seeks ~~desires~~ certification.
- B) This subsection corresponds with 40 CFR 141.131(b)(2)(ii), which has expired by its own terms. This statement maintains structural consistency with the corresponding federal rule.
- C) The laboratory must achieve quantitative results on the PE sample analyses ~~that are~~ within the acceptance limits set forth in subsections (b)(2)(C)(i) through (b)(2)(B)(xi), subject to ~~the conditions of~~ subsections (b)(2)(C)(xii) and (b)(2)(C)(xiii):
- i) Chloroform (a THM):  $\pm 20\%$  of true value;
  - ii) Bromodichloromethane (a THM):  $\pm 20\%$  of true value;
  - iii) Dibromochloromethane (a THM):  $\pm 20\%$  of true value;
  - iv) Bromoform (a THM):  $\pm 20\%$  of true value;
  - v) Monochloroacetic Acid (an HAA5):  $\pm 40\%$  of true value;
  - vi) Dichloroacetic Acid (an HAA5):  $\pm 40\%$  of true value;
  - vii) Trichloroacetic Acid (an HAA5):  $\pm 40\%$  of true value;
  - viii) Monobromoacetic Acid (an HAA5):  $\pm 40\%$  of true value;
  - ix) Dibromoacetic Acid (an HAA5):  $\pm 40\%$  of true value;

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- x) Chlorite:  $\pm 30\%$  of true value; and
  - xi) Bromate:  $\pm 30\%$  of true value.
  - xii) The laboratory must meet all four of the individual THM acceptance limits ~~set forth~~ in subsections (b)(2)(B)(i) through (b)(2)(B)(iv) ~~in order~~ to successfully pass a PE sample for TTHM.
  - xiii) The laboratory must meet the acceptance limits for four out of the five HAA5 compounds ~~set forth~~ in subsections (b)(2)(B)(v) through (b)(2)(B)(ix) ~~in order~~ to successfully pass a PE sample for HAA5.
- D) The laboratory must report quantitative data for concentrations at least as low as the minimum reporting levels (MRLs) ~~listed~~ in subsections (b)(2)(D)(i) through (b)(2)(D)(xi), subject to ~~the limitations of~~ subsections (b)(2)(D)(xii) and (b)(2)(D)(xiii), for all DBP samples ~~it analyzes to comply analyzed for compliance~~ with Sections 611.312 and 611.385 and Subparts W and Y:
- i) Chloroform (a THM): 0.0010 mg/l;
  - ii) Bromodichloromethane (a THM): 0.0010 mg/l;
  - iii) Dibromochloromethane (a THM): 0.0010 mg/l;
  - iv) Bromoform (a THM): 0.0010 mg/l;
  - v) Monochloroacetic Acid (an HAA5): 0.0020 mg/l;
  - vi) Dichloroacetic Acid (an HAA5): 0.0010 mg/l;
  - vii) Trichloroacetic Acid (an HAA5): 0.0010 mg/l;
  - viii) Monobromoacetic Acid (an HAA5): 0.0010 mg/l;
  - ix) Dibromoacetic Acid (an HAA5): 0.0010 mg/l;

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- x) Chlorite: 0.020 mg/ℓ, applicable to monitoring as required by Section 611.382(b)(2)(A)(ii) and (b)(2)(B); and
  - xi) Bromate: 0.0050, or 0.0010 mg/ℓ if the laboratory uses USEPA 317.0 (01), USEPA 321.8 (97), or USEPA 326.0 (02).
  - xii) The calibration curve must encompass the regulatory MRL concentration. The laboratory may report data ~~Data may be reported~~ for concentrations lower than the regulatory MRL if the laboratory meets as long as the precision and accuracy criteria ~~are met~~ by analyzing an MRL check standard at the lowest reporting limit ~~chosen by~~ the laboratory chooses. The laboratory must verify the accuracy of the calibration curve at the MRL concentration by analyzing an MRL check standard with a concentration less than or equal to 110% of the MRL with each batch of samples. The measured concentration for the MRL check standard must be ±50% of the expected value; if any field sample in the batch has a concentration less than five times the regulatory MRL. The laboratory must ~~Method requirements to~~ analyze higher concentration check standards and meet tighter acceptance criteria ~~for them must be met~~ in addition to the MRL check standard requirement.
  - xiii) When adding the individual trihalomethane or haloacetic acid concentrations; for the compounds listed in subsections (b)(2)(D)(v) through (b)(2)(D)(ix); to calculate the TTHM or HAA5 concentrations, respectively, a zero is used for any analytical result that is less than the MRL concentration for that DBP, unless the Agency specifies otherwise ~~specified by the Agency~~.
- 3) A party ~~approved by USEPA or the Agency~~ must measure daily chlorite samples at the entrance to the distribution system as the Agency requires.
- c) Disinfectant Residuals

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- 1) A supplier must measure residual disinfectant concentrations for free chlorine, combined chlorine (chloramines), and chlorine dioxide using by the appropriate of the methods listed in subsections (c)(1)(A) through (c)(1)(D), subject to the provisions of subsection (c)(1)(E):
  - A) Free Chlorine
    - i) Amperometric Titration. ASTM D1253-86, ASTM D1253-96, ASTM D1253-03, ASTM D1253-08, ASTM D1253-14, SM 4500-Cl D (93), or SM 4500- Cl D (00).
    - ii) DPD Ferrous Titration. SM 4500-Cl F (93) or SM 4500-Cl F (00).
    - iii) DPD Colorimetric. Hach 10260 (13), SM 4500-Cl G (93), or SM 4500-Cl G (00).
    - iv) Syringaldazine (FACTS). SM 4500-Cl H (93) or SM 4500-Cl H (00).
    - v) Test Strips. ITS D99-003 (03) if approved by the Agency under subsection (c)(2).
    - vi) Amperometric Sensor. Palintest ChloroSense (09) or Palintest ChloroSense (20).
    - vii) On-Line Chlorine Analyzer. USEPA 334.0 (09).
    - viii) Indenophenol Colorimetric. Hach 10241 (15).
  - B) Combined Chlorine
    - i) Amperometric Titration. ASTM D1253-86, ASTM D1253-96, ASTM D1253-03, ASTM D1253-08, or ASTM D1253-14, SM 4500-Cl D (93), or SM 4500-CL D (00).
    - ii) DPD Ferrous Titration. SM 4500-Cl F (93) or SM 4500-Cl F (00).

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- iii) DPD Colorimetric. Hach 10260 (13), SM 4500-Cl G (93), or SM 4500-Cl G (00).
- C) Total Chlorine
- i) Amperometric Titration. ASTM D1253-86, ASTM D1253-96, ASTM D1253-03, ASTM D1253-08, or ASTM D1253-14, SM 4500-Cl D (93), or SM 4500-Cl D (00).
  - ii) Low-Level Amperometric Titration. SM 4500-Cl E (93) or SM 4500-Cl E (00).
  - iii) DPD Ferrous Titration. SM 4500-Cl F (93) or SM 4500-Cl F (00).
  - iv) DPD Colorimetric. Hach 10260 (13), SM 4500-Cl G (93), or SM 4500-Cl G (00).
  - v) Iodometric Electrode. SM 4500-Cl I (93) or SM 4500-Cl I (00).
  - vi) Amperometric Sensor. Palintest ChloroSense (09) or [Palintest ChloroSense \(20\)](#).
  - vii) On-Line Chlorine Analyzer. USEPA 334.0 (09).
- D) Chlorine Dioxide
- i) DPD. SM 4500-ClO<sub>2</sub> D (93) or SM 4500-ClO<sub>2</sub> D (00).
  - ii) Amperometric Method II. SM 4500-ClO<sub>2</sub> E (93) or SM 4500-ClO<sub>2</sub> E (00).
  - iii) Amperometric Sensor. [Palintest](#) ChlordioX Plus (13) or [Palintest ChlordioX Plus \(20\)](#).
  - iv) Lissamine Green Spectrophotometric. USEPA 327.0 (05).

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- E) ~~USEPA approved these~~ The methods ~~listed are approved~~ for measuring the specified disinfectant residual. The supplier may measure free chlorine or total chlorine for ~~demonstrating compliance with~~ the chlorine MRDL and combined chlorine. ~~The supplier may measure, or total chlorine may be measured for demonstrating compliance with~~ the chloramine MRDL.
- 2) Alternative Methods Available Only upon Specific ~~Agency~~ Approval ~~by the Agency~~
- A) Test Strips. ITS Method D99-003 (03).
- BOARD NOTE: USEPA added ITS Method D99-003 (03) as an approved alternative method, contingent upon specific State approval. The ~~Board has opted to provide that the Agency may issue a SEP approving this method can grant such approvals on a case-by-case basis using the SEP mechanism.~~
- B) If ~~approved by the Agency approves in, by~~ a SEP, a supplier may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide ~~by using~~ DPD colorimetric test kits.
- 3) ~~An Agency-approved A-party approved by USEPA or the Agency~~ must measure residual disinfectant concentration.
- d) A supplier ~~that must required to~~ analyze parameters not included in subsections (b) and (c) must use the methods ~~listed~~ in this subsection (d). ~~An Agency-approved A-party approved by USEPA or the Agency~~ must measure certain the following parameters:
- 1) Alkalinity. All methods ~~allowed~~ in Section 611.611(a)(21) for ~~measuring~~ alkalinity.
  - 2) Bromide. Ion Chromatography. ASTM D6581-00, USEPA 300.0 (93), USEPA 300.1 (97), USEPA 317.0 (01), or USEPA 326.0 (02).
  - 3) Total Organic Carbon (TOC), by any of the methods ~~listed~~ in subsection (d)(3)(A), subject to ~~the limitations of~~ subsection (d)(3)(B).

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- A) Analytical Methods
- i) High-Temperature Combustion. SM 5310 B (92), SM 5310 B (96), SM 5310 B (00), SM 5310 B (14), USEPA 415.3 (05), or USEPA 415.3 (09).
  - ii) Persulfate-Ultraviolet or Heated-Persulfate Oxidation. Hach 10267 (15), SM 5310 C (92), SM 5310 C (96), SM 5310 C (00), SM 5310 C (14), USEPA 415.3 (05), or USEPA 415.3 (09).
  - iii) Wet Oxidation Method. SM 5310 D (92), SM 5310 D (96), SM 5310 D (00), SM 5310 D (14), USEPA 415.3 (05), or USEPA 415.3 (09).
  - iv) Ozone Oxidation. Hach 10261 (15).
- B) The supplier must remove inorganic ~~Inorganic~~ carbon ~~must be removed~~ from the samples prior to analysis. The supplier and supplier must not filter TOC samples ~~may not be filtered~~ prior to analysis. The supplier must acidify TOC samples ~~must be acidified~~ at the time of sample collection to achieve pH less than or equal to 2 with minimal addition of the acid ~~specified in the~~ method specifies or ~~by the~~ instrument manufacturer recommends. The supplier must analyze acidified ~~Acidified~~ TOC samples ~~must be analyzed~~ within 28 days.
- 4) Specific Ultraviolet Absorbance (SUVA). SUVA is equal to the UV absorption at 254 nm ( $UV_{254}$ ) (measured in  $m^{-1}$ ) divided by the dissolved organic carbon (DOC) concentration (measured as mg/l). ~~To In order to~~ determine SUVA, the supplier must ~~it is necessary to~~ separately measure  $UV_{254}$  and DOC. When determining SUVA, a supplier must use the methods ~~stipulated~~ in subsection (d)(4)(A) ~~for to measure~~ DOC and the method ~~stipulated~~ in subsection (d)(4)(B) ~~for to measure~~  $UV_{254}$ . The supplier must determine SUVA ~~must be determined~~ on water prior to the supplier adding disinfectants or oxidants ~~the addition of disinfectants/oxidants by the supplier~~. The supplier must take DOC and



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UV<sub>254</sub> samples ~~for used to determine~~ a SUVA value ~~must be taken~~ at the same time and at the same location.

- A) Dissolved Organic Carbon (DOC). Prior to analysis, ~~the supplier must filter~~ DOC samples ~~must be filtered~~ through the 0.45 µm pore-diameter filter as soon as practical after sampling, not to exceed 48 hours. After filtration, ~~the supplier must acidify~~ DOC samples ~~must be acidified~~ to achieve pH less than or equal to 2 with minimal addition of the acid ~~specified in~~ the method or ~~by the instrument manufacturer specifies~~. ~~The supplier must analyze acidified~~ ~~Acidified~~ DOC samples ~~must be analyzed~~ within 28 days after sample collection. ~~The supplier must remove inorganic~~ ~~Inorganic~~ carbon ~~must be removed~~ from the samples prior to analysis. ~~The supplier must use water~~ ~~Water~~ passed through the filter ~~prior to filtration of the sample must serve~~ as the filtered blank. ~~The supplier must analyze this~~ ~~This~~ filtered blank ~~must be analyzed~~ using procedures identical to those ~~it~~ used for analysis of the samples, and ~~the blank must meet the following standards:~~ ~~DOC~~ less than 0.5 mg/ℓ ~~DOC~~.
- i) High-Temperature Combustion Method. SM 5310 B (92), SM 5310 B (96), SM 5310 B (00), SM 5310 B (14), USEPA 415.3 (05), or USEPA 415.3 (09).
- ii) Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method. SM 5310 C (92), SM 5310 C (96), SM 5310 C (00), SM 5310 C (14), USEPA 415.3 (05), or USEPA 415.3 (09).
- iii) Wet-Oxidation Method. SM 5310 D (92), (96), SM 5310 D (00), USEPA 415.3 (05), or USEPA 415.3 (09).
- B) Ultraviolet Absorption at 254 nm (UV<sub>254</sub>) by Spectrometry. SM 5910 B (94), SM 5910 B (00), 5910 B (11), 5910 B (13), USEPA 415.3 (05), or USEPA 415.3 (09). ~~The supplier must measure~~ UV absorption ~~must be measured~~ at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, ~~the supplier must filter~~ UV<sub>254</sub> samples ~~must be filtered~~ through a 0.45 µm pore-diameter filter. ~~The supplier must not adjust~~ pH of UV<sub>254</sub> samples ~~may not be adjusted~~.

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~~The supplier Samples~~ must analyze samples ~~be analyzed~~ as soon as practical after sampling, not to exceed 48 hours.

- 5) pH. All methods ~~allowed~~ in Section 611.611(a)(17) for ~~measuring~~ pH.
- 6) Magnesium. All methods ~~allowed~~ in Section 611.611(a) for ~~measuring~~ magnesium.

BOARD NOTE: ~~This Section derives Derived~~ from 40 CFR 141.131 and appendix A to 40 CFR 141. The Board ~~did has~~ not separately ~~list listed the following~~ approved alternative methods from Standard Methods Online that are the same version as a method ~~appearing that appears~~ in a printed edition of Standard Methods. ~~Using Use of~~ the Standard Methods Online copy is acceptable.

Standard Methods Online, Methods 4500-C1 D-93, 4500-C1 E-93, 4500-C1 F-93, 4500-C1 G-93, 4500-C1 H-93, and 4500-C1 I-93 appear in the 19<sup>th</sup> and 20<sup>th</sup> editions as Methods 4500-C1 D, 4500-C1 E, 4500-C1 F, 4500-C1 G, 4500-C1 H, and 4500-C1 I. ~~These In this Section, these~~ appear in this Section as SM 4500-C1 D (93), SM 4500-C1 E (93), SM 4500-C1 F (93), SM 4500-C1 G (93), SM 4500-C1 H (93), and SM 4500-C1 I (93).

Standard Methods Online, Methods 4500-C1 D-00, 4500-C1 E-00, 4500-C1 F-00, 4500-C1 G-00, 4500-C1 H-00, and 4500-C1 I-00 appear in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 4500-C1 D, 4500-C1 E, 4500-C1 F, 4500-C1 G, 4500-C1 H, and 4500-C1 I. ~~These In this Section, these~~ appear in this Section as SM 4500-C1 D (00), 4500-C1 E (00), 4500-C1 F (00), 4500-C1 G (00), 4500-C1 H (00), and 4500-C1 I (00).

Standard Methods Online, Methods 4500-C1O2 D-93 and 4500-C1O2 E-93 appear in the 19<sup>th</sup> and 20<sup>th</sup> editions as Methods 4500-C1O2 D and 4500-C1O2 E. ~~These In this Section, these~~ appear in this Section as SM 4500-C1O2 D (93) and SM 4500-C1O2 E (93).

Standard Methods Online, Methods 4500-C1O2 D-00 and 4500-C1O2 E-00 appear in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 4500-C1O2 D and 4500-C1O2 E. ~~These In this Section, these~~ appear in this Section as SM 4500-C1O2 D (00) and SM 4500-C1O2 E (00).

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Standard Methods Online, Methods 5310 B-00, 5310 C-00, and 5310 D-00 appear in the 21<sup>st</sup> and 22<sup>nd</sup> editions as Methods 5310 B, 5310 C, and 5310 D. ~~These In this Section, these~~ appear in this Section as SM 5310 B (00), SM 5310 C (00), and SM 5310 D (00).

Standard Methods Online, Method 5910 B-00 appears in the 21<sup>st</sup> edition as Method 5910 B. ~~This In this Section, this~~ appears in this Section as SM 5910 B (00).

Standard Methods Online, Method 5910 B-11 appears in the 22<sup>nd</sup> edition as Method 5910 B. ~~This In this Section, this~~ appears in this Section as SM 5910 B (11).

Standard Methods Online, Method 6251 B-94 appears in the 19<sup>th</sup>, 20<sup>th</sup>, and 21<sup>st</sup> editions as Method 6251 B. ~~This In this Section, this~~ appears in this Section as SM 6251 B (94).

Standard Methods Online, Method 6251 B-07 appears in the 22<sup>nd</sup> and 23<sup>rd</sup> editions as Method 5910 B. ~~This In this Section, this~~ appears in this Section as SM 6251 B (07).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART L: MICROBIOLOGICAL MONITORING  
AND ANALYTICAL REQUIREMENTS**Section 611.531 Analytical Requirements**

A supplier must use the ~~The~~ analytical methods ~~specified~~ in this Section; or Agency-approved alternative methods ~~approved by the Agency~~ under Section 611.480, ~~must be used~~ to demonstrate compliance with ~~the requirements of~~ only 611.Subpart B. A supplier must measure ~~Measurements for~~ pH, temperature, turbidity, and RDCs ~~must be conducted~~ under the supervision of a certified operator. A supplier must conduct measurements ~~Measurements for~~ total coliforms, fecal coliforms and HPC ~~using must be conducted by~~ a certified laboratory in one of the categories ~~listed~~ in Section 611.490(a). The supplier must perform analyses using ~~following procedures must be performed by~~ the following methods in this Section, each incorporated by reference in Section 611.102:

- a) Basic Water Parameters and Microbiological Quality ~~A supplier must conduct~~

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analyses as follows:

- 1) The supplier must analyze ~~conduct analyses~~ for pH and temperature using ~~in accordance with~~ one of the methods in listed at Section 611.611; and
- 2) The supplier must analyze ~~conduct analyses~~ for total coliforms, fecal coliforms, heterotrophic bacteria, and turbidity using specific ~~in accordance with one of the following~~ methods, and by using ~~analytical test procedures contained in USEPA Technical Notes, incorporated by reference in Section 611.102,~~ as follows:

A) Total Coliforms

BOARD NOTE: The time from sample collection to beginning ~~initiation of~~ analysis for source (raw) water samples required by Section 611.532 and Subpart B only must not exceed eight hours. The supplier should but needs is encouraged but ~~not required to~~ hold samples below 10° C during transit.

- i) Total Coliform Fermentation Technique. SM 9221 A (93), SM 9221 A (94), SM 9221 A (99), SM 9221 A (06), SM 9221 A (14), SM 9221 B (93), SM 9221 B (94), SM 9221 B (99), SM 9221 B (06), SM 9221 B (14), SM 9221 C (93), SM 9221 C (94), SM 9221 C (99), SM 9221 C (06), or SM 9221 C (14).

BOARD NOTE: The supplier may use commercially available lactose ~~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 it normally tests, ~~tested~~ and this comparison demonstrates that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than ten percent using lactose broth. If the supplier uses inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the supplier adds the sample is ~~added~~. The supplier needs not ~~No requirement exists to~~ run

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the completed phase on ten percent of all total coliform-positive confirmed tubes.

- ii) Total Coliform Membrane Filter Technique. SM 9222 A (91), SM 9222 A (94), SM 9222 A (97), SM 9222 A (06), SM 9222 A (15), SM 9222 B (91), SM 9222 B (94), SM 9222 B (97), SM 9222 B (06), SM 9222 B (15), SM 9222 C (91), SM 9222 C (94), SM 9222 C (97), SM 9222 C (06), or SM 9222 C (15).
- iii) ONPG-MUG (also known as Colilert®). SM 9223 (92), SM 9223 (94), SM 9223 (97), SM 9223 B (04), or SM 9223 B (16).

## B) Fecal Coliforms

BOARD NOTE: The time from collecting the sample ~~collection to beginning initiation of analysis of for~~ source (raw) water samples required by Section 611.532 and Subpart B only must not exceed eight hours. The supplier should but needs is encouraged but not required to hold samples below 10° C during transit.

- i) Fecal Coliform Procedure. SM 9221 E (93), SM 9221 E (94), SM 9221 E (99), SM 9221 E (06), or SM 9221 E (14).

BOARD NOTE: A-1 broth may be held up to seven days in a tightly closed screwcap tube at 4° C (39° F).

BOARD NOTE: The supplier may hold A-1 broth up to seven days in a tightly closed screwcap tube at 4 °C (39 °F).

- ii) Fecal Coliform Membrane Filter Procedure. SM 9222 D (91), SM 9222 D (94), SM 9222 D (97), SM 9222 D (06), or SM 9222 D (15).

## C) Heterotrophic Bacteria

- i) Pour Plate Method. SM 9215 B (88), SM 9215 B (94), SM

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9215 B (00), SM 9215 B (04), or SM 9215 B (16).

BOARD NOTE: The time from ~~collecting the sample collection~~ to ~~beginning initiation of~~ analysis must not exceed eight hours. The supplier ~~should but needs is encouraged but~~ not ~~required to~~ hold samples below 10 °C during transit.

ii) SimPlate (00).

D) Turbidity

BOARD NOTE: Styrene divinyl benzene beads (e.g., AMCO-AEPA-1 or equivalent) and stabilized formazin (e.g., Hach StablCal™ or equivalent) are acceptable substitutes for formazin.

i) Nephelometric Method. SM 2130 B (88), SM 2130 B (94), SM 2130 B (01); USEPA 180.1 (93); or Hach 8195 (18).

ii) GLI Method 2 (92).

iii) Laser Nephelometry. Hach 10133 (00) (FilterTrak).

iv) Laser Nephelometry (On-Line). Lovibond PTV 6000 (16), Mitchell M5271 (09), or Mitchell M5331 (16).

v) LED Nephelometry (On-Line). AMI Turbiwell (09), Lovibond PTV 1000 (16), Lovibond PTV 2000 (16), Mitchell M5331 (09), or Mitchell M5331 (16).

vi) LED Nephelometry (Portable). Orion AQ4500 (09).

vii) 360° Nephelometry. Hach 10258 (16) or Hach 10258 (18).

b) A supplier must measure residual disinfectant concentrations with ~~specific one of the following~~ analytical methods:

1) Free Chlorine

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- A) Amperometric Titration. ASTM D1253-03, ASTM D1253-08, ASTM D1253-14, SM 4500-C1 D (89), SM 4500-C1 D (93), or SM 4500-C1 D (00).
  - B) DPD Ferrous Titrimetric. SM 4500-C1 F (89), SM 4500-C1 F (93), or SM 4500-C1 F (00).
  - C) DPD Colimetric. Hach 10260 (13), SM 4500-C1 G (89), SM 4500-C1 G (93), or SM 4500-C1 G (00).
  - D) Syringaldazine (FACTS). SM 4500-C1 H (89), SM 4500-C1 H (93), or SM 4500-C1 H (00).
  - E) On-Line Chlorine Analyzer. USEPA 334.0 (09).
  - F) Amperometric Sensor. Palintest ChloroSense (09) [and Palintest ChloroSense \(20\)](#).
  - G) Indophenol Colorimetric. Hach 10241 (15).
- 2) Total Chlorine
- A) Amperometric Titration. ASTM D1253-03, ASTM D1253-08, ASTM D1253-14, SM 4500-C1 D (89), SM 4500-C1 D (93), or SM 4500-C1 D (00).
  - B) Amperometric Titration (low level measurement). SM 4500-C1 E (89), [SM](#) 4500-C1 E (93), or [SM](#) 4500-C1 E (00).
  - C) DPD Ferrous Titrimetric. SM 4500-C1 F (89), [SM](#) 4500-C1 F (93), or [SM](#) 4500-C1 F (00).
  - D) DPD Colimetric. SM 4500-C1 G (89), [SM](#) 4500-C1 G (93), [SM](#) ~~or~~ 4500-C1 G (00), or Hach 10260 (13).
  - E) Iodometric Electrode. SM 4500-C1 I (89), [SM](#) 4500-C1 I (93), or [SM](#) 4500-C1 I (00).
  - F) On-Line Chlorine Analyzer. USEPA 334.0 (09).

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- G) Amperometric Sensor. Palintest ChloroSense (09) and Palintest ChloroSense (20).
- H) Indophenol Colorimetric. USEPA 127 (21).
- 3) Chlorine Dioxide
- A) Amperometric Titration. Palintest ChlordioX Plus (13), Palintest ChlordioX Plus (20), SM 4500-ClO<sub>2</sub> C (88), SM 4500-ClO<sub>2</sub> C (93), SM 4500-ClO<sub>2</sub> C (00), SM 4500-ClO<sub>2</sub> E (88), SM 4500-ClO<sub>2</sub> E (93), or SM 4500-ClO<sub>2</sub> E (00).
- B) DPD Method. SM 4500-ClO<sub>2</sub> D (88) or SM 4500-ClO<sub>2</sub> D (93).
- C) Spectrophotometric. USEPA 327.0 (05).
- 4) Ozone. Indigo Method. SM 4500-O<sub>3</sub> B (88), SM 4500-O<sub>3</sub> B (93), or SM 4500-O<sub>3</sub> B (00).
- 5) Alternative Test Methods. The Agency may issue grant a SEP allowing that allows a supplier to use alternative chlorine test methods as follows:
- A) DPD Colorimetric Test Kits. A supplier may measure residual Residual disinfectant concentrations for free chlorine and combined chlorine may also be measured by using ITS Method D99-003.
- B) Continuous Monitoring for Free and Total Chlorine. A supplier may measure free Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument, provided the chemistry, accuracy, and precision remain the same. A supplier must calibrate instruments it uses Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five days or as the Agency provides otherwise in a SEP provided by the Agency.

BOARD NOTE: This Section derives Derived from 40 CFR 141.74(a) and appendix A to subpart C of 40 CFR 141. The Board did has not separately list listed the following approved



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alternative methods from Standard Methods Online that are the same version as a method ~~appearing that appears~~ in a printed edition of Standard Methods. ~~Using Use of~~ the Standard Methods Online copy is acceptable.

Standard Methods Online, Method 2130 B-01 appears in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 2130 B. ~~This In this Section, this~~ appears ~~in this Section~~ as SM 2130 B (01).

Standard Methods Online, Methods 4500-CI D-93, 4500-CI E-93, 4500-CI F-93, 4500-CI G-93, 4500-CI H-93, and 4500-CI I-93 appear in the 19<sup>th</sup> and 20<sup>th</sup> editions as Methods 4500-CI D, 4500-CI E, 4500-CI F, 4500-CI G, 4500-CI H, and 4500-CI I. ~~These In this Section, these~~ appear ~~in this Section~~ as SM 4500-CI D (93), SM 4500-CI E (93), SM 4500-CI F (93), SM 4500-CI G (93), SM 4500-CI H (93), and SM 4500-CI I (93).

Standard Methods Online, Methods 4500-CI D-00, 4500-CI E-00, 4500-CI F-00, 4500-CI G-00, 4500-CI H-00, and 4500-CI I-00 appear in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 4500-CI D, 4500-CI E, 4500-CI F, 4500-CI G, 4500-CI H, and 4500-CI I. ~~These In this Section, these~~ appear ~~in this Section~~ as SM 4500-CI D (00), SM 4500-CI E (00), SM 4500-CI F (00), SM 4500-CI G (00), SM 4500-CI H (00), and SM 4500-CI I (00).

Standard Methods Online, Methods 4500-CIO<sub>2</sub> C-93, 4500-CIO<sub>2</sub> D-93, and 4500-CIO<sub>2</sub> E-93 appear in the 19<sup>th</sup> and 20<sup>th</sup> editions as Methods 4500-CIO<sub>2</sub> C, 4500-CIO<sub>2</sub> D, and 4500-CIO<sub>2</sub> E. ~~These In this Section, these~~ appear ~~in this Section~~ as SM 4500-CIO<sub>2</sub> C (93), SM 4500-CIO<sub>2</sub> D (93), and SM 4500-CIO<sub>2</sub> E (93).

Standard Methods Online, Methods 4500-CIO<sub>2</sub> C-00 and 4500-CIO<sub>2</sub> E-00 appear in the 19<sup>th</sup> and 20<sup>th</sup> editions as Methods 4500-CIO<sub>2</sub> C and 4500-CIO<sub>2</sub> E. ~~These In this Section, these~~ appear ~~in this Section~~ as SM 4500-CIO<sub>2</sub> C (00) and SM 4500-CIO<sub>2</sub> E (00).

Standard Methods Online, Method 4500-O<sub>3</sub> B-97 appears in the 20<sup>th</sup> edition as Method 4500-O<sub>3</sub> B. ~~This In this Section, this~~ appears ~~in this Section~~ as SM 4500-O<sub>3</sub> B (97).

Standard Methods Online, Method 9215 B-00 appears in the 21<sup>st</sup> edition as Method 9215 B. ~~This appears In this Section, these~~ appear ~~in this Section~~ as SM 9215 B (00).

Standard Methods Online, Method 9215 B-04 appears in the 22<sup>nd</sup> edition as Method 9215 B. ~~This In this Section, this~~ appears ~~in this Section~~ as SM 9215 B (04).

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Standard Methods Online, Methods 9221 A-99, 9221 B-99, and 9221 C-99 appear in the 21<sup>st</sup> edition as Methods 9221 A, 9221 B, and 9221 C. ~~These In this Section, these~~ appear in this Section as SM 9221 A (99), SM 9221 B (99), and SM 9221 C (99).

Standard Methods Online, Methods 9221 A-06, 9221 B-06, 9221 C-06, and 9221 E-06 appear in the 22<sup>nd</sup> edition as Methods 9221 A, 9221 B, 9221 C, and 9221 E. ~~These In this Section, these~~ appear in this Section as SM 9221 A (06), SM 9221 B (06), SM 9221 C (06), and SM 9221 E (06).

Standard Methods Online, Methods 9222 A-97, 9222 B-97, and 9222 C-97 appear in the 20<sup>th</sup> and 21<sup>st</sup> editions as Methods 9222 A, 9222 B, and 9222 C. ~~These In this Section, these~~ appear in this Section as SM 9222 A (97), SM 9222 B (97), and SM 9222 C (97).

Standard Methods Online, Method 9223 B-97 appears in the 20<sup>th</sup> and 21<sup>st</sup> editions as Method 9223 B. ~~This In this Section, this~~ appears in this Section as SM 9223 B (97).

Standard Methods Online, Method 9223 B-04 appears in the 22<sup>nd</sup> edition as Method 9223 B. ~~This In this Section, this~~ appears in this Section as SM 9223 B (04).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.532 Unfiltered PWSs**

~~A supplier that uses a surface water source and does not provide filtration treatment must monitor, unless the Agency has determined, under Section 611.211, that filtration is required. If the Agency determines that filtration is required, it must specify alternative monitoring requirements, as appropriate, until filtration is in place. A supplier using that uses a groundwater source under the direct influence of surface water not providing and which does not provide filtration treatment must monitor as within six months after the Agency directs in a SEP after determining has determined, under Section 611.212, that the supplier's groundwater source is under the direct influence of surface water, requiring the supplier to install and apply filtration treatment, and specifying appropriate unless the Agency has determined that filtration is required, in which case the Agency must specify alternative monitoring requirements, as appropriate, until filtration is in place.~~

- a) ~~The supplier must sample and analyze for fecal Fecal~~ coliform or total coliform density measurements as required by Section 611.231(a) ~~requires must be performed~~ on representative source water samples it collects immediately prior to the first or only point of applying disinfectant ~~application~~. The supplier must

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sample for fecal or total coliforms no less frequently than at the minimum frequency specified in Table B specifies each week the supplier serves water to the public. The supplier must also sample and analyze once for ~~Also, one~~ fecal or total coliform density ~~measurement must be made~~ every day the supplier serves water to the public and the turbidity of its ~~the~~ source water exceeds 1 NTU (these samples count towards the weekly coliform sampling requirement), unless the Agency issues a SEP determining ~~determines~~ that the supplier, ~~for logistical reasons outside the supplier's control~~ cannot analyze ~~have the sample analyzed~~ within 30 hours after collecting the sample for logistical reasons outside the supplier's control ~~collection~~.

- b) The supplier must measure turbidity ~~Turbidity measurements as required by Section 611.231(b) requires must be performed~~ on representative grab samples of source water it collects immediately prior to the first or only point of applying disinfectant no less frequently than application every four hours when (or more frequently) ~~that~~ the supplier serves water to the public. A supplier may substitute continuous turbidity monitoring for grab sample monitoring after validating the accuracy of regular if it validates the continuous measurement for accuracy ~~on a regular basis~~ using a protocol the Agency approved in by a SEP.
- c) The supplier must determine its total inactivation ratio for each day it operates that the supplier is in operation must be determined based on the appropriate CT<sub>99.9</sub> values in Appendix B, ~~as appropriate~~. The supplier must monitor the parameters necessary to determine its the total inactivation ratio using specific procedures must be monitored as follows:
- 1) The supplier must measure temperature of the disinfected water ~~must be measured~~ at least once per day at each RDC sampling point.
  - 2) If using the supplier uses chlorine, the supplier must measure the pH of the disinfected water ~~must be measured~~ at least once per day at each chlorine RDC sampling point.
  - 3) The supplier must determine the disinfectant contact times ("T") ~~must be determined~~ for each day during peak hourly flow.
  - 4) The supplier must measure the RDCs ("C") of the water before or at the first customer ~~must be measured~~ each day during peak hourly flow.

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- 5) ~~A If a supplier using~~ uses a disinfectant other than chlorine, ~~the supplier~~ may monitor by other Agency-approved methods ~~approved~~ under Section 611.241(a)~~611.241(a)(1) and (a)(2)~~.
- d) The supplier must calculate total inactivation ratio using a specific procedure~~must be calculated as follows~~:
- 1) ~~A If the supplier applying disinfectant at~~ uses only one point of ~~disinfectant application, the supplier~~ may determine the total inactivation ratio based on either of ~~the following~~ two methods:
- A) ~~Determining one~~ One inactivation ratio ( $A_i = CT_{\text{calc}}/CT_{99.9}$ ) ~~is determined~~ before or at the first customer during peak hourly flow, so that the supplier achieves 99.9 percent Giardia lamblia inactivation ~~and, if the  $A_i$  is greater than 1.0, the 99.9 percent Giardia lamblia inactivation requirement has been achieved~~; or
- B) The supplier may determine successive ~~Successive~~  $A_i$  values at points between where the supplier applies disinfectant and before or at the first customer, representing sequential inactivation ratios, ~~are determined between the point of disinfectant application and a point before or at the first customer~~ during peak hourly flow. Under this alternative, the supplier must use a specific ~~the following~~ method ~~must be used~~ to calculate the total inactivation ratio:
- i) Determine  $A_i$  ~~the following~~, for each sequence:
- $$A_i = CT_{\text{calc}}/CT_{99.9}$$
- ii) Add the  $A_i$  values ~~together, as follows~~:
- $$B = \sum(A_i)$$
- iii) If B is greater than 1.0, the supplier achieved the required 99.9 percent Giardia lamblia inactivation ~~requirement has been achieved~~.
- 2) ~~A If the supplier applying disinfectant at~~ uses more than one point of

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~~disinfectant application~~ before or at the first customer, ~~the supplier~~ must determine the CT value of each disinfection sequence immediately prior to the next point ~~it applies of~~ disinfectant ~~application~~ during peak hourly flow. The ~~supplier must calculate the~~  $A_i$  value of each sequence and B ~~must be calculated~~ using the method in subsection (d)(1)(B) to determine if the supplier ~~complies is in compliance~~ with Section 611.241.

- 3) ~~A supplier monitoring RDC at one or more points may voluntarily calculate its~~ Although not required, the total percent inactivation (PI) ~~for a supplier with one or more points of RDC monitoring may using the equation be calculated as follows:~~

$$PI = 100 - \frac{100}{10^{3B}}$$

- e) The ~~supplier must continuously monitor the~~ RDC of the water entering ~~its the~~ distribution system ~~must be monitored continuously,~~ and ~~record~~ the lowest value ~~must be recorded~~ each day, except that ~~the supplier may use grab sampling every four hours for no more than five days in lieu of continuous monitoring after a failure of if there is a failure in~~ the continuous monitoring equipment. ~~A supplier,~~ ~~grab sampling every four hours may be conducted in lieu of continuous monitoring, but for no more than five working days following the failure of the equipment, and suppliers~~ serving 3,300 or fewer persons may take grab samples ~~on an ongoing basis at the applicable frequency in Table C in lieu of providing continuous monitoring on an ongoing basis at the frequencies prescribed in Table C.~~ If ~~at any time~~ the RDC falls below 0.2 mg/ℓ in a system using grab sampling in lieu of continuous monitoring, the supplier must take a grab sample every four hours until ~~its the~~ RDC is equal to or greater than 0.2 mg/ℓ.
- f) Measuring Points of Measurement
- 1) The ~~supplier must measure the~~ RDC ~~must be measured at least~~ at the same points in ~~its the~~ distribution system and at the same time ~~it samples as~~ total coliforms ~~are sampled,~~ as ~~specified in~~ Sections 611.1054 through 611.1058 ~~specify.~~ The Agency must allow a supplier ~~using that uses~~ both ~~a groundwater source and~~ a surface water source or ~~a groundwater source~~ under direct influence of surface water, ~~and a groundwater source~~ to take disinfectant residual samples at points other than the total coliform sampling points if the Agency ~~issues determines, by~~ a SEP ~~determining,~~

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that ~~those such~~ points ~~better represent are more representative of~~ treated (disinfected) water quality within the distribution system. ~~The supplier may measure HPC may be measured~~ in lieu of RDC.

- 2) If the Agency determines, under Section 611.213, that a supplier has no means for having a sample analyzed for HPC, ~~measured as specified in subsection (a) specifies~~, the ~~requirements of~~ subsection (f)(1) ~~does do~~ not apply ~~to that supplier~~.

BOARD NOTE: ~~This Section derives Derived~~ from 40 CFR 141.74(b).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.533 Filtered PWSs**

A supplier ~~using that uses~~ a surface water source or a groundwater source under the ~~direct~~ influence of surface water and ~~providing provides~~ filtration treatment must monitor in accordance with this Section.

- a) ~~The supplier must perform turbidity~~ Turbidity measurements ~~as required by~~ Section 611.250 ~~requires must be performed~~ on representative samples of the PWS's filtered water every four hours (or more frequently) ~~when that~~ the supplier serves water to the public. A supplier may substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a protocol ~~the Agency~~ approved ~~in by~~ a SEP. For ~~a supplier any suppliers~~ using slow sand filtration or filtration treatment other than conventional treatment, direct filtration, or diatomaceous earth filtration, the Agency must, ~~by special exception permit condition~~, reduce the sampling frequency to once per day ~~in a SEP~~ if ~~the Agency~~ determines that less frequent monitoring is sufficient to indicate effective filtration performance. For ~~a suppliers suppliers~~ serving 500 or fewer persons, the Agency must, ~~by a SEP~~, reduce the turbidity sampling frequency to once per day ~~in a SEP, regardless of the type of filtration treatment used~~, if the Agency determines that less frequent monitoring is sufficient to indicate effective filtration performance ~~regardless of the type of filtration treatment used~~.
- b) RDC Entering Distribution System
  - 1) Suppliers ~~Serving More Than serving more than~~ 3300 ~~Persons persons~~.

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The supplier must continuously monitor the RDC of the water entering the distribution system ~~must be monitored continuously~~, and the supplier must record the lowest value ~~must be recorded~~ each day, except that the supplier may conduct, if there is a failure in the continuous monitoring equipment, grab sampling every four hours ~~may be conducted~~ in lieu of continuous monitoring if there is a failure in the continuous monitoring equipment, but not for ~~no~~ more than five working days following the ~~failure of the~~ equipment failure.

- 2) Suppliers Servingserving 3,300 or Fewer Persons. The supplierfewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies each day ~~prescribed in~~ Table C prescribes. If at any time the RDC falls below 0.2 mg/l in a system using grab sampling in lieu of continuous monitoring, the supplier must take a grab sample every four hours until RDC is equal to or greater than 0.2 mg/l.

c) Points of Measurement

- 1) The supplier must measure the RDC ~~must be measured~~ at least at the same points in the distribution system and at the same time as sampling total coliforms ~~are sampled~~, as ~~specified in~~ Sections 611.1054 through 611.1058 specify. The Agency must allow a supplier ~~using that uses~~ both a surface water source and a groundwater source, or a groundwater source under direct influence of surface water, and a groundwater source to take RDC samples at points other than the total coliform sampling points if the Agency determines that such points are more representative of treated (disinfected) water quality within the distribution system. The supplier may measure HPC, measured as specified in Section 611.531(a) specifies, may be measured in lieu of RDC.
- 2) Subsection (c)(1) does not apply if the Agency determines, under Section 611.213(c), that a system has no means for having a ~~sample analyzed for HPC by a~~ certified laboratory analyze a sample for PHC under the requisite time and temperature conditions ~~specified by~~ Section 611.531(a) specifies and ~~that~~ the supplier providesis providing adequate disinfection in ~~itsthe~~ distribution system.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.74(c).

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(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

**Section 611.560 Turbidity (Repealed)**

~~The requirements in this Section apply to unfiltered PWSs until filtration is installed.~~

- a) ~~Suppliers must take samples at representative entry points to the distribution system at least once per day, for the purposes of making turbidity measurements to determine compliance with Section 611.320.~~
  - 1) ~~If Public Health determines that a reduced sampling frequency in a non-CWS will not pose a risk to public health, it may reduce the required sampling frequency. The option of reducing the turbidity frequency will be permitted only in those suppliers that practice disinfection and which maintain an active RDC in the distribution system, and in those cases where Public Health has indicated in writing that no unreasonable risk to health existed under the circumstances of this option.~~
  - 2) ~~The turbidity measurements must be made in accordance with one of the methods set forth in Section 611.531(a).~~
- b) ~~If the result of a turbidity analysis indicates that the maximum allowable limit has been exceeded, the sampling and measurement must be confirmed by resampling as soon as practicable and preferably within one hour. If the repeat sample confirms that the maximum allowable limit has been exceeded, the supplier of water must report to the Agency within 48 hours. The repeat sample must be the sample used for the purpose of calculating the monthly average. If the monthly average of the daily samples exceeds the maximum allowable limit, or if the average of two samples taken on consecutive days exceeds 5 NTU, the supplier of water must report to the Agency and notify the public as directed in Subpart V of this Part.~~
- e) ~~This subsection (e) corresponds with 40 CFR 141.22(c), which states a past effective date for CWSs.~~
- d) ~~This Section applies only to suppliers that use water obtained in whole or in part~~



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~~from surface sources.~~

~~BOARD NOTE: Derived from 40 CFR 141.22 (2002).~~

(Source: Repealed at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

**Section 611.591 Violation of a State-Only MCL**

This Section applies to ~~State-only 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 in subsections (a) through (e).~~ If the result of analysis under Section 611.612 this Part indicates that the level of any contaminant exceeds the State-only old MCL, the CWS supplier must take certain actions~~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 specifies, if 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 State-only old MCL; and
- c) After giving public notice, monitor ~~Monitor, after public notification,~~ at a frequency ~~designated by the Agency designates in a SEP.~~ The supplier must, ~~and~~ continue monitoring until the results do not exceed the State-only old MCL ~~has not been exceeded~~ in two consecutive samples or until the effective date of a monitoring schedule the Board issues as a condition of a variance, adjusted standard, or enforcement action ~~becomes effective.~~

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.592 Frequency of State Monitoring**

This Section applies to State-only old MCLs ~~that are~~ marked as "additional State requirements" ~~in at~~ Section 611.300; and for which there are no specific monitoring, reporting, or public notice

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requirements ~~among the NPDWRs are specified below.~~

- a) ~~A CWS supplier using surface water sources must repeat analyses for the State-only MCLs all CWS suppliers utilizing surface water sources must be repeated~~ at yearly intervals.
- b) ~~A CWS supplier using groundwater sources must repeat analyses for the State-only MCLs all CWS suppliers utilizing only groundwater sources must be repeated~~ at three-year intervals.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.600 Applicability**

~~Certain suppliers~~ ~~The following types of suppliers~~ must ~~monitor~~ ~~conduct monitoring~~ to determine compliance with the ~~State-only old~~ MCLs in Section 611.300 and the revised MCLs in 611.301, as appropriate, ~~as in accordance with~~ this Subpart N requires:

- a) CWS suppliers.
- b) NTNCWS suppliers.
- c) Transient non-CWS suppliers to determine compliance with the nitrate and nitrite MCLs.
- d) Detection Limits. ~~Specific~~ ~~The following are~~ detection limits apply for ~~purposes of~~ this Subpart N (this list includes MCLs from Section 611.301 are ~~set forth~~ for information purposes only):

Contaminant	MCL (mg/ℓ, except asbestos)	Method	Detection Limit (mg/ℓ)
Antimony	0.006	Atomic absorption – furnace technique	0.003

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		Atomic absorption – furnace technique (stabilized temperature)	0.0008 <sup>5</sup>
		Inductively coupled plasma-mass spectrometry	0.0004
		Atomic absorption – gaseous hydride technique	0.001
Arsenic	0.010	Atomic absorption – furnace technique	0.001
		Atomic absorption – furnace technique (stabilized temperature)	0.00005 <sup>6</sup>
		Atomic absorption – gaseous hydride technique	0.001
		Inductively coupled plasma-mass spectrometry	0.0014 <sup>7</sup>
Asbestos	7 MFL <sup>1</sup>	Transmission electron microscopy	0.01 MFL
Barium	2	Atomic absorption – furnace technique	0.002
		Atomic absorption – direct aspiration technique	0.1
		Inductively coupled plasma arc furnace	0.002
		Inductively coupled plasma	0.001
Beryllium	0.004	Atomic absorption – furnace technique	0.0002

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		Atomic absorption – furnace technique (stabilized temperature)	0.00002 <sup>5</sup>
		Inductively coupled plasma <sup>2</sup>	0.0003
		Inductively coupled plasma-mass spectrometry	0.0003
Cadmium	0.005	Atomic absorption – furnace technique	0.0001
		Inductively coupled plasma	0.001
Chromium	0.1	Atomic absorption – furnace technique	0.001
		Inductively coupled plasma	0.007
		Inductively coupled plasma	0.001
Cyanide	0.2	Distillation, spectrophotometric <sup>3</sup>	0.02
		Automated distillation, spectrophotometric <sup>3</sup>	0.005
		Distillation, selective electrode <sup>3</sup>	0.05
		Distillation, amenable, spectrophotometric <sup>4</sup>	0.02
		UV, distillation, spectrophotometric <sup>8</sup>	0.0005
		Micro distillation, flow injection, spectrophotometric <sup>3</sup>	0.0006

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		Ligand exchange with amperometry <sup>4</sup>	0.0005
Mercury	0.002	Manual cold vapor technique	0.0002
		Automated cold vapor technique	0.0002
Nickel	No MCL	Atomic absorption – furnace technique	0.001
		Atomic absorption – furnace technique (stabilized temperature)	0.0006 <sup>5</sup>
		Inductively coupled plasma <sup>2</sup>	0.005
		Inductively coupled plasma- mass spectrometry	0.0005
Nitrate (as N)	10	Manual cadmium reduction	0.01
		Automated hydrazine reduction	0.01
		Automated cadmium reduction	0.05
		Ion-selective electrode	1
		Ion chromatography	0.01
		Capillary ion electrophoresis	0.076
Nitrite (as N)	1	Spectrophotometric	0.01
		Automated cadmium reduction	0.05

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		Manual cadmium reduction	0.01
		Ion chromatography	0.004
		Capillary ion electrophoresis	0.103
Selenium	0.05	Atomic absorption – furnace technique	0.002
		Atomic absorption – gaseous hydride technique	0.002
Thallium	0.002	Atomic absorption – furnace technique	0.001
		Atomic absorption – furnace technique (stabilized temperature)	0.0007 <sup>5</sup>
		Inductively coupled plasma-mass spectrometry	0.0003

## Footnotes.

- <sup>1</sup> "MFL" means millions of fibers per liter less than 10 µm.
- <sup>2</sup> Using a 2x preconcentration step as noted in USEPA 200.7 (94). Lower MDLs ~~are possible~~ ~~may be achieved~~ when using a 4x preconcentration.
- <sup>3</sup> Screening method for total cyanides.
- <sup>4</sup> Measures "free" cyanides when ~~omitting~~ distillation, digestion, or ligand exchange ~~is omitted~~.
- <sup>5</sup> Lower MDLs are ~~possible~~ ~~reported~~ using stabilized temperature graphite furnace atomic absorption.
- <sup>6</sup> The MDL ~~reported~~ for USEPA 200.9 (94) (atomic absorption-platform furnace (stabilized temperature)) ~~resulted was determined~~ using a 2x concentration step during sample digestion. The MDL ~~determined for samples analyzed~~ using direct analyses (i.e., no sample digestion) ~~is will be~~ higher. Using multiple depositions, USEPA 200.9 (94) ~~can obtain is capable of obtaining~~ an MDL of 0.0001 mg/l.
- <sup>7</sup> Using selective ion monitoring, USEPA 200.8 (94) (ICP-MS) is capable of obtaining an MDL of 0.0001 mg/l.
- <sup>8</sup> Measures total cyanides when ~~using~~ UV-digestor ~~is used~~, and "free" cyanides

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when bypassing UV-digestor ~~is bypassed~~.

BOARD NOTE: Subsections (a) through (c) derive ~~are derived~~ from 40 CFR 141.23 preamble, and subsection (d) derives ~~is derived~~ from 40 CFR 141.23 (a)(4)(i) and appendix A to subpart C of 40 CFR 141. See the Board Note at Section 611.301(b) relating to the MCL for nickel.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.611 Inorganic Analysis**

Analytical methods are from documents incorporated by reference in Section 611.102. The substantive rules ~~These are~~ mostly reference these ~~referenced~~ by a short name defined by Section 611.102(a) defines. Section 611.101 defines other ~~Other abbreviations are defined in Section 611.101~~.

- a) A certified laboratory must conduct analyses ~~Analysis for the following~~ contaminants in this Section must be conducted using the indicated following methods or an alternative method the Agency approved under Section 611.480. USEPA Technical Notes, incorporated by reference in Section 611.102, includes criteria ~~Criteria~~ for analyzing arsenic, barium, beryllium, cadmium, calcium, chromium, copper, lead, nickel, selenium, sodium, and thallium with digestion or directly without digestion, and other analytical procedures, ~~are contained in USEPA Technical Notes, incorporated by reference in Section 611.102~~.

BOARD NOTE: Because a laboratory determines MDLs it reports under ~~reported in~~ USEPA 200.7 (94) and USEPA 200.9 (94) ~~were determined~~ using a 2× preconcentration step during sample digestion, MDLs the laboratory determines analyzing ~~determined when~~ samples ~~are analyzed~~ by direct analysis (i.e., no sample digestion) are ~~will be~~ higher. For direct analysis of cadmium and arsenic using by USEPA 200.7 (94); and arsenic using by SM 3120 B (89), SM 3120 B (93), or SM 3120 B (99), it may be necessary to engage in sample preconcentration using pneumatic nebulization ~~may be required~~ to achieve lower detection limits. Direct Preconcentration may also be required for direct analysis of antimony, lead, and thallium using by USEPA 200.9 (94); antimony and lead using by SM 3113 B (89), SM 3113 B (99), or SM 3113 B (10); and lead using by ASTM D3559-96 D, ASTM D3559-03 D, ASTM D3559-08 D, or ASTM D3559-15 D may require preconcentration, unless the laboratory makes multiple in-furnace depositions ~~are made~~.

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- 1) Alkalinity
  - A) Titrimetric. ASTM D1067-92 B, ASTM D1067-02 B, ASTM D1067-06 B, ASTM D1067-11 B, ASTM D1067-16 B, SM 2320 B (91), or SM 2320 B (97).
  - B) Electrometric Titration. USGS I-1030-85.
- 2) Antimony
  - A) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
  - B) Atomic Absorption, Hydride Technique. ASTM D3697-92, ASTM D3697-02, ASTM D3697-07, ~~or~~ ASTM D3697-12, [or ASTM D3697-17](#).
  - C) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
  - D) Atomic Absorption, Furnace Technique. SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), or SM 3113 B (10).
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).

## 3) Arsenic

BOARD NOTE: If [the laboratory uses](#) ultrasonic nebulization ~~is used~~ in [determining the determination of](#) arsenic ~~using by~~ USEPA 200.8 (94), the arsenic must be in the pentavalent state to provide uniform signal response. For direct analysis of arsenic with USEPA 200.8 (94) using ultrasonic nebulization, samples and standards must contain one mg/l of sodium hypochlorite.

- A) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).



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- B) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
  - C) Atomic Absorption, Furnace Technique. ASTM D2972-97 C, ASTM D2972-03 C, ASTM D2972-08 C, ASTM D2972-15 C, SM 3113 B (89), SM 3113 B (93), 3113 B (99), 3113 B (04), or 3113 B (10).
  - D) Atomic Absorption, Hydride Technique.. ASTM D2972-97 B, ASTM D2972-03 B, ASTM D2972-08 B, ASTM D2972-15 B, SM 3114 B (89), SM 3114 B (93), SM 3114 B (97), SM 3114 B (04), or SM 3114 B (09).
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (94).
- 4) Asbestos. Transmission Electron Microscopy. USEPA 100.1 (83) or USEPA 100.2 (94).
- 5) Barium
- A) Inductively Coupled Plasma. USEPA 200.7 (94), SM 3120 B (83), SM 3120 B (93), or SM 3120 B (99).
  - B) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
  - C) Atomic Absorption, Direct Aspiration Technique. SM 3111 D (89), SM 3111 D (93), or SM 3111 D (99).
  - D) Atomic Absorption, Furnace Technique. SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), and SM 3113 B (10).
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 6) Beryllium

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- A) Inductively Coupled Plasma. USEPA 200.7 (94), SM 3120 B (83), SM 3120 B (93), or SM 3120 B (99).
  - B) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
  - C) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
  - D) Atomic Absorption, Furnace Technique. ASTM D3645-97 B, ASTM D3645-03 B, ASTM D3645-08 B, ASTM D3645-15 B, SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), or SM 3113 B (10).
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 7) Cadmium
- A) Inductively Coupled Plasma Arc Furnace. USEPA 200.7 (94).
  - B) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
  - C) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
  - D) Atomic Absorption, Furnace Technique. SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), and SM 3113 B (10).
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 8) Calcium
- A) EDTA Titrimetric. ASTM D511-93 A, ASTM D511-03 A, ASTM D511-09 A, ASTM D511-14 A, SM 3500-Ca B (97), or 3500-Ca D (91).

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- B) Atomic Absorption, Direct Aspiration. ASTM D511-93 B, ASTM D511-03 B, ASTM D511-09 B, ASTM D511-14 B, SM 3111 B (89), SM 3111 B (93), or SM 3111 B (99).
  - C) Inductively Coupled Plasma. USEPA 200.7 (94), SM 3120 B (83), SM 3120 B (93), or SM 3120 B (99).
  - D) Ion Chromatography. ASTM D6919-03, ~~or~~ ASTM D6919-09, or ASTM D 6919-17.
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 9) Chromium
- A) Inductively Coupled Plasma. USEPA 200.7 (94), SM 3120 B (83), SM 3120 B (93), or SM 3120 B (99).
  - B) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
  - C) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
  - D) Atomic Absorption, Furnace Technique. SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), and SM 3113 B (10).
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 10) Copper
- A) Atomic Absorption, Furnace Technique. ASTM D1688-95 C, ASTM D1688-02 C, ASTM D1688-07 C, ASTM D1688-12 C, ASTM D1688-17 C, SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), and SM 3113 B (10).

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- B) Atomic Absorption, Direct Aspiration. ASTM D1688-95 A, ASTM D1688-02 A, ASTM D1688-07 A, ASTM D1688-12 A, [ASTM D1688-17 A](#), SM 3111 B (89), SM 3111 B (93), or SM 3111 B (99).
- C) Inductively Coupled Plasma. USEPA 200.7 (94), SM 3120 B (83), SM 3120 B (93), or SM 3120 B (99).
- D) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
- E) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
- F) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- G) Colorimetric. Hach 8026 (15) or Hach 10272 (15).
- 11) Conductivity; Conductance. ASTM D1125-95 (1999) A, ASTM D1125-14 A, SM 2510 B (91), or SM 2510 B (97).
- 12) Cyanide
- A) Manual Distillation with  $MgCl_2$ . (ASTM D2036-98 A, ASTM D2036-06 A, SM 4500-CN<sup>-</sup> C (90), SM 4500-CN<sup>-</sup> C (97), SM 4500-CN<sup>-</sup> C (99), or SM 4500-CN<sup>-</sup> C (16)), followed by spectrophotometric, amenable (ASTM D2036-98 B, ASTM D2036-06 B, SM 4500-CN<sup>-</sup> G (90), SM 4500-CN<sup>-</sup> G (97), SM 4500-CN<sup>-</sup> G (99), or SM 4500-CN<sup>-</sup> G (16)).
- B) Manual Distillation with  $MgCl_2$ . Distillation (ASTM D2036-98 A or ASTM D2036-06 A or SM 4500-CN<sup>-</sup> C (90), SM 4500-CN<sup>-</sup> C (97), SM 4500-CN<sup>-</sup> C (99), or SM 4500-CN<sup>-</sup> C (16)), followed by Spectrophotometric, Manual (ASTM D2036-98 A, ASTM D2036-06 A, SM 4500-CN<sup>-</sup> E (90), 4500-CN<sup>-</sup> E (97), 4500-CN<sup>-</sup> E (99), 4500-CN<sup>-</sup> E (16), or USGS I-3300-85).
- C) Spectrophotometric, Semiautomated. USEPA 335.4 (93).

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- D) Selective Electrode. SM 4500-CN<sup>-</sup> F (90), SM 4500-CN<sup>-</sup> F (97), SM 4500-CN<sup>-</sup> F (99), or SM 4500-CN<sup>-</sup> F (16).
- E) UV/Distillation/Spectrophotometric. Kelada 01 (01).
- F) Microdistillation/Flow Injection/Spectrophotometric. QuikChem 10-204-00-1-X (00).
- G) Ligand Exchange and Amperometry. ASTM D6888-04 or OIA-1677 DW (04).
- H) Gas Chromatography-Mass Spectrometry Headspace. ME355.01 (09).
- 13) Fluoride
- A) Ion Chromatography. USEPA 300.0 (93), USEPA 300.1 (97), ASTM D4327-97, ASTM D4327-03, ASTM D4327-11, [ASTM D4327-17](#), SM 4110 B (90), SM 4110 B (91), SM 4110 B (97), or SM 4110 B (00).
- B) Manual Distillation, Colorimetric SPADNS. SM 4500-F<sup>-</sup> B (88), SM 4500-F<sup>-</sup> B (94), SM 4500-F<sup>-</sup> B (97), SM 4500-F<sup>-</sup>, D (88), SM 4500-F<sup>-</sup> B (94), or SM 4500-F<sup>-</sup> B (97).
- C) Manual Electrode. ASTM D1179-93 B, ASTM D1179-99 B, ASTM D1179-04 B, ASTM D1179-10 B, ASTM D1179-16 B, SM 4500-F<sup>-</sup> C (88), SM 4500-F<sup>-</sup> C (94), or SM 4500-F<sup>-</sup> C (97).
- D) Automated Electrode. Technicon # 380-75WE (76).
- E) Automated Alizarin. SM 4500-F<sup>-</sup> E (88), SM 4500-F<sup>-</sup> E (94), SM 4500-F<sup>-</sup> E (97), or Technicon #129-71W.
- F) Arsenite-Free Colorimetric SPADNS. Hach 10225 (11) (SPADNS 2).
- G) Capillary Ion Electrophoresis. ASTM D6508-00.

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BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for fluoride to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of "Waters Method D6508, Rev. 2". The Board ~~has cited to~~ the ASTM Method D6508-00 (2005). On May 2, 2012 (at 77 Fed. Reg. 26072, 26096-97; in corrections to UCMR 3), USEPA changed the entries for nitrate, nitrite, and orthophosphate to ASTM D6508-00.

- 14) Lead
- A) Atomic Absorption, Furnace Technique. ASTM D3559-96 D, ASTM D3559-03 D, ASTM D3559-08 D, ASTM D3559-15 D, SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), or SM 3113 B (10).
  - B) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
  - C) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
  - D) Differential Pulse Anodic Stripping Voltammetry. Palintest 1001 (99).
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
  - F) Differential Pulse Anode Stripping Voltammetry. Palintest 1001 (20).
- 15) Magnesium
- A) Atomic Absorption. ASTM D511-93 B, ASTM D511-03 B, ASTM D511-09 B, ASTM D511-14 B, SM 3111 B (89), SM 3111 B (93), or SM 3111 B (99).

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- B) Inductively Coupled Plasma. USEPA 200.7 (94), SM 3120 B (89), SM 3120 B (93), or SM 3120 B (99).
  - C) Complexation Titrimetric. ASTM D511-93 A, ASTM D511-03 A, ASTM D511-09 A, ASTM D511-14 A, SM 3500-Mg B (97), SM 3500-Mg E (90), or SM 3500-Mg E (91).
  - D) Ion Chromatography. ASTM D6919-03, ~~or~~ ASTM D6919-09, or [ASTM D6919-17](#).
  - E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 16) Mercury
- A) Manual Cold Vapor Technique. ASTM D3223-97, ASTM D3223-02, ASTM D3223-12, [ASTM D3223-17](#), SM 3112 B (88), SM 3112 B (93), SM 3112 B (99), SM 3112 B (09), or USEPA 245.1 (91).
  - B) Automated Cold Vapor Technique. USEPA 245.2 (74).
  - C) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
- 17) Nickel
- A) Inductively Coupled Plasma. SM 3120 B (89), SM 3120 B (93), SM 3120 B (99), or USEPA 200.7 (94).
  - B) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
  - C) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
  - D) Atomic Absorption, Direct Aspiration Technique. SM 3111 B (89), 3111 B (93), or 3111 B (99).

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- E) Atomic Absorption, Furnace Technique. SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), or SM 3113 B (10).
- F) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 18) Nitrate
- A) Ion Chromatography. ASTM D4327-97, ASTM D4327-03, ASTM D4327-11, [ASTM D4327-17](#), SM 4110 B (90), SM 4110 B (97), SM 4110 B (00), ~~or~~ USEPA 300.0 (93), USEPA 300.1 (97), or Waters B-1011 (87).
- B) Automated Cadmium Reduction. ASTM D3867-90 A; SM 4500-NO<sub>3</sub><sup>-</sup> F (88), 4500-NO<sub>3</sub><sup>-</sup> F (93), 4500-NO<sub>3</sub><sup>-</sup> F (97), 4500-NO<sub>3</sub><sup>-</sup> F (00), 4500-NO<sub>3</sub><sup>-</sup> F (16), or USEPA 353.2 (93).
- C) Ion Selective Electrode. ATI Orion Technical Bulletin 601 (94), SM 4500-NO<sub>3</sub><sup>-</sup> D (88), SM 4500-NO<sub>3</sub><sup>-</sup> D (93), SM 4500-NO<sub>3</sub><sup>-</sup> D (97), SM 4500-NO<sub>3</sub><sup>-</sup> D (00), or SM 4500-NO<sub>3</sub><sup>-</sup> D (16).
- D) Manual Cadmium Reduction. ASTM D3867-90 B, SM 4500-NO<sub>3</sub><sup>-</sup> E (88), SM 4500-NO<sub>3</sub><sup>-</sup> E (93), SM 4500-NO<sub>3</sub><sup>-</sup> E (97), SM 4500-NO<sub>3</sub><sup>-</sup> E (00), or SM 4500-NO<sub>3</sub><sup>-</sup> E (16).
- E) Capillary Ion Electrophoresis. ASTM D6508-00 or ASTM D6508-15.
- F) Reduction-Colorimetric. Syssta Easy (1-Reagent) (09) or NECi Nitrate-Reductase (06).
- G) Direct Colorimetric. Hach 10206 (TNTplus 835/836).
- 19) Nitrite
- A) Ion Chromatography. ASTM D4327-97, ASTM D4327-03, ASTM D4327-11, [ASTM D4327-17](#), SM 4110 B (90), SM 4110 B



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- (97), ~~or~~ SM 4110 B (00), USEPA 300.0 (93), USEPA 300.1 (97), or Waters B-1011 (87).
- B) Automated Cadmium Reduction. ASTM D3867-90 A, SM 4500-NO<sub>3</sub><sup>-</sup> F (93), 4500-NO<sub>3</sub><sup>-</sup> F (97), 4500-NO<sub>3</sub><sup>-</sup> F (00), 4500-NO<sub>3</sub><sup>-</sup> F (16), or USEPA 353.2 (93).
- C) Manual Cadmium Reduction. ASTM D3867-90 B, SM 4500-NO<sub>3</sub><sup>-</sup> E (93), 4500-NO<sub>3</sub><sup>-</sup> E (97), 4500-NO<sub>3</sub><sup>-</sup> E (00), or 4500-NO<sub>3</sub><sup>-</sup> E (16).
- D) Spectrophotometric. SM 4500-NO<sub>2</sub><sup>-</sup> B (88), 4500-NO<sub>2</sub><sup>-</sup> B (93), or 4500-NO<sub>2</sub><sup>-</sup> B (00).
- E) Capillary Ion Electrophoresis. ASTM D6508-00 or ASTM D6508-15.
- F) Reduction-Colorimetric. Systea Easy (1-Reagent) (09) or NECi Nitrate-Reductase (06).
- 20) Orthophosphate (unfiltered, without digestion or hydrolysis)
- A) Automated Colorimetric, Ascorbic Acid. SM 4500-P F (88), SM 4500-P F (93), SM 4500-P F (97), SM 4500-P F (99), SM 4500-P F (05), Thermo-Fisher Discrete Analyzer (16), or USEPA 365.1 (93).
- B) Single-Reagent Colorimetric, Ascorbic Acid. ASTM D515-88 A, SM 4500-P E (88), 4500-P E (93), 4500-P E (97), or 4500-P E (99), or 4500-P E (05).
- C) Colorimetric, Phosphomolybdate. USGS I-1601-85.
- D) Phosphorus, Orthophosphate, Colorimetry, Phosphomolybdate, Automated-Segmented Flow. USGS I-2601-90.
- E) Colorimetric, Phosphomolybdate, Automated Discrete. USGS I-2598-85.

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- F) Ion Chromatography. ASTM D4327-97, ASTM D4327-03, ASTM D4327-11, [ASTM D4327-17](#), SM 4110 B (90), SM 4110 B (91), SM 4110 B (97), SM 4110 B (00), USEPA 300.0 (93), or USEPA 300.1 (97).
- G) Capillary Ion Electrophoresis. ASTM D6508-00 or ASTM D6508-15.
- 21) pH, Electrometric. ASTM D1293-95, ASTM D1293-99, ASTM D1293-12, [ASTM D1293-18](#), SM 4500-H<sup>+</sup> B (90), SM 4500-H<sup>+</sup> B (96), SM 4500-H<sup>+</sup> B (00), USEPA 150.1 (71), USEPA 150.2 (82), or USEPA 150.3 (13).
- 22) Selenium
- A) Atomic Absorption, Hydride. ASTM D3859-98 A, ASTM D3859-03 A, ASTM D3859-08 A, ASTM D3859-15 A, SM 3114 B (89), SM 3114 (93), SM 3114 (97), or SM 3114 (09).
- B) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).
- C) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).
- D) Atomic Absorption, Furnace Technique. ASTM D3859-98 B, ASTM D3859-03 B, ASTM D3859-08 B, ASTM D3859-15 B, SM 3113 B (89), SM 3113 B (93), SM 3113 B (99), SM 3113 B (04), or SM 3113 B (10).
- E) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 23) Silica
- A) Colorimetric, Molybdate Blue. USGS I-1700-85.
- B) Colorimetric, Molybdate Blue, Automated-Segmented Flow. USGS I-2700-85.

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- C) Colorimetric. ASTM D859-94, ASTM D859-00, ASTM D859-05, ASTM D859-10, or ASTM D859-16.
  - D) Molybdosilicate. SM 4500-Si D (88), SM 4500-Si D (93), or SM 4500-SiO<sub>2</sub> C (97).
  - E) Heteropoly Blue. SM 4500-Si E (88), SM 4500-Si E (93), or SM 4500-SiO<sub>2</sub> D (97).
  - F) Automated Method for Molybdate-Reactive Silica. SM 4500-Si F (88), SM 4500-Si F (93), or SM 4500-SiO<sub>2</sub> E (97).
  - G) Inductively Coupled Plasma. SM 3120 B (89), SM 3120 B (93), SM 3120 B (99), or USEPA 200.7 (94).
  - H) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 24) Sodium
- A) Inductively Coupled Plasma. USEPA 200.7 (94).
  - B) Atomic Absorption, Direct Aspiration. SM 3111 B (89), SM 3111 B (93), or SM 3111 B (99).
  - C) Ion Chromatography. ASTM D6919-03, ~~or~~ ASTM D6919-09, or ASTM D6919-17.
  - D) Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry (AVICP-AES). USEPA 200.5 (03).
- 25) Temperature; Thermometric. SM 2550 (88), SM 2550 (93), SM 2550 (00), or SM 2550 (10).
- 26) Thallium
- A) Inductively Coupled Plasma-Mass Spectrometry. USEPA 200.8 (94).

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- B) Atomic Absorption, Platform Furnace Technique. USEPA 200.9 (94).

- b) The supplier must use specific sample preservation, container, and maximum holding time procedures when collecting samples ~~Sample collection~~ for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium under Sections 611.600 through 611.604 ~~must be conducted using the following sample preservation, container, and maximum holding time procedures:~~

BOARD NOTE: For cyanide determinations, the supplier must adjust samples to pH 12 ~~must be adjusted~~ with sodium hydroxide to pH 12 when collecting them at the time of collection. When a sample needs chilling, the supplier must ship and store is indicated the sample ~~must be shipped and stored~~ at 4° C or less. The supplier may acidify ~~Acidification of~~ nitrate or metals samples using may be with a concentrated acid or a dilute (50% by volume) solution of the ~~applicable~~ concentrated acid. USEPA encourages acidifying ~~Acidification of~~ samples for metals analysis ~~is encouraged~~ and that allowed at the laboratory ~~acidify~~, rather than at the time of sampling, provided the supplier follows the shipping time and other instructions in Section 8.3 of USEPA 200.7 (94), USEPA 200.8 (94), or USEPA 200.9 (94) ~~are followed~~.

- 1) Antimony
  - A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 2) Arsenic
  - A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).

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- C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 3) Asbestos
- A) Preservative: Cool to 4° C.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.
- 4) Barium
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 5) Beryllium
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 6) Cadmium
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.

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- 7) Chromium
  - A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.
  
- 8) Cyanide
  - A) Preservative: Cool to 4° C. Add sodium hydroxide to pH greater than 12. See the analytical methods for information on sample preservation.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
  
- 9) Fluoride
  - A) Preservative: None.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within one month.
  
- 10) Mercury
  - A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within 28 days.
  
- 11) Nickel

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- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 12) Nitrate, Chlorinated
- A) Preservative: Cool to 4° C.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 13) Nitrate, Non-Chlorinated
- A) Preservative: Concentrated sulfuric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 14) Nitrite
- A) Preservative: Cool to 4° C.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.
- 15) Selenium
- A) Preservative: Concentrated nitric acid to pH less than 2.

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- B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 16) Thallium
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding Time. Samples must be analyzed as soon after collection as possible, but in any event within six months.
- c) A certified laboratory in one of the categories in Section 611.490(a) must conduct analyses ~~Analyses under this Subpart N must be conducted by a certified laboratory in one of the categories listed in Section 611.490(a).~~ The Agency must certify laboratories to conduct analyses for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium if the laboratory fulfills certain conditions ~~does as follows:~~
- 1) The laboratory ~~It~~ analyzes performance evaluation (PE) samples, provided by the Agency provides under 35 Ill. Adm. Code 186, including that include those substances at levels not exceeding reasonably in excess of levels expected levels in drinking water; and
  - 2) The laboratory ~~It~~ achieves quantitative results on the analyses within specified the following acceptance limits:
    - A) Antimony:  $\pm 30\%$  at greater than or equal to 0.006 mg/l.
    - B) Arsenic:  $\pm 30\%$  at greater than or equal to 0.003 mg/l.
    - C) Asbestos: 2 standard deviations based on study statistics.
    - D) Barium:  $\pm 15\%$  at greater than or equal to 0.15 mg/l.
    - E) Beryllium:  $\pm 15\%$  at greater than or equal to 0.001 mg/l.



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- F) Cadmium:  $\pm 20\%$  at greater than or equal to 0.002 mg/l.
- G) Chromium:  $\pm 15\%$  at greater than or equal to 0.01 mg/l.
- H) Cyanide:  $\pm 25\%$  at greater than or equal to 0.1 mg/l.
- I) Fluoride:  $\pm 10\%$  at 1 to 10 mg/l.
- J) Mercury:  $\pm 30\%$  at greater than or equal to 0.0005 mg/l.
- K) Nickel:  $\pm 15\%$  at greater than or equal to 0.01 mg/l.
- L) Nitrate:  $\pm 10\%$  at greater than or equal to 0.4 mg/l.
- M) Nitrite:  $\pm 15\%$  at greater than or equal to 0.4 mg/l.
- N) Selenium:  $\pm 20\%$  at greater than or equal to 0.01 mg/l.
- O) Thallium:  $\pm 30\%$  at greater than or equal to 0.002 mg/l.

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.23(k) and appendix A to subpart C of 40 CFR 141. The Board ~~did has~~ not separately ~~list listed the following~~ approved alternative methods from Standard Methods Online that are the same version as a method ~~appearing that appears~~ in a printed edition of Standard Methods. ~~Using Use of~~ the Standard Methods Online copy is acceptable.

Standard Methods Online, Method 2320 B-97 appears in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 2320 B. ~~This In this Section, this~~ appears in this Section as SM 2320 B (97).

Standard Methods Online, Method 2510 B-97 appears in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 2510 B. ~~This In this Section, this~~ appears in this Section as SM 2510 B (97).

Standard Methods Online, Method 2550-00 appears in the 21<sup>st</sup> edition as Method 2550. ~~This In this Section, this~~ appears in this Section as SM 2550 (00).

Standard Methods Online, Method 2550-10 appears in the 22<sup>nd</sup> edition as Method 2550. ~~This In this Section, this~~ appears in this Section as SM 2550 (10).

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Standard Methods Online, Methods 3111 B-99 and 3111 D-99 appear in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 3111 B and 3111 D. ~~These In this Section, these appear in this Section~~ as SM 3111 B (99) and SM 3111 D (99).

Standard Methods Online, Method 3112 B-09 appears in the 22<sup>nd</sup> and 23<sup>rd</sup> editions as Method 3112 B. ~~This In this Section, this appears in this Section~~ as SM 3112 B (09).

Standard Methods Online, Method 3113 B-99 appears in the 21<sup>st</sup> edition as Method 3113 B. ~~This In this Section, this appears in this Section~~ as SM 3113 B (99).

Standard Methods Online, Method 3113 B-10 appears in the 22<sup>nd</sup> and 23<sup>rd</sup> editions as Method 3113 B. ~~This In this Section, this appears in this Section~~ as SM 3113 B (10).

Standard Methods Online, Method 3114 B-97 appears in the 21<sup>st</sup> edition as Method 3114 B. ~~This In this Section, this appears in this Section~~ as SM 3114 B (97).

Standard Methods Online, Method 3114 B-09 appears in the 22<sup>nd</sup> and 23<sup>rd</sup> editions as Method 3114 B. ~~This In this Section, this appears in this Section~~ as SM 3114 B (09).

Standard Methods Online, Method 3120 B-99 appears in the 21<sup>st</sup> edition as Method 3120 B. ~~This In this Section, this appears in this Section~~ as SM 3120 B (99).

Standard Methods Online, Methods 3500-Ca B-97 and 3500-Ca D-97 appear in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 3500-Ca B and 3500-Ca D. ~~These In this Section, these appear in this Section~~ as SM 3500-Ca B (97) and SM 3500-Ca D (97).

Standard Methods Online, Method 3500-Mg B-97 appears in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 3500-Mg B. ~~This In this Section, this appears in this Section~~ as SM 3500-Mg B (97).

Standard Methods Online, Method 4110 B-00 appears in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 4110 B. ~~This In this Section, this appears in this Section~~ as SM 4110 B (00).

Standard Methods Online, Methods 4500-CN<sup>-</sup> C-90, 4500-CN<sup>-</sup> E-90, 4500-CN<sup>-</sup> F-90, and 4500-CN<sup>-</sup> G-90 appear in the 18<sup>th</sup> and 19<sup>th</sup> editions as Methods 4500-CN<sup>-</sup> C, 4500-CN<sup>-</sup> E, 4500-CN<sup>-</sup> F, and 4500-CN<sup>-</sup> G. ~~These In this Section, these appear in this Section~~ as SM 4500-CN<sup>-</sup> C (90), SM 4500-CN<sup>-</sup> E (90), SM 4500-CN<sup>-</sup> F (90), and SM 4500-CN<sup>-</sup> G (90).

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Standard Methods Online, Methods 4500-CN<sup>-</sup> C-99, 4500-CN<sup>-</sup> E-99, 4500-CN<sup>-</sup> F-99, and 4500-CN<sup>-</sup> G-99 appear in the 21<sup>st</sup> and 22<sup>nd</sup> editions as Methods 4500-CN<sup>-</sup> C, 4500-CN<sup>-</sup> E, 4500-CN<sup>-</sup> F, and 4500-CN<sup>-</sup> G. ~~These In this Section, these~~ appear [in this Section](#) as SM 4500-CN<sup>-</sup> C (99), SM 4500-CN<sup>-</sup> E (99), SM 4500-CN<sup>-</sup> F (99), and SM 4500-CN<sup>-</sup> G (99).

Standard Methods Online, Methods 4500-F<sup>-</sup> B-97, 4500-F<sup>-</sup> C-97, 4500-F<sup>-</sup> D-97, and 4500-F<sup>-</sup> E-97 appear in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 4500-F<sup>-</sup> B, 4500-F<sup>-</sup> C, 4500-F<sup>-</sup> D, and 4500-F<sup>-</sup> E. ~~These In this Section, these~~ appear [in this Section](#) as SM 4500-F<sup>-</sup> B (97), SM 4500-F<sup>-</sup> C (97), SM 4500-F<sup>-</sup> D (97), and SM 4500-F<sup>-</sup> E (97).

Standard Methods Online, Methods 4500-NO<sub>3</sub><sup>-</sup> D-00, 4500-NO<sub>3</sub><sup>-</sup> E-00, and 4500-NO<sub>3</sub><sup>-</sup> F-00 appear in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 4500-NO<sub>3</sub><sup>-</sup> D, 4500-NO<sub>3</sub><sup>-</sup> E, and 4500-NO<sub>3</sub><sup>-</sup> F. ~~These In this Section, these~~ appear [in this Section](#) as SM 4500-NO<sub>3</sub><sup>-</sup> D (00), SM 4500-NO<sub>3</sub><sup>-</sup> E (00), and SM 4500-NO<sub>3</sub><sup>-</sup> F (00).

Standard Methods Online, Method 4500-NO<sub>2</sub><sup>-</sup> B-00 appears in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 4500-NO<sub>2</sub><sup>-</sup> B. ~~This In this Section, this~~ appears [in this Section](#) as SM 4500-NO<sub>2</sub><sup>-</sup> B (00).

Standard Methods Online, Method 4500-H<sup>+</sup> B-90 appears in the 18<sup>th</sup> and 19<sup>th</sup> editions as Method 4500-H<sup>+</sup> B. ~~This In this Section, this~~ appears [in this Section](#) as SM 4500-H<sup>+</sup> B (90).

Standard Methods Online, Method 4500-H<sup>+</sup> B-00 appears in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 4500-H<sup>+</sup> B. ~~This In this Section, this~~ appears [in this Section](#) as SM 4500-H<sup>+</sup> B (00).

Standard Methods Online, Methods 4500-P E-99 and 4500-P F-99 appear in the 21<sup>st</sup> and 22<sup>nd</sup> editions as Methods 4500-P E and 4500-P F. ~~These In this Section, these~~ appear [in this Section](#) as SM 4500-P E (97) and SM 4500-P F (97).

Standard Methods Online, Methods 4500-SiO<sub>2</sub> C-97, 4500-SiO<sub>2</sub> D-97, and 4500-SiO<sub>2</sub> E-97 appear in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 4500-SiO<sub>2</sub> C, 4500-SiO<sub>2</sub> D, and 4500-SiO<sub>2</sub> E. ~~These In this Section, these~~ appear [in this Section](#) as SM 4500-SiO<sub>2</sub> C (97), SM 4500-SiO<sub>2</sub> D (97), and SM 4500-SiO<sub>2</sub> E (97).

Standard Methods Online, Method 6251 B-07 appears in the 22<sup>nd</sup> and 23<sup>rd</sup> editions as Method 6251 B. ~~This In this Section, this~~ appears [in this Section](#) as SM 6251 B (07).

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## NOTICE OF PROPOSED AMENDMENTS

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

**Section 611.641 State-Only Old MCLs**

- a) An analysis of substances for the purpose of determining compliance with the State-only old MCLs of Section 611.310 must be made as follows:
  - 1) The Agency must issue a, by SEP requiring, require CWS suppliers utilizing surface water sources to collect samples during the period of the year when contamination by pesticides is most likely to occur. The Agency must require the supplier to repeat these analyses at least annually.
  - 2) The Agency must issue a, by SEP requiring C2WS, require CWS suppliers utilizing only groundwater sources to collect samples at least once every three years.
- b) If the result of an analysis made under pursuant to subsection (a) indicates that the level of any contaminant exceeds its State-only old MCL, the CWS supplier must report to the Agency within seven days and initiate three additional analyses within one month.
- c) When the average of four analyses made under pursuant to subsection (a), rounded to the same number of significant figures as the MCL for the substance in question, exceeds the State-only old MCL, the CWS supplier must report to the Agency and give notice to the public under pursuant to Subpart T of this Part. Monitoring after public notification must be at a frequency designated by the Agency and must continue until the MCL has not been exceeded in two successive samples or until a monitoring schedule as a condition to a variance, adjusted standard, or enforcement action becomes effective.
- d) Analysis made to determine compliance with the State-only old MCLs of Section 611.310 must be made in accordance with the appropriate methods specified in Section 611.645.

BOARD NOTE: This provision now applies only to State-only MCLs. This Section originally ~~It was formerly~~ derived from 40 CFR 141.24(a) through (e), which USEPA removed and reserved.

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## NOTICE OF PROPOSED AMENDMENTS

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.645 Analytical Methods for Organic Chemical Contaminants**

~~The laboratory must analyze Analysis~~ for the Section 611.311(a) VOCs under Section 611.646, the Section 611.311(c) SOCs under Section 611.648, the Section 611.310 ~~State-only old~~ MCLs under Section 611.641, and ~~for~~ the Section 611.312 MCL for TTHMs under Section 611.381 ~~must be conducted~~ using the methods ~~listed~~ in this Section. All methods are incorporated by reference in Section 611.102. ~~USEPA Technical Notes, incorporated by reference in Section 611.102, contains other~~ ~~Other~~ required analytical test procedures germane to conducting the conduct of these analyses ~~are contained in the USEPA Technical Notes, incorporated by reference in Section 611.102.~~

- a) Volatile Organic Chemical Contaminants (VOCs)
  - 1) Benzene
    - A) Purge and Trap Gas Chromatography. USEPA 502.2 (95).
    - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
  - 2) Carbon tetrachloride
    - A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
    - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
    - C) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
  - 3) Chlorobenzene
    - A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).

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- B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 4) 1,2-Dichlorobenzene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 5) 1,4-Dichlorobenzene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 6) 1,2-Dichloroethane
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 7) 1,1-Dichloroethylene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 8) cis-Dichloroethylene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).

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- B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 9) trans-Dichloroethylene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 10) Dichloromethane
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 11) 1,2-Dichloropropane
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 12) Ethylbenzene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 13) Styrene

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- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95)
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 14) Tetrachloroethylene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
  - C) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 15) Toluene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 16) 1,2,4-Trichlorobenzene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 17) 1,1,1-Trichloroethane
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).



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- B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
  - C) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 18) 1,1,2-Trichloroethane
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
  - C) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 19) Trichloroethylene
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
  - C) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 20) Vinyl chloride
- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- 21) Xylenes (total)

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- A) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), 524.3 (09), or 524.4 (13).
- b) Synthetic Organic Chemical Contaminants (SOCs)
- 1) 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD or Dioxin). Isotope Dilution High Resolution Gas Chromatography-High Resolution Mass Spectrometry. USEPA 1613 (94).
  - 2) 2,4-D
    - A) Gas Chromatography with Electron Capture Detector. ASTM D5317-93, ASTM D5317-98(2003), SM 6640 B (01), or SM 6640 B (06).
    - B) Liquid-Liquid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.1 (89) or USEPA 515.3 (96).
    - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.2 (95).
    - D) Liquid-Liquid Microextraction, Derivatization, and Fast Gas Chromatography with Electron Capture Detector. USEPA 515.4 (00).
    - E) High Performance Liquid Chromatography with Photodiode Array Ultraviolet Detector. USEPA 555 (92).
  - 3) 2,4,5-TP (Silvex)
    - A) Gas Chromatography with Electron Capture Detector. ASTM D5317-93, ASTM D5317-98(2003), SM 6640 B (01), or SM 6640 B (06).

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- B) Liquid-Liquid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.1 (89) or USEPA 515.3 (96).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.2 (95).
  - D) Liquid-Liquid Microextraction, Derivatization, and Fast Gas Chromatography with Electron Capture Detector. USEPA 515.4 (00).
  - E) High Performance Liquid Chromatography with Photodiode Array Ultraviolet Detector. USEPA 555 (92).
- 4) Alachlor
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Nitrogen-Phosphorus Detector. USEPA 507 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - F) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 5) Atrazine
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Nitrogen-Phosphorus Detector. USEPA 507 (95).

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- C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 523 (11).
  - E) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - F) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - G) Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry. USEPA 536 (07).
  - H) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
  - I) Immunoassay. Syngenta AG-6252.
- 6) Benzo(a)pyrene
- A) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - B) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - C) Liquid Liquid Extraction and HPLC with Coupled Ultraviolet and Fluorescence Detection. USEPA 550 (90) or USEPA 550.1 (90).
- 7) Carbofuran. ~~Direct Aqueous Injection HPLC with Post Column Derivatization. SM 6610 (92), 6610 (96), 6610 B (99), SM 6610 B (04), USEPA 531.1 (95), or USEPA 531.2 (01).~~
- A) Direct Aqueous Injection HPLC with Post-Column Derivatization. SM 6610 (92), 6610 (96), 6610 B (99), SM 6610 B (04), USEPA 531.1 (95), or USEPA 531.2 (01).
  - B) Liquid Chromatography/Mass Spectrometry. ME 531 (19).

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- 8) Chlordane
  - A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
- 9) Dalapon
  - A) Liquid-Liquid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.1 (89) or USEPA 515.3 (96).
  - B) Liquid-Liquid Microextraction, Derivatization, and Fast Gas Chromatography with Electron Capture Detector. SM 6640 B (01), SM 6640 B (06), or USEPA 515.4 (00).
  - C) Solid Phase Extractor (Acidic Methanol), Gas Chromatography, Electron Capture Detector. USEPA 552.1 (92).
  - D) Liquid-Liquid Extraction (Acidic Methanol), Gas Chromatography, Electron Capture Detector. USEPA 552.2 (95) or USEPA 552.3 (03).
  - E) Ion Chromatography, Electrospray Ionization, Tandem Mass Spectrometry. USEPA 557 (09).
- 10) Dibromochloropropane (DBCP)
  - A) Microextraction and Gas Chromatography. USEPA 504.1 (95).

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- B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.3 (09).
  - C) Liquid-Liquid Extraction, Gas Chromatography, Electron Capture Detector. USEPA 551.1 (95).
- 11) Di(2-ethylhexyl)adipate
- A) Liquid-Liquid or Liquid-Solid Extraction and Gas Chromatography with Photoionization Detection. USEPA 506 (95).
  - B) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - C) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
- 12) Di(2-ethylhexyl)phthalate
- A) Liquid-Liquid or Liquid-Solid Extraction and Gas Chromatography with Photoionization Detection. USEPA 506 (95).
  - B) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - C) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
- 13) Dinoseb
- A) Liquid-Liquid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.1 (89) or USEPA 515.3 (96).
  - B) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.2 (95).

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- C) Liquid-Liquid Microextraction, Derivatization, and Fast Gas Chromatography with Electron Capture Detector. SM 6640 B (01), SM 6640 B (06), or USEPA 515.4 (00).
  - D) High Performance Liquid Chromatography with Photodiode Array Ultraviolet Detector. USEPA 555 (92).
- 14) Diquat. Liquid-Solid Extraction and HPLC with Ultraviolet Detection. USEPA 549.2 (97).
- 15) Endothall. Ion-Exchange Extraction, Acidic Methanol Methylation and Gas Chromatography/Mass Spectrometry. USEPA 548.1 (92).
- 16) Endrin
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - F) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 17) Ethylene Dibromide (EDB)
- A) Microextraction and Gas Chromatography. USEPA 504.1 (95).
  - B) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.3 (09).

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- C) Liquid-Liquid Extraction, Gas Chromatography, Electron Capture Detector. USEPA 551.1 (95).
- 18) Glyphosate
- A) Direct Aqueous Injection HPLC, Post-Column Derivatization, and Fluorescence Detection. USEPA 547 (90).
  - B) Anion- or Cation-Exchange HPLC and Post-Column Derivatization with Ultraviolet Fluorescence Detector. SM 6651 B (91), SM 6651 B (96), SM 6651 B (00), or SM 6651 B (05).
- 19) Heptachlor
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - F) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 20) Heptachlor Epoxide
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).



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- C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - F) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 21) Hexachlorobenzene
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - F) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 22) Hexachlorocyclopentadiene
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).

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- C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - F) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 23) Lindane
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - F) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 24) Methoxychlor
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).

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- C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - F) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 25) Oxamyl. ~~Direct Aqueous Injection HPLC with Post-Column Derivatization. SM 6610 (92), 6610 (96), 6610 B (99), SM 6610 B (04), USEPA 531.1 (95), or USEPA 531.2 (01).~~
- A) Direct Aqueous Injection HPLC with Post-Column Derivatization. SM 6610 (92), 6610 (96), 6610 B (99), SM 6610 B (04), USEPA 531.1 (95), or USEPA 531.2 (01).
  - B) Liquid Chromatography/Mass Spectrometry. ME 531 (19).
- 26) PCBs (measured for compliance purposes as decachlorobiphenyl). Screening by Perchlorination and Gas Chromatography. USEPA 508A (89).
- 27) PCBs (qualitatively identified as alachlors)
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).

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- 28) Pentachlorophenol
- A) Gas Chromatography with Electron Capture Detector. ASTM D5317-93, ASTM D5317-98(2003), SM 6640 B (01), or SM 6640 B (06).
  - B) Liquid-Liquid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.1 (89) or USEPA 515.3 (96).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.2 (95).
  - D) Liquid-Liquid Microextraction, Derivatization, and Fast Gas Chromatography with Electron Capture Detector. USEPA 515.4 (00).
  - E) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - F) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - G) High Performance Liquid Chromatography with Photodiode Array Ultraviolet Detector. USEPA 555 (92).
- 29) Picloram
- A) Gas Chromatography with Electron Capture Detector. ASTM D5317-93, ASTM D5317-98(2003), SM 6640 B (01), or SM 6640 B (06).
  - B) Liquid-Liquid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.1 (89) or USEPA 515.3 (96).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 515.2 (95).

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- D) Liquid-Liquid Microextraction, Derivatization, and Fast Gas Chromatography with Electron Capture Detector. USEPA 515.4 (00).
  - E) High Performance Liquid Chromatography with Photodiode Array Ultraviolet Detector. USEPA 555 (92).
- 30) Simazine
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 507 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 523 (11).
  - E) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - F) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
  - G) Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry. USEPA 536 (07).
  - H) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- 31) Toxaphene
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).

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- C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - E) Solid Phase Extraction and Capillary Column Gas Chromatography-Mass Spectrometry. USEPA 525.3 (12).
- c) Total Trihalomethanes (TTHMs)
- 1) Purge and Trap Capillary Column Gas Chromatography. USEPA 502.2 (95).
  - 2) Purge and Trap Gas Chromatography-Mass Spectrometry. USEPA 524.2 (95), USEPA 524.3 (09), or USEPA 524.4 (13).
  - 3) Liquid-Liquid Extraction and Gas Chromatography. USEPA 551.1 (95).
- d) State-Only MCLs (for which a method is not listed in subsections (a) through (c))
- 1) Aldrin
    - A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
    - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).
    - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
    - D) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
  - 2) DDT
    - A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
    - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).

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- 3) Dieldrin
- A) Microextraction and Gas Chromatography. USEPA 505 (95)1.
  - B) Gas Chromatography with Electron Capture Detector. USEPA 508 (95).
  - C) Liquid-Solid Extraction Gas Chromatography with Electron Capture Detector. USEPA 508.1 (95).
  - D) Gas Chromatography-Mass Spectrometry. USEPA 525.2 (95).
- e) The following endnotes are appended to method entries in subsections (a) and (b):

<sup>1</sup> denotes that, for the particular contaminant, the laboratory should substitute a nitrogen-phosphorus detector ~~should be substituted~~ for the electron capture detector in USEPA 505 (95) (or use another approved method ~~should be used~~) to determine alachlor, atrazine, and simazine if it needs a lower detection limit limits are required.

<sup>2</sup> denotes that the laboratory may not use Syngenta AG-625 (01) ~~for may not be used for the analysis of~~ atrazine in any system using where chlorine dioxide ~~is used~~ for ~~drinking water~~ treatment. In samples from all other systems, the laboratory must confirm any result for atrazine using generated by Syngenta AG-625 (01) that is greater than one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015 mg/l or 1.5 µg/l) ~~must be confirmed~~ using another approved method ~~for this contaminant~~ and ~~should use~~ additional volume of the original sample the supplier collected ~~for compliance monitoring~~. ~~If In instances where~~ a result from Syngenta AG-625 (01) triggers ~~such~~ confirmatory testing, the supplier must use the confirmatory result ~~is to be used~~ to determine compliance.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.24(e) and appendix A to subpart C of 40 CFR 141. The Board did has not separately list listed the following approved alternative methods from Standard Methods Online that are the same version as a method appearing that appears in a printed edition of Standard Methods. Using Use of the Standard Methods Online copy is acceptable.

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Standard Methods Online, Method 6610 B-04 appears in the 22<sup>nd</sup> and 23<sup>rd</sup> editions as Method 6610 B. ~~This In this Section, this~~ appears [in this Section](#) as SM 6610 B (04).

Standard Methods Online, Method 6640 B-01 appears in the 21<sup>st</sup> edition as Method 6640 B. ~~This In this Section, this~~ appears [in this Section](#) as SM 6640 B (01).

Standard Methods Online, Method 6640 B-06 appears in the 22<sup>nd</sup> and 23<sup>rd</sup> editions as Method 6640 B. ~~This In this Section, this~~ appears [in this Section](#) as SM 6640 B (06).

Standard Methods Online, Method 6651 B-00 appears in the 21<sup>st</sup> edition as Method 6651 B. ~~This In this Section, this~~ appears [in this Section](#) as SM 6651 B (00).

Standard Methods Online, Method 6651 B-05 appears in the 22<sup>nd</sup> and 23<sup>rd</sup> editions as Method 6651 B. ~~This In this Section, this~~ appears [in this Section](#) as SM 6651 B (05).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.648 Phase II, Phase IIB, and Phase V Synthetic Organic Contaminants**

Analysis of the Phase II, Phase IIB, and Phase V SOCs for the purposes of determining compliance with the MCL must be conducted as follows:

- a) Definitions. As used in this Section, the following terms will have the following meanings:

"Detect" or "detection" means that the contaminant of interest is present at a level greater than or equal to the "detection limit".

"Detection limit" means the level of the contaminant of interest that is specified in subsection (r).

BOARD NOTE: This is a "trigger level" for Phase II, Phase IIB, and Phase V SOCs inasmuch as it prompts further action. The use of the term "detect" or "detection" in this Section is not intended to include any analytical capability of quantifying lower levels of any contaminant, or the "method detection limit".

- b) Required Sampling. Each supplier must take a minimum of one sample at each sampling point at the times required in subsection (q).



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BOARD NOTE: See the Board note appended to Section 611.311(c) for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.

## c) Sampling Points

- 1) Sampling Points for GWSs. Unless otherwise provided ~~in a by~~-SEP, a GWS supplier must take at least one sample from each of the following points: each entry point that is representative of each well after treatment.
- 2) Sampling Points for an SWS or Mixed System Supplier. Unless otherwise provided ~~in a by~~-SEP, an SWS or mixed system supplier must sample from each of the following points:
  - A) Each entry point after treatment; or
  - B) Points in the distribution system that are representative of each source.
- 3) The supplier must take each sample at the same sampling point unless the Agency ~~issues has granted~~-a SEP that designates another location as more representative of each source, treatment plant, or within the distribution system.
- 4) If a system draws water from more than one source, and the sources are combined before distribution, the supplier must sample at an entry point during periods of normal operating conditions when water is representative of all sources being used.

BOARD NOTE: Subsections (b) and (c) ~~derive derived~~ from 40 CFR 141.24(h)(1) through (h)(3).

## d) Monitoring Frequency

- 1) Each CWS and NTNCWS supplier must take four consecutive quarterly samples for each of the Phase II, Phase IIB, and Phase V SOCs during each compliance period, beginning in the three-year compliance period starting in the initial compliance period.

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- 2) Suppliers serving more than 3,300 persons that do not detect a contaminant in the initial compliance period must take a minimum of two quarterly samples in one year of each subsequent three-year compliance period.
  - 3) Suppliers serving fewer than or equal to 3,300 persons that do not detect a contaminant in the initial compliance period must take a minimum of one sample during each subsequent three-year compliance period.
- e) Reduction to Annual Monitoring Frequency. A CWS or NTNCWS supplier may apply to the Agency for a SEP releasing the supplier that releases it from the requirements of subsection (d). A SEP from the requirement of subsection (d) may must last for only a single three-year compliance period.
- f) Vulnerability Assessment. The Agency must issue grant a SEP from the requirements of subsection (d) based on consideration of the factors set forth at Section 611.110(a).
- g) If one of the Phase II, Phase IIB, or Phase V SOCs is detected in any sample, then the following must occur:
- 1) The supplier must monitor quarterly for the contaminant at each sampling point that resulted in a detection.
  - 2) Annual Monitoring
    - A) A supplier may request that the Agency issue grant a SEP reducing that reduces the monitoring frequency to annual.
    - B) A request for a SEP must include the following minimal information:
      - i) For a GWS, two quarterly samples.
      - ii) For an SWS or mixed system supplier, four quarterly samples.
    - C) The Agency must issue grant a SEP allowing that allows annual

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monitoring at a sampling point if it determines that the sampling point is reliably and consistently below the MCL.

- D) When ~~in~~ issuing the SEP, the Agency must specify the level of the contaminant upon which the "reliably and consistently below the MCL" determination was based. Any SEP allowing that allows less frequent monitoring based on an Agency "reliably and consistently below the MCL" determination must include a condition requiring the supplier to resume quarterly monitoring under subsection (g)(1) if it detects any Phase II SOC.
- 3) Suppliers that monitor annually must monitor during the quarters that previously yielded the highest analytical result.
- 4) Suppliers that have three consecutive annual samples with no detection of a contaminant at a sampling point may apply to the Agency for a SEP with respect to that point, as specified in subsections (e) and (f).
- 5) Monitoring for Related Contaminants
- A) If monitoring results in detection of one or more of the related contaminants listed in subsection (g)(5)(B), subsequent monitoring must analyze for all the related compounds in the respective group.
- B) Related Contaminants
- i) First Group
- aldicarb
- aldicarb sulfone
- aldicarb sulfoxide

BOARD NOTE: See the Board note appended to Section 611.311(c) for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.

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- ii) Second Group
  - heptachlor
  - heptachlor epoxide.
- h) Quarterly Monitoring Following MCL Violations
  - 1) Suppliers that violate an MCL for one of the Phase II, Phase IIB, or Phase V SOCs, as determined by subsection (k), must monitor quarterly for that contaminant at the sampling point where the violation occurred, beginning the next quarter after the violation.
  - 2) Annual Monitoring
    - A) A supplier may request that the Agency ~~issue grant~~ a SEP ~~reducing that reduces~~ the monitoring frequency to annual.
    - B) A request for a SEP must include, at a minimum, the results from four quarterly samples.
    - C) The Agency must ~~issue grant~~ a SEP ~~allowing that allows~~ annual monitoring at a sampling point if it determines that the sampling point is reliably and consistently below the MCL.
    - D) ~~When in~~ issuing the SEP, the Agency must specify the level of the contaminant upon which the "reliably and consistently below the MCL" determination was based. Any SEP ~~allowing that allows~~ less frequent monitoring based on an Agency "reliably and consistently below the MCL" determination must include a condition requiring the supplier to resume quarterly monitoring under subsection (h)(1) if it detects any Phase II SOC.
    - E) The supplier must monitor during the quarters that previously yielded the highest analytical result.
- i) Confirmation Samples
  - 1) If any of the Phase II, Phase IIB, or Phase V SOCs are detected in a

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sample, the supplier must take a confirmation sample as soon as possible, but no later than 14 days after the supplier receives notice of the detection.

- 2) Averaging is as specified in subsection (k).
  - 3) The Agency must delete the original or confirmation sample if it determines that a sampling error occurred, in which case the confirmation sample will replace the original or confirmation sample.
- j) This subsection (j) corresponds with 40 CFR 141.24(h)(10), an optional USEPA provision relating to compositing of samples that USEPA does not require for state programs. This statement maintains structural consistency with USEPA rules.
- k) Compliance with the MCLs for the Phase II, Phase IIB, and Phase V SOCs must be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the supplier is in violation of the MCL.
- 1) For a supplier that monitors more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.
  - 2) A supplier that monitors annually or less frequently whose sample result exceeds the regulatory detection level as defined by subsection (r) must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling.
  - 3) If any sample result will cause the running annual average to exceed the MCL at any sampling point, the supplier is out of compliance with the MCL immediately.
  - 4) If a supplier fails to collect the required number of samples, compliance will be based on the total number of samples collected.
  - 5) If a sample result is less than the detection limit, zero will be used to calculate the annual average.
- l) This subsection (l) corresponds with 40 CFR 141.24(h)(12), which USEPA removed and reserved. This statement maintains structural consistency with the

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federal regulations.

- m) Analysis for PCBs must be conducted as follows using the methods in Section 611.645:
- 1) Each supplier that monitors for PCBs must analyze each sample using either USEPA 505 (95) or USEPA 508 (95).
  - 2) If PCBs are detected in any sample analyzed using USEPA ~~Organic Methods, Method-505~~ (95) or USEPA 508 (95), the supplier must reanalyze the sample using USEPA 508A (89) to quantitate the individual Aroclors (as decachlorobiphenyl).
  - 3) Compliance with the PCB MCL must be determined based upon the quantitative results of analyses using USEPA 508A (89).
- n) This subsection (n) corresponds with 40 CFR 141.24(h)(14), an obsolete provision that relates to the initial compliance period from 1993 through 1995. This statement maintains consistency with the federal regulations.
- o) The Agency must issue a SEP ~~increasing that increases~~ the number of sampling points or the frequency of monitoring if it determines that this is necessary to detect variations within the PWS due to such factors as fluctuations in contaminant concentration due to seasonal use or changes in the water source.
- BOARD NOTE: At 40 CFR 141.24(h)(15), ~~USEPA uses the stated~~ factors ~~are as~~ non-limiting examples of circumstances ~~making that make~~ additional monitoring necessary.
- p) This subsection (p) corresponds with 40 CFR 141.24(h)(16), a USEPA provision relating to reserving enforcement authority to the State that would serve no useful function as part of the State's rules. This statement maintains structural consistency with USEPA rules.
- q) Each supplier must monitor, within each compliance period, at the time designated by the Agency ~~in a by~~ SEP.
- r) "Detection" means greater than or equal to the following concentrations for each contaminant:

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- 1) For PCBs (Aroclors), the following:

Aroclor	Detection Limit (mg/ℓ)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

- 2) For other Phase II, Phase IIB, and Phase V SOCs, the following:

Contaminant	Detection Limit (mg/ℓ)
Alachlor	0.0002
Aldicarb	0.0005
Aldicarb sulfoxide	0.0005
Aldicarb sulfone	0.0008
Atrazine	0.0001
Benzo(a)pyrene	0.00002
Carbofuran	0.0009
Chlordane	0.0002
2,4-D	0.0001
Dalapon	0.001
1,2-Dibromo-3-chloropropane (DBCP)	0.00002
Di(2-ethylhexyl)adipate	0.0006
Di(2-ethylhexyl)phthalate	0.0006
Dinoseb	0.0002
Diquat	0.0004
Endothall	0.009
Endrin	0.00001
Ethylene dibromide (EDB)	0.00001
Glyphosate	0.006
Heptachlor	0.00004
Heptachlor epoxide	0.00002

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Hexachlorobenzene	0.0001
Hexachlorocyclopentadiene	0.0001
Lindane	0.00002
Methoxychlor	0.0001
Oxamyl	0.002
Picloram	0.0001
Polychlorinated biphenyls (PCBs) (as decachlorobiphenyl)	0.0001
Pentachlorophenol	0.00004
Simazine	0.00007
Toxaphene	0.001
2,3,7,8-TCDD (dioxin)	0.000000005
2,4,5-TP (silvex)	0.0002

BOARD NOTE: See the Board note appended to Section 611.311(c) for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.

## s) Laboratory Certification

- 1) Analyses under this Section must only be conducted by a laboratory in one of the categories listed in Section 611.490(a) that has been certified according to the conditions of subsection (s)(2).
- 2) To receive certification to conduct analyses for the Phase II, Phase IIB, and Phase V SOCs, the laboratory must do the following:
  - A) Analyze PE samples provided by the Agency under 35 Ill. Adm. Code 183.125(c) that include these substances; and
  - B) Achieve quantitative results on the analyses performed under subsection (s)(2)(A) that are within the following acceptance limits:

SOC	Acceptance Limits
Alachlor	± 45%
Aldicarb	2 standard deviations
Aldicarb sulfone	2 standard deviations



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Aldicarb sulfoxide	2 standard deviations
Atrazine	± 45%
Benzo(a)pyrene	2 standard deviations
Carbofuran	± 45%
Chlordane	± 45%
Dalapon	2 standard deviations
Di(2-ethylhexyl)adipate	2 standard deviations
Di(2-ethylhexyl)phthalate	2 standard deviations
Dinoseb	2 standard deviations
Diquat	2 standard deviations
Endothall	2 standard deviations
Endrin	± 30%
Glyphosate	2 standard deviations
Dibromochloropropane (DBCP)	± 40%
Ethylene dibromide (EDB)	± 40%
Heptachlor	± 45%
Heptachlor epoxide	± 45%
Hexachlorobenzene	2 standard deviations
Hexachlorocyclopentadiene	2 standard deviations
Lindane	± 45%
Methoxychlor	± 45%
Oxamyl	2 standard deviations
PCBs (as decachlorobiphenyl)	0-200%
Pentachlorophenol	± 50%
Picloram	2 standard deviations
Simazine	2 standard deviations
Toxaphene	± 45%
2,4-D	± 50%
2,3,7,8-TCDD (dioxin)	2 standard deviations
2,4,5-TP (silvex)	± 50%

BOARD NOTE: See the Board note appended to Section 611.311(c) for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.

- t) A new system supplier or a supplier ~~using that uses~~ a new source of water must demonstrate compliance with the MCL within a period of time specified by a permit issued by the Agency. The supplier must also comply with the initial

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sampling frequencies specified by the Agency to ensure the supplier can demonstrate compliance with the MCL. Routine and increased monitoring frequencies must be conducted in accordance with the requirements in this Section.

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.24(h).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

**Section 611.720 Analytical Methods**

- a) ~~A certified laboratory must use specific~~ The methods specified below, or alternative methods approved by the Agency approved under Section 611.480, incorporated by reference in Section 611.102, are to be used to determine whether the supplier complies compliance with Section 611.330, except in cases where alternative methods have been approved in accordance with Section 611.480.
- 1) Gross Alpha and Beta
    - A) Evaporation Methods. SM 302 (71); SM 7110 B (85); SM 7110 B (91); SM 7110 B (96); SM 7110 B (00); USEPA 900.0 (80); USEPA 900.0 (18); USEPA 00-01 (84); USEPA IRM (76), pages 1-3; USEPA RCA (79), pages 1-5; or USGS R1120-76.
    - B) Liquid Scintillation Methods. ASTM D7283-17 or SM 7110 D (17).
  - 2) Gross Alpha. Coprecipitation Methods. SM 7110 C (91), SM 7110 C (96), SM 7110 C (00), or USEPA 00-02 (84).
  - 3) Radium-226
    - A) Radiochemical Methods. ASTM D2460-97; ASTM D2460-07; Georgia Radium (04); New York Radium (82); SM 304 (71); SM 7500-Ra B (88); SM 7500-Ra B (93); SM 7500-Ra B (01); USEPA 903.0 (80); USEPA 903.0(21); USEPA Ra-03 (84); USEPA IRM

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(76), pages 13-15; USEPA RCA (79), pages 19-32; or USGS R-1140-76.

- B) Radon Emanation Methods. ASTM D3454-97; ASTM D3454-05; [ASTM D3454-18](#); EML (97) Ra-04; EML (90) Ra-05; SM 305 (71); SM 7500-Ra C (88); SM 7500-Ra C (93); SM 7500-Ra C (01); USEPA 903.1 (80); [USEPA 903.1 \(21\)](#); USEPA Ra-04 (84); USEPA IRM (76), pages 16-23; or USGS R-1141-76.
  - C) Gamma Spectrometry. SM 7500-Ra E (01) or SM 7500-Ra E (07).
- 4) Radium-228
- A) Radiochemical Methods. Georgia Radium (04); New Jersey Radium (90); New York Radium (82); SM 7500-Ra D (88); SM 7500-Ra D (93); SM 7500-Ra D (01); USEPA 904.0 (80); USEPA Ra-05 (90); USEPA IRM (76), pages 24-28; USEPA RCA (79), pages 19-32; or USGS R-1142-76.
  - B) Gamma Spectrometry. SM 7500-Ra E (01) or SM 7500-Ra E (07).
- 5) Uranium
- A) Radiochemical Methods. SM 7500-U B (88), SM 7500-U B (91), SM 7500-U B (96), SM 7500-U B (00), or USEPA 908.0 (80).
  - B) Fluorometric Methods. ASTM D2907-97, EML (90) U-04, EML (97) U-04, SM 7500-U C (88), SM 7500-U C (91), SM 7500-U C (96), SM 7500-U C (00), USEPA 908.1 (80), USGS R-1180-76, or USGS R-1181-76.
  - C) ICP-MS Methods. ASTM D5673-03, ASTM D5673-05, ASTM D5673-10, ASTM D5673-16; SM 3125 (97); or USEPA 200.8 (94).
  - D) Alpha Spectrometry. ASTM D3972-97; ASTM D3972-02; ASTM D3972-09; EML (90) U-02; EML (97) U-02; USEPA 00-07 (84); USEPA RCA (79), pages 33-48; or USGS R-1182-76.

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- E) Laser Spectrometry. ASTM D5174-97, ASTM D5174-02, or ASTM D5174-07.
- F) Alpha Liquid Scintillation Spectrometry. ASTM D6239-09.

BOARD NOTE: If the laboratory determines uranium (U) ~~is determined~~ by mass, it must use a conversion factor of 0.67 pCi/ $\mu$ g ~~U of uranium must be used~~. This conversion factor ~~reflects is based on~~ the characteristic 1:1 activity ratio of  $^{234}\text{U}$  and  $^{238}\text{U}$  ~~that is characteristic~~ of naturally occurring uranium.

- 6) Radioactive Cesium
  - A) Radiochemical Methods. ASTM D2459-72; SM 7500-Cs B (88), SM 7500-Cs B (93); SM 7500-Cs B (00); USEPA 901.0 (80); USEPA IRM (76), pages 4-5; or USGS R-1111-76.
  - B) Gamma Ray Spectrometry. ASTM D3649-91; ASTM D3649-98a; ASTM D3649-06; EML (90) Ga-01; EML (97) Ga-01-R; SM 7120 (94); SM 7120 (97); USEPA 901.1 (80); USEPA RCA (79), pages 92-95; or USGS R-1110-76.
- 7) Radioactive Iodine
  - A) Radiochemical Methods. ASTM D3649-91; ASTM D3649-98a; ASTM D3649-06; SM 7500-I B (88); SM 7500-I B (93); SM 7500-I B (00); SM 7500-I C (88); SM 7500-I C (93); SM 7500-I C (00); SM 7500-I D (88); SM 7500-I D (93); SM 7500-I D (00); USEPA 902.0 (80); USEPA IRM (76), pages 6-8; or USEPA IRM (76), pages 9-12.
  - B) Gamma Ray Spectrometry. ASTM D4785-93; ASTM D4785-00a; ASTM D4785-08; EML (90) Ga-01; EML (97) Ga-01-R; SM 7120 (94); SM 7120 (97); USEPA 901.1 (80); or USEPA RCA (79), pages 92-95.
- 8) Radioactive Strontium-89 and -90. Radiochemical Methods. EML (90) Sr-01; EML (97) Sr-01; EML (90) Sr-02; EML (97) Sr-02; SM 303 (71); SM 7500-Sr B (88); SM 7500-Sr B (93); SM 7500-Sr B (01); USEPA

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905.0 (80); USEPA Sr-04 (84); USEPA IRM (76), pages 29-33; USEPA RCA (79), pages 65-73; or USGS R-1160-76.

- 9) Tritium. Liquid Scintillation. ASTM D4107-91; ASTM D4107-98; ASTM D4107-08; SM 306 (71); SM 7500-3H B (88); SM 7500-3H B (93); SM 7500-3H B (00); USEPA 906.0 (80); USEPA H-02 (84); USEPA IRM (76), pages 34-37; USEPA RCA (79), pages 87-91; or USGS R-1171-76.
  - 10) Gamma Emitters. Gamma Ray Spectrometry. ASTM D3649-91; ASTM D3649-98a; ASTM D3649-06; ASTM D4785-93; ASTM D4785-00a; ASTM D4785-08; EML (90) Ga-01; EML (97) Ga-01-R; SM 7120 (94); SM 7120 (97); SM 7500-Cs B (88); SM 7500-Cs B (93); SM 7500-Cs B (00); SM 7500-I B (88); SM 7500-I B (93); SM 7500-I B (00); USEPA 901.0 (80); USEPA 901.1 (80); USEPA 902.0 (80); USEPA RCA (79), pages 92-95; or USGS R-1110-76.
- b) When the laboratory must identify and measure ~~identification and measurement of~~ radionuclides other than those ~~listed in subsection (a) are required, it must use the following~~ methods from either of two sources, incorporated by reference in Section 611.102, ~~are to be used, except if the Agency approves in cases where~~ alternative methods under have been approved in accordance with Section 611.480:
- 1) USEPA ARP (73).
  - 2) EML (90) or EML (97).
- c) For ~~the purpose of~~ monitoring radioactivity concentrations in drinking water, a detection limit defines the required sensitivity of the radioanalysis ~~is defined in terms of a detection limit~~. The detection limit ~~is the must be that~~ concentration a laboratory which can measure be counted with a precision of plus or minus 100 percent at the 95 percent confidence level ( $1.96\sigma$ , where  $\sigma$  is the standard deviation of the net counting rate of the sample).
- 1) When determining ~~To determine~~ compliance with Section 611.330(b), (c), and (e), the detection limit must not exceed certain the concentrations ~~set forth in the following table~~:

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Contaminant	Detection Limit
Gross alpha particle activity	3 pCi/ℓ
Radium-226	1 pCi/ℓ
Radium-228	1 pCi/ℓ
Uranium	1 µg/ℓ

BOARD NOTE: This subsection (c)(1) derives ~~Derived~~ from 40 CFR 141.25(c) Table B.

- 2) When determining ~~To determine~~ compliance with Section 611.330(d), the detection limits must not exceed certain ~~the~~ concentrations ~~listed in the following table:~~

Radionuclide	Detection Limit
Tritium	1,000 pCi/ℓ
Strontium-89	10 pCi/ℓ
Strontium-90	2 pCi/ℓ
Iodine-131	1 pCi/ℓ
Cesium-134	10 pCi/ℓ
Gross beta	4 pCi/ℓ
Other radionuclides	1/10 of applicable limit

BOARD NOTE: This subsection (c)(2) derives ~~Derived~~ from 40 CFR 141.25(c) Table C.

- d) When determining ~~To judge~~ compliance with the MCLs ~~listed~~ in Section 611.330, the laboratory must use averages of data ~~must be used~~ and round results ~~must be~~

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~~rounded~~ to the same number of significant figures as the MCL ~~for the substance in question.~~

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.25 and appendix A to subpart C of 40 CFR 141. The Board ~~did has~~ not separately ~~list listed the following~~ approved alternative methods from Standard Methods Online that are the same version as a method ~~appearing that appears~~ in a printed edition of Standard Methods. ~~Using~~ Use of the Standard Methods Online copy is acceptable.

Standard Methods Online, Methods 7110 B-91 and 7110 C-91 appear in the 18<sup>th</sup> and 19<sup>th</sup> editions as Methods 7110 B and 7110 C. ~~These In this Section, these appear in this Section~~ as SM 7110 B (91) and SM 7110 C (91).

Standard Methods Online, Methods 7110 B-00 and 7110 C-00 appear in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 7110 B and 7110 C. ~~These In this Section, these appear in this Section~~ as SM 7110 B (00) and SM 7110 C (00).

Standard Methods Online, Method 7120-97 appears in the 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 7120. ~~This In this Section, this appears in this Section~~ as SM 7120 (97).

Standard Methods Online, Method 7500-Cs B-00 appears in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 7500-Cs B. In this Section, thus appears as SM 7500-Cs B (00).

Standard Methods Online, Methods 7500-I B-00, 7500-I C-00, and 7500-I D-00 appear in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 7500-I B, 7500-I C, and 7500-I D. ~~These In this Section, these appear in this Section~~ as SM 7500-I B (00), SM 7500-I C (00), and SM 7500-I D (00).

Standard Methods Online, Methods 7500-Ra B-01, 7500-Ra C-01, and 7500-Ra D-01 appears in the 21<sup>st</sup> and 22<sup>nd</sup> editions as Methods 7500-Ra B, 7500-Ra C, and 7500-Ra D. ~~These In this Section, these appear in this Section~~ as SM 7500-Ra B (01), SM 7500-Ra C (01), and SM 7500-Ra D (01).

Standard Methods Online, Methods 7500-Ra B-07, 7500-Ra C-07, 7500-Ra D-07, and 7500-Ra E-07 appears in the 23<sup>rd</sup> edition as Methods 7500-Ra B, 7500-Ra C, 7500-Ra D, and 7500-Ra E. ~~These In this Section, these appear in this Section~~ as SM 7500-Ra B (07), SM 7500-Ra C (07), SM 7500-Ra D (07), and SM 7500-Ra E (07).

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Standard Methods Online, Method 7500-Sr B-01 appears in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 7500-Sr B. ~~This In this Section, this~~ appears in this Section as SM 7500-Sr B (01).

Standard Methods Online, Method 7500-3H B-00 appears in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Method 7500-3H B. ~~This In this Section, this~~ appears in this Section as SM 7500-3H B (00)

Standard Methods Online, Methods 7500-U B and 7500-U C-00 appear in the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> editions as Methods 7500-U B and 7500-U C. ~~These In this Section, these~~ appear in this Section as SM 7500-U B (00) and SM 7500-U C (00).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.731 Gross Alpha**

Monitoring ~~requirements for Gross Alpha Particle Activity-gross alpha particle activity, Radium-226, Radium-228, radium-226, radium-228, and Uranium uranium~~ are as follows:

- a) A ~~community water system (CWS)~~ supplier must monitor ~~conduct initial monitoring~~ to determine whether it complies ~~compliance~~ with Section 611.330(b), (c), and (e). For ~~the purposes of monitoring for~~ gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, ~~"detection limit" is defined as in Section 611.720(e).~~
- 1) Applicability and Sampling Location for an Existing CWS Supplier. An existing CWS supplier using groundwater, surface water, or both groundwater and surface water ~~(for the purpose of this Section hereafter referred to as a supplier)~~ must sample at every entry point to the distribution system representing that is representative of all sources the supplier uses being used ~~(hereafter called~~ a sampling point) under normal operating conditions. The supplier must take each sample at the same sampling point, unless conditions make another sampling point more representative of each source or the Agency designates ~~has designated~~ a distribution system location, under in accordance with ~~subsection~~ (b)(2)(C).
- 2) Applicability and Sampling Location for a New CWS Supplier. A new CWS supplier or a CWS supplier using that uses ~~a new source of water~~



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must begin ~~to conduct~~ initial monitoring for the new source within the first quarter after ~~beginning to initiating~~ use of the source. A CWS supplier must conduct more frequent monitoring ~~as directed when ordered~~ by the Agency in ~~a SEP due to the event of~~ possible contamination or ~~when~~ changes in the distribution system or treatment processes ~~occur~~ that may increase the concentration of radioactivity in ~~the supplier's~~ finished water.

- b) Initial Monitoring. ~~The Agency may issue a SEP directing a A-CWS supplier to monitor must conduct initial monitoring~~ for gross alpha particle activity, radium-226, radium-228, and uranium ~~for four consecutive quarters at all sampling points. The Agency may revise the SEP waiving the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit. For gross alpha particle activity, uranium, radium-226, and radium-228 monitoring, the Agency may issue a SEP waiving the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit. If the average of the initial monitoring results for a sampling point is above the MCL, the supplier must collect and analyze quarterly samples at that sampling point until its results from four consecutive quarters are at or below the MCL, unless the Agency issues a SEP requiring another schedule as part of a formal compliance agreement, as follows:~~
- 1) ~~A CWS supplier without acceptable historical data, as defined in subsection (b)(2), is required to have collected four consecutive quarterly samples at all sampling points before December 31, 2007.~~
  - 2) ~~Grandfathering Data. A CWS supplier may use historical monitoring data collected at a sampling point to satisfy the initial monitoring requirements for that sampling point, under the following situations:~~
    - A) ~~To satisfy initial monitoring requirements, a CWS supplier having only one entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.~~
    - B) ~~To satisfy initial monitoring requirements, a CWS supplier with multiple entry points and having appropriate historical monitoring data for each entry point to the distribution system may use the monitoring data from the last compliance monitoring period that~~

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~~began between June 2000 and December 8, 2003.~~

- ~~C) To satisfy initial monitoring requirements, a CWS supplier with appropriate historical data for a representative point in the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003, provided that the Agency finds that the historical data satisfactorily demonstrate that each entry point to the distribution system is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between entry points. The Agency must make its finding in writing, by a SEP, indicating how the data conforms to the requirements of this subsection (b)(2).~~
- 3) ~~For gross alpha particle activity, uranium, radium-226, and radium-228 monitoring, the Agency may, by a SEP, waive the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit.~~
- 4) ~~If the average of the initial monitoring results for a sampling point is above the MCL, the supplier must collect and analyze quarterly samples at that sampling point until the system has results from four consecutive quarters that are at or below the MCL, unless the supplier enters into another schedule as part of a formal compliance agreement with the Agency.~~
- c) Reduced Monitoring. The Agency may allow a CWS supplier to reduce the future frequency of monitoring from once every three years to once every six or nine years at each sampling point, based on certain ~~the following~~ criteria:
- 1) If the average of the initial monitoring results for each contaminant (i.e., gross alpha particle activity, uranium, radium-226, or radium-228) is below the detection limit ~~specified in the table at~~ Section 611.720(c)(1) specifies, the supplier must collect and analyze for that contaminant using at least one sample at that sampling point every nine years.
  - 2) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is at or above the detection limit but at or below one-half the MCL, the supplier must collect and analyze

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for that contaminant using at least one sample at that sampling point every six years. For combined radium-226 and radium-228, the supplier must combine the analytical results ~~must be combined~~. If the average of the combined initial monitoring results for radium-226 and radium-228 is at or above the detection limit but at or below one-half the MCL, the supplier must collect and analyze for that contaminant using at least one sample at that sampling point every six years.

- 3) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is above one-half the MCL but at or below the MCL, the supplier must collect and analyze at least one sample at that sampling point every three years. For combined radium-226 and radium-228, the supplier must combine the analytical results ~~must be combined~~. If the average of the combined initial monitoring results for radium-226 and radium-228 is above one-half the MCL but at or below the MCL, the supplier must collect and analyze at least one sample at that sampling point every three years.
  - 4) A supplier must use the samples it collected during the reduced monitoring period to determine the monitoring frequency for subsequent monitoring periods (e.g., if a supplier's sampling point is on a nine year monitoring period, and the sample result is above one-half the MCL, then the next monitoring period for that sampling point is three years).
  - 5) If a supplier has a monitoring result exceeding that exceeds the MCL while on reduced monitoring, the supplier must collect and analyze quarterly samples at that sampling point until the supplier has results from four consecutive quarters that are below the MCL, unless the supplier enters into another schedule as part of a formal compliance agreement with the Agency.
- d) Compositing. To fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a supplier may composite up to four consecutive quarterly samples from a single entry point if analysis is done within a year after collecting the first sample. The supplier must treat analytical results from the composited sample ~~must be treated~~ as the average analytical result to determine whether the supplier complies compliance with the MCLs and the future monitoring frequency. If the analytical result from the composited sample is greater than one-half the MCL, the Agency may issue, by a

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SEP ~~directing, direct~~ the supplier to take additional quarterly samples before allowing the supplier to sample under a reduced monitoring schedule.

- e) A ~~supplier may substitute a~~ gross alpha particle activity measurement ~~may be substituted~~ for the required radium-226 measurement, provided ~~that~~ the measured gross alpha particle activity does not exceed 5 pCi/l. A ~~supplier may substitute a~~ gross alpha particle activity measurement ~~may be substituted~~ for the required uranium measurement, provided ~~that~~ the measured gross alpha particle activity does not exceed 15 pCi/l.
- 1) The gross alpha measurement must have a confidence interval of 95% ( $1.65\sigma$ , where  $\sigma$  is the standard deviation of the net counting rate of the sample) for radium-226 and uranium.
  - 2) When a supplier uses a gross alpha particle activity measurement in lieu of a radium-226 or uranium measurement, ~~the supplier must use~~ the gross alpha particle activity analytical result ~~will be used~~ to determine the future monitoring frequency for radium-226 or uranium.
  - 3) If the ~~laboratory does not detect~~ gross alpha particle activity ~~result is less than detection~~, ~~the supplier must use~~ one-half the detection limit ~~will be used~~ to determine ~~whether it complies~~ ~~compliance~~ and ~~its~~ ~~the~~ future monitoring frequency.

BOARD NOTE: ~~This Section derives Subsections (a) through (e) derive~~ from 40 CFR 141.26(a).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.732 Beta Particle and Photon Radioactivity**

Monitoring and Compliance ~~Requirements~~ for Manmade Radioactivity. To determine compliance with the maximum contaminant levels in Section 611.330(d) for beta particle and photon radioactivity, a supplier must monitor at a specified frequency ~~as follows~~:

- a) ~~If the Agency issues a SEP designating a A-CWS supplier (either a surface water or groundwater supplier) designated by the Agency, by a SEP, as vulnerable, the supplier~~ must sample for beta particle and photon radioactivity. ~~The A-supplier~~ must collect quarterly samples for beta emitters and annual samples for tritium

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and strontium-90 at each entry point to the distribution system (hereafter called a sampling point); beginning within one quarter after ~~being notified by~~ the Agency issues the SEP. A supplier ~~already designated by~~ the Agency designates must continue to sample until the Agency issues a new SEP removing reviews and either reaffirms or removes the designation, ~~by a SEP~~.

- 1) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 50 pCi/l (the screening level), the Agency may reduce the monitoring frequency ~~of monitoring~~ at that sampling point to once every three years. A supplier must collect all required samples ~~required in subsection (a)~~ during the reduced monitoring period.
  - 2) For a supplier in the vicinity of a nuclear facility, the Agency may issue a SEP allowing ~~allow~~ the CWS supplier to use ~~utilize~~ environmental surveillance data ~~collected by~~ the nuclear facility collected in lieu of monitoring at the supplier's entry points upon determining the nuclear facility's, where the Agency determines if such data are pertinent is applicable to the supplier's a particular water system, ~~by a SEP~~. ~~If in the event that there is a release from a nuclear facility occurs,~~ a supplier ~~that is~~ using surveillance data must begin monitoring at the CWS's community water supplier's entry points under in accordance with subsection (b)(1).
- b) A CWS supplier (either a surface water or groundwater supplier) ~~designated by~~ the Agency designates in, ~~by a SEP,~~ as using source water utilizing waters contaminated by effluent ~~effluents~~ from a nuclear facility ~~facilities~~ must sample for beta particle and photon radioactivity. ~~The A~~ supplier must collect quarterly samples for beta emitters and iodine-131 and annual samples for tritium and strontium-90 at each entry point to its the distribution system (~~hereafter called a~~ sampling point); beginning within one quarter after ~~being notified by~~ the Agency issues the SEP. A supplier already designated by the Agency as a supplier using waters contaminated by effluents from nuclear facilities must continue to sample until the Agency reviews and issues a SEP removing either reaffirms or removes the designation, ~~by a SEP~~.
- 1) The supplier must base quarterly ~~Quarterly~~ monitoring for gross beta particle activity ~~must be based on the~~ analysis of monthly samples or the analysis of a composite of three monthly samples.

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BOARD NOTE: In corresponding 40 CFR 141.26(b)(2)(i), USEPA recommends ~~using the use of a composite of three monthly~~ samples.

- 2) For iodine-131, ~~the supplier must analyze~~ a composite of five consecutive daily samples ~~must be analyzed~~ once each quarter. The Agency must ~~issue a SEP requiring require, by a SEP,~~ more frequent monitoring for iodine-131 ~~if analysis identifies where iodine-131 is identified~~ in the finished water.
- 3) ~~The supplier must annually monitor Annual monitoring~~ for strontium-90 and tritium ~~using must be conducted by means of the analysis of~~ a composite of four consecutive quarterly samples or ~~analysis of~~ four quarterly samples.

BOARD NOTE: In corresponding 40 CFR 141.26(b)(2)(iii), USEPA recommends ~~using the analysis of~~ four consecutive quarterly samples.

- 4) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/l, the Agency may ~~issue;~~ ~~by~~ a SEP ~~reducing, reduce~~ the frequency of monitoring at that sampling point to once every three years. The supplier must collect the ~~same type of~~ samples ~~required in~~ subsection (b) ~~requires~~ during the reduced monitoring period.
  - 5) For a supplier in the vicinity of a nuclear facility, the Agency may ~~issue a SEP allowing allow~~ the CWS to ~~use utilize~~ environmental surveillance data ~~collected by~~ the nuclear facility ~~collected~~ in lieu of monitoring at the system's entry points ~~upon determining the nuclear facility's, where~~ the Agency ~~determines, by~~ a SEP, that ~~such data are pertinent is applicable~~ to the ~~supplier's particular water~~ system. ~~If In the event that there is~~ a release from a nuclear facility ~~occurs~~, a supplier ~~using that uses such~~ surveillance data must begin monitoring at the CWS's entry points ~~under in accordance with~~ subsection (b)(1).
- c) A CWS supplier ~~designated by~~ the Agency ~~designates~~ to monitor for beta particle and photon radioactivity cannot apply to the Agency for a waiver from the monitoring frequencies ~~specified~~ in subsection (a) or (b).

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- d) A CWS supplier may analyze for naturally occurring potassium-40 beta particle activity ~~using from~~ the same or ~~an~~ equivalent sample ~~it~~ used for the gross beta particle activity analysis. A supplier ~~may is allowed to~~ subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if ~~it exceeded~~ the screening level ~~is exceeded~~. The ~~supplier must calculate~~ potassium-40 beta particle activity ~~must be calculated~~ by multiplying elemental potassium concentrations (in mg/l) by a factor of 0.82 ~~pCi/mg~~.
- e) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the appropriate screening level, ~~the supplier must analyze an analysis of~~ the sample ~~must be performed~~ to identify the major radioactive constituents present in the sample and ~~calculate and sum~~ the appropriate doses ~~must be calculated and summed~~ to determine compliance with Section 611.330(d)(1); using the formula in Section 611.330(d)(2). ~~The supplier must also calculate and combine doses~~ ~~Doses must also be calculated and combined~~ for measured levels of tritium and strontium to determine compliance.
- f) A supplier must monitor monthly at the sampling points ~~exceeding that exceeds~~ the ~~MCL maximum contaminant level~~ in Section 611.330(d) beginning the month after the exceedance occurs. A supplier must continue monthly monitoring until the supplier has established ~~that it meets the MCL~~; by a rolling average of three monthly samples, ~~that the MCL is being met~~. A supplier ~~establishing that establishes~~ that ~~it meets~~ the MCL ~~is being met~~ must return to quarterly monitoring until it ~~complies with meets the requirements set forth in~~ subsection (a)(1) or (b)(4).

BOARD NOTE: ~~This Section derives~~ ~~Derived~~ from 40 CFR 141.26(b).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.733 General Monitoring and Compliance Requirements**

- a) The Agency may ~~issue, by~~ a SEP ~~requiring, require~~ more frequent monitoring than ~~specified in~~ Sections 611.731 and 611.732 ~~specify~~ or ~~requiring may require~~ confirmation samples. The ~~supplier must average the results of the initial and confirmation samples to determine whether it complies will be averaged for use in a compliance determination.~~

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- b) ~~A Each~~ PWS supplier must monitor at the time ~~designated by~~ the Agency ~~designates~~ during each compliance period.
- c) Compliance. ~~A supplier must determine whether it complies~~ with Section 611.330(b) through (e) ~~must be determined~~ based on the analytical results ~~it obtains~~ ~~obtained~~ at each sampling point. If one sampling point ~~violates is in violation of~~ an MCL, the supplier ~~violates is in violation of~~ the MCL.
- 1) ~~A For a~~ supplier monitoring more than once per year ~~must run an annual average at each sampling point to determine whether it complies;~~ ~~compliance~~ with the MCL ~~is determined by a running annual average at each sampling point~~. If the average of any sampling point is greater than the MCL, ~~then~~ the supplier ~~does not comply is out of compliance~~ with the MCL.
  - 2) ~~A For a~~ supplier monitoring more than once per year ~~immediately does not comply with an MCL;~~ if any sample result would cause the running average to exceed the MCL at any single sampling point, ~~the supplier is immediately out of compliance with the MCL~~.
  - 3) A supplier must include all samples ~~it takes and analyzes taken and analyzed~~ under ~~the provisions of~~ this Section and Sections 611.731 and 611.732 ~~to determine whether it complies in determining compliance,~~ even if that number is greater than the ~~required~~ minimum ~~required~~.
  - 4) If a supplier does not collect all required samples ~~to determine its when compliance is~~ based on a running annual average of quarterly samples, ~~the supplier must determine whether it complies compliance will be~~ based on the running average of the samples ~~it~~ collected.
  - 5) If a sample result is less than the detection limit, ~~the supplier must use zero will be used~~ to calculate the annual average, unless ~~the supplier uses a gross alpha particle activity is being used~~ in lieu of radium-226 or uranium. If the gross alpha particle activity result is less than ~~the~~ detection limit, ~~the supplier must use~~ one-half the detection limit ~~will be used~~ to calculate the annual average.
- d) The Agency may ~~issue, by~~ a SEP ~~allowing, allow~~ the supplier to delete results of obvious sampling or analytic errors.



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- e) ~~A CWS supplier exceeding~~ If the MCL for a radioactive contaminant ~~radioactivity set forth in Section 611.330(b) 611.330(b) through (e) is exceeded,~~ the operator of a CWS must ~~notify~~ give notice to the Agency under Section 611.840 and to the public ~~under, as required by~~ Subpart V.

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.26(c).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART R: ENHANCED FILTRATION AND DISINFECTION:  
SYSTEMS THAT SERVE 10,000 OR MORE PEOPLE

**Section 611.740 General Requirements**

- a) ~~This The requirements of this~~ Subpart R ~~contains~~ are National Primary Drinking Water Regulations. These ~~Subpart R regulations establish~~ requirements for filtration and disinfection ~~apply that are~~ in addition to ~~those applying standards under which filtration and disinfection are required~~ under Subpart B. ~~This The requirements of this~~ Subpart R ~~applies are applicable~~ to a Subpart B system supplier serving 10,000 or more persons, unless ~~otherwise specified in this~~ Subpart R ~~specifies otherwise~~. ~~This The regulations in this~~ Subpart R ~~establishes establish or extends extend~~ treatment ~~techniques technique requirements~~ in lieu of ~~maximum contaminant levels (MCLs) for certain the following~~ contaminants: Giardia lamblia, viruses, heterotrophic plate count bacteria, Legionella, Cryptosporidium, and turbidity. ~~A Each~~ Subpart B system supplier serving 10,000 or more persons must ~~treat provide treatment of~~ its source water ~~complying that complies~~ with ~~the these~~ treatment ~~techniques in this Subpart R technique requirements~~ and are in addition to those ~~identified~~ in Section 611.220. The treatment ~~techniques in this Subpart R technique requirements~~ consist of installing and properly operating water treatment processes ~~that~~ reliably ~~achieving two objectives achieve the following~~:
- 1) At least 99 percent (2-log) removal of Cryptosporidium between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for a ~~supplier applying filtration treatment filtered systems, or Cryptosporidium control under the watershed control plan for unfiltered systems~~; and

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- 2) Compliance with the profiling and benchmark requirements under ~~the provisions of~~ Section 611.742.
- b) A PWS supplier subject to ~~the requirements of~~ this Subpart R complies is considered to be in compliance with the requirements of subsection (a) if it complies with the applicable filtration requirements in Section 611.250 or 611.743 and the disinfection requirements in Sections 611.240 and 611.742. ~~the following is true:~~
  - 1) ~~It meets the requirements for avoiding filtration in Sections 611.232 and 611.741, and the disinfection requirements in Sections 611.240 and 611.742; or~~
  - 2) ~~It meets the applicable filtration requirements in either Section 611.250 or Section 611.743, and the disinfection requirements in Sections 611.240 and 611.742.~~
- c) A supplier must not begin constructing an ~~construction of~~ uncovered finished water storage facility ~~facilities~~.
- d) A supplier deciding to significantly that decides to make a significant change to its disinfection practice, as ~~described in~~ Section 611.742 (c)(1)(A) through (c)(1)(D) describes, must obtain Agency the approval in a SEP before of the Agency prior to making the significant ~~such a~~ change.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.170 ~~(2016)~~.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.741 Standards for ~~Avoiding~~ Filtration**

A In addition to the requirements of Section 611.232, a PWS supplier must apply filtration treatment complying with Subpart B and subject to the requirements of this Subpart R that does not provide filtration must meet all of the conditions of subsections (a) and (b).

- a) ~~Site-Specific Conditions. In addition to site-specific conditions in Section 611.232, a supplier must maintain the watershed control program under Section 611.232(b) to minimize the potential for contamination by Cryptosporidium oocysts in the source water. The watershed control program must, for~~

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~~Cryptosporidium, do the following:~~

- ~~1) Identify watershed characteristics and activities that may have an adverse effect on source water quality; and~~
  - ~~2) Monitor the occurrence of activities that may have an adverse effect on source water quality.~~
- b) ~~During the onsite inspection conducted under the provisions of Section 611.232(c), the Agency must determine whether the watershed control program established under Section 611.232(b) is adequate to limit potential contamination by Cryptosporidium oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of the supplier's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water supplier has maximized land ownership or controlled land use within the watershed.~~

BOARD NOTE: This Section originally derived ~~Derived~~ from 40 CFR 141.171. The Board removed provisions for unfiltered system suppliers. A supplier in Illinois using a surface water source or groundwater under the direct influence of surface water must apply filtration treatment and disinfection to water it provides to the public.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.742 Disinfection Profiling and Benchmarking**

- a) Determination of a Supplier Required to Profile. A PWS supplier subject to ~~the requirements of~~ this Subpart R must determine its TTHM annual average under ~~using the procedure in~~ subsection (a)(1) and its HAA5 annual average under ~~using the procedure in~~ subsection (a)(2). The annual average is the arithmetic average of the quarterly averages from ~~of~~ four consecutive quarters of monitoring.
  - 1) The supplier must use the TTHM annual average ~~that is used must be the annual average~~ during the same period as the HAA5 annual average.
    - A) A supplier that collected data under ~~the provisions of~~ 40 CFR 141 Subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under former 40 CFR 141.42 (1995).

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- B) A supplier using that uses "grandfathered" HAA5 occurrence data under that meet the provisions of subsection (a)(2)(B) must use TTHM data it collected at the same time under the provisions of former Section 611.680.
- C) A supplier using that uses HAA5 occurrence data under that meet the provisions of subsection (a)(2)(C)(i) must use TTHM data it collected at the same time under the provisions of Section 611.310 and former Section 611.680.
- 2) The HAA5 annual average the supplier uses that is used must be the annual average during the same period as the TTHM annual average.
- A) A supplier that collected data under the provisions of 40 CFR 141 Subpart M (Information Collection Rule) must use the results of the samples it collected during the last four quarters of required monitoring under former 40 CFR 141.42 (1995).
- B) A supplier that has collected four quarters of HAA5 occurrence data meeting that meets the routine monitoring sample number and location requirements for TTHM in former Section 611.680 and handling and analytical method requirements of former Section 611.685 may use that data to determine whether the requirements of this Section applies-apply.
- C) A supplier that has not collected four quarters of HAA5 occurrence data complying with either subsection (a)(2)(A) or (a)(2)(B) must do either of two things:
- i) Conduct monitoring for HAA5 meeting the routine monitoring sample number and location requirements for TTHM in former Section 611.680 and handling and analytical method requirements of former Section 611.685 to determine the HAA5 annual average and whether subsection (b) applies; or
- ii) Comply with all other provisions of this Section as if the supplier had conducted the HAA5 monitoring and the results required the supplier to comply with subsection (b).

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- 3) The supplier may request that the Agency approve a more representative annual data set than the data set ~~determined~~ under subsection (a)(1) or (a)(2) for ~~the purpose of~~ determining applicability of ~~the requirements of~~ this Section.
- 4) The Agency may require ~~that~~ a supplier ~~to~~ use a more representative annual data set than the data set ~~determined~~ under subsection (a)(1) or (a)(2) for ~~the purpose of~~ determining ~~the~~ applicability of ~~the requirements of~~ this Section.
- 5) This subsection (a)(5) corresponds with 40 CFR 141.172(a)(5), an implementing provision that no longer has operative effect. This statement maintains structural consistency with the corresponding federal rules.
- 6) Any supplier that had either a TTHM annual average  $\geq$  (greater than or equal to) 0.064 mg/l or an HAA5 annual average  $\geq$  0.048 mg/l ~~under during the period identified in~~ subsections (a)(1) and (a)(2) must comply with subsection (b).

BOARD NOTE: Former Sections 611.680 and 611.685 originally derived from 40 CFR 141.30(a), (b), and (e). USEPA removed 40 CFR 141.30 in its entirety in 2006. The Board repealed former Section 611.685 in 2007 and Section 611.680 in 2012. The references to former Sections 611.680 and 611.685 in this subsection (a) relate to ~~using use of~~ existing monitoring data collected under those provisions as they existed before their repeal.

- b) Disinfection Profiling
  - 1) Any supplier ~~complying with that meets the standards in~~ subsection (a)(6) ~~was to develop must have developed~~ a disinfection profile of its disinfection practice for a period of up to three years. The Agency ~~was to determine must have determined~~ the period of the disinfection profile, with a minimum period of one year.
  - 2) The supplier must monitor daily for a period of 12 consecutive calendar months to determine the total logs of inactivation for each day of operation, based on the ~~appropriate~~ CT<sub>99.9</sub> values in Appendix B, ~~as~~

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~~appropriate,~~ through the entire treatment plant. As a minimum, the supplier applying disinfection treatment at with a single point before the entry point of disinfectant application prior to entrance to its the distribution system was to conduct must have conducted the monitoring under in subsections (b)(2)(A) through (b)(2)(D). A supplier applying disinfection treatment at with more than one point in its distribution system was to conduct of disinfectant application must have conducted the monitoring under in subsections (b)(2)(A) through (b)(2)(D) for each disinfection segment. The supplier was to monitor must have monitored the parameters necessary to determine the total inactivation ratio, using analytical methods in Section 611.531, ~~as follows:~~

- A) The supplier was to measure the temperature of the disinfected water ~~must have been measured~~ once per day at each residual disinfectant concentration sampling point during peak hourly flow.
  - B) If the supplier uses chlorine, the supplier was to measure the pH of the disinfected water ~~must have been measured~~ once per day at each chlorine residual disinfectant concentration sampling point during peak hourly flow.
  - C) The supplier was to determine the disinfectant contact times ("T") ~~must have been determined~~ for each day during peak hourly flow.
  - D) The supplier was to measure the residual disinfectant concentrations ("C") of the water before or at the first customer and prior to each additional point of disinfection ~~must have been measured~~ each day during peak hourly flow.
- 3) This subsection (b)(3) corresponds with 40 CFR 141.172(b)(2)(A), a provision relating to implementation of the Interim Enhanced interim enhanced Surface Water Treatment Rule. This statement maintains structural consistency with the corresponding federal rule.
- 4) The supplier must calculate the total inactivation ratio ~~as follows:~~
- A) A supplier using If the supplier uses only one point of disinfectant application, ~~the system~~ may determine the total inactivation ratio for its the disinfection segment under based on either of the

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~~methods in~~ subsection (b)(4)(A)(i) or (b)(4)(A)(ii).

- i) ~~The supplier may determine~~ Determine one inactivation ratio ( $CT_{\text{calc}}/CT_{99.9}$ ) before or at the first customer during peak hourly flow; ~~or~~.
  - ii) ~~The supplier may determine~~ Determine successive  $CT_{\text{calc}}/CT_{99.9}$  values, representing sequential inactivation ratios, between the point ~~where applying of~~ disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the supplier must calculate the total inactivation ratio ( $\sum (CT_{\text{calc}}/CT_{99.9})$ ) by determining  $CT_{\text{calc}}/CT_{99.9}$  for each step in the sequence, ~~and then summing adding~~ the  $CT_{\text{calc}}/CT_{99.9}$  values ~~for each step together~~ to determine  $\sum (CT_{\text{calc}}/CT_{99.9})$ .
- B) ~~A If the supplier applying disinfection treatment at uses~~ more than one point ~~of disinfectant application~~ before the first customer, ~~the system~~ must determine the CT value of each disinfection segment during peak hourly flow immediately prior to the next point where applying of disinfectant application, ~~or for the final segment~~, before or at the first customer for the final segment, during peak hourly flow. The supplier must calculate the ( $CT_{\text{calc}}/CT_{99.9}$ ) value of each segment and ( $\sum (CT_{\text{calc}}/CT_{99.9})$ ) ~~must be calculated~~ using the method in subsection (b)(4)(A).
- C) The supplier must determine the total logs of inactivation by multiplying the value calculated under in subsection (b)(4)(A) or (b)(4)(B) by 3.0.
- 5) A supplier using that uses either chloramines or ozone for primary disinfection must also calculate the logs of inactivation for viruses using an Agency-approved a method approved by the Agency.
  - 6) The supplier must maintain retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the Agency, for review as part of sanitary surveys ~~conducted by the Agency~~ conducts.
- c) Disinfection Benchmarking

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- 1) A Any supplier that must required to develop a disinfection profile under the provisions of subsections (a) and (b) deciding and that decides to significantly make a significant change to its disinfection practice must obtain consult with the Agency approval before prior to making the such change. Certain changes are significant Significant changes to disinfection practice are the following:
  - A) A change in Changes to the point where the supplier applies of disinfection treatment;
  - B) A change in Changes to the disinfectant the supplier uses disinfectants used in its the treatment plant;
  - C) A change in Changes to the supplier's disinfection process; and
  - D) Any other modification identified by the Agency identifies as a significant change in a SEP.
- 2) Any supplier that is modifying its disinfection practice must calculate its disinfection benchmark using the procedure specified in subsections (c)(2)(A) and (c)(2)(B).
  - A) For each year of profiling data a supplier collects collected and calculates ealculated under subsection (b), the supplier must determine the lowest average monthly Giardia lamblia inactivation in each year of profiling data. The supplier must determine the average Giardia lamblia inactivation for each calendar month for each year of profiling data by dividing the sum of daily Giardia lamblia of inactivation by the number of values calculated for that month.
  - B) The disinfection benchmark is the lowest monthly average value (for a supplier systems with one year of profiling data) or average of lowest monthly average values (for a supplier systems with more than one year of profiling data) of the monthly logs of Giardia lamblia inactivation in each year of profiling data.
- 3) A supplier using that uses either chloramines or ozone for primary



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disinfection must also calculate the disinfection benchmark for viruses using an Agency-approved a method approved by the Agency.

- 4) The supplier must submit the information in subsections (c)(4)(A) through (c)(4)(C) to the Agency when seeking Agency approval as part of its consultation process.
  - A) A description of the proposed change;
  - B) The disinfection profile for Giardia lamblia (and, ~~if necessary,~~ viruses if necessary) under subsection (b) and benchmark as ~~required by~~ subsection (c)(2) requires; and
  - C) An analysis of how the proposed change will affect the current levels of disinfection.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.172.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART S: GROUNDWATER RULE

**Section 611.801 Sanitary Surveys for GWS Suppliers**

- a) A GWS supplier must provide the Agency, at the Agency's request, any existing information that will enable the Agency to conduct a sanitary survey.
- b) For the purposes of this Subpart S, a "sanitary survey", as conducted by the Agency, includes an onsite review of the delineated WHPAs (identifying sources of contamination within the WHPAs and evaluations of the hydrogeologic sensitivity of the delineated WHPAs conducted under source water assessments or utilizing other relevant information if where available), facilities, equipment, operation, maintenance, and monitoring compliance of a PWSpublic water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.
- c) The sanitary survey must include an evaluation of the applicable components listed in subsections (c)(1) through (c)(8):

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- 1) Source;
  - 2) Treatment including any corrosion control treatment and water quality parameters;
  - 3) Distribution system;
  - 4) Finished water storage;
  - 5) Pumps, pump facilities, and controls;
  - 6) Monitoring, reporting, and data verification;
  - 7) System management and operation; and
  - 8) Operator compliance with Agency requirements.
- d) The Agency must repeat the sanitary survey as follows:
- 1) The Agency must conduct a sanitary survey that addresses the eight sanitary survey components listed in subsection (c) no less frequently than every three years for a CWS supplier, except as provided in subsection (d)(3), and every five years for a non-CWS supplier. The Agency may conduct more frequent sanitary surveys for any supplier. The sanitary survey must include an evaluation of each of the elements set forth in subsection (c), as applicable.
  - 2) The Agency may use a phased review process to meet the requirements of subsection (d)(1) if all the applicable elements of subsection (c) are evaluated within the required interval.
  - 3) The Agency may conduct sanitary surveys once every five years for CWS~~community water systems~~ under any of the following circumstances:
    - A) If the system either provides at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log inactivation and removal) before or at the first customer for all its groundwater sources; or

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- B) If the supplier has an outstanding performance record, as determined by the Agency and documented in previous sanitary surveys, and the supplier had no history of total coliform MCL or monitoring violations under former Sections 611.521 through 611.527 since the last sanitary survey.
- 4) This subsection (d)(4) corresponds with 40 CFR 142.16(o)(2)(iv), which imposes requirements for describing the elements of the State's regulatory system. This statement maintains structural consistency with the corresponding federal provision.
- 5) The Agency must provide a GWS supplier with written notice ~~in~~<sup>by</sup> a SEP that describes any significant deficiency ~~that~~<sup>which</sup> it has found no later than 30 days after the Agency has identified the significant deficiency. The notice may specify corrective actions and deadlines for completion of corrective actions. The Agency may provide the written notice at the time of the sanitary survey.

BOARD NOTE: Subsections (a) through (c) ~~derive~~<sup>are derived</sup> from 40 CFR 141.401. Subsection (d) ~~derives~~<sup>is derived</sup> from 40 CFR 142.16(o)(2).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.802 Groundwater Source Microbial Monitoring and Analytical Methods**

- a) Triggered Source Water Monitoring
- 1) General Requirements. A GWS supplier must conduct triggered source water monitoring if the following conditions exist.
- A) The supplier does not provide at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for each groundwater source.
- B) This subsection (a)(1)(B) corresponds with 40 CFR 141.802(a)(1)(ii), which has no operative effect after a past

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implementation date. This statement maintains structural consistency with the federal regulations.

- C) The system is notified that a sample collected under Sections 611.1054 through 611.1057 is total coliform-positive and the sample is not invalidated under Section 611.1053(c).
- 2) Sampling Requirements. A GWS supplier must collect, within 24 hours after notification of the total coliform-positive sample, at least one groundwater source sample from each groundwater source in use at the time the total coliform-positive sample was collected under Sections 611.1054 through 611.1057, except as provided in subsection (a)(2)(B).
- A) The Agency may ~~issue, by~~ a SEP ~~extending, extend~~ the 24-hour time limit on a case-by-case basis if it determines that the supplier cannot collect the groundwater source water sample within 24 hours due to circumstances beyond the supplier's control. In the case of an extension, the Agency must specify how much time the supplier has to collect the sample.
- B) If approved by the Agency, a supplier with more than one groundwater source may meet the requirements of this subsection (a)(2) by sampling a representative groundwater source or sources. If directed by the Agency ~~in by~~ a SEP, the supplier must submit for Agency approval a triggered source water monitoring plan that identifies one or more groundwater sources that are representative of each monitoring site in the system's sample siting plan under Section 611.1053 and that the system intends to use for representative sampling under this subsection (a).
- C) This subsection (a)(2)(C) corresponds with 40 CFR 141.802(a)(1)(ii), a now-obsolete implementing provision. This statement maintains structural consistency with the federal regulations.
- D) A GWS supplier ~~serving that serves~~ 1,000 or fewer people may use a repeat sample collected from a groundwater source to meet both the requirements of Subpart AA and to satisfy the monitoring requirements of subsection (a)(2) for that groundwater source only if the Agency ~~issues, by~~ a SEP ~~approving, approves~~ the use of E.

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coli as a fecal indicator for source water monitoring under this subsection (a) and approves the use of a single sample for meeting both the triggered source water monitoring requirements in this subsection (a) and the repeat monitoring requirements in Section 611.1058. If the repeat sample collected from the groundwater source is E. coli-positive, the system must comply with subsection (a)(3).

- 3) Additional Requirements. If the Agency does not require corrective action under Section 611.803(a)(2) for a fecal indicator-positive source water sample collected under subsection (a)(2) that is not invalidated under subsection (d), the ~~supplier~~ system must collect five additional source water samples from the same source within 24 hours after being notified of the fecal indicator-positive sample.
- 4) Consecutive and Wholesale Systems
  - A) In addition to the other requirements of this subsection (a), a consecutive GWS supplier that has a total coliform-positive sample collected under Sections 611.1054 through 611.1057, must notify the wholesale systems within 24 hours after being notified of the total coliform-positive sample.
  - B) In addition to the other requirements of this subsection (a), a wholesale GWS supplier must comply with the following requirements:
    - i) A wholesale GWS supplier that receives notice from a consecutive system it serves that a sample collected under Sections 611.1054 through 611.1057, is total coliform-positive must, within 24 hours after being notified, collect a sample from its groundwater sources under subsection (a)(2) and analyze it for a fecal indicator under subsection (c).
    - ii) If the sample collected under subsection (a)(4)(B)(i) is fecal indicator-positive, the wholesale GWS supplier must notify all consecutive systems served by that groundwater source of the fecal indicator source water positive within 24 hours

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after being notified of the groundwater source sample monitoring result and must meet the requirements of subsection (a)(3).

- 5) Exceptions to the Triggered Source Water Monitoring Requirements. A GWS supplier is not required to comply with the source water monitoring requirements of subsection (a) if either of the following conditions exists:
  - A) The Agency ~~issues, determines, and documents in writing, by~~ a SEP ~~determining and documenting;~~ that ~~a distribution system deficiency caused~~ the total coliform-positive sample collected under Sections 611.1054 through 611.1057; ~~is caused by a distribution system deficiency;~~ or
  - B) The total coliform-positive sample collected under Sections 611.1054 through 611.1057; is collected at a location that meets Agency criteria for distribution system conditions that will cause total coliform-positive samples.
- b) Assessment Source Water Monitoring. If ~~directed by~~ the Agency ~~directs in~~ by a SEP, a GWS supplier must conduct assessment source water monitoring that meets Agency-determined requirements for such monitoring. A GWS supplier conducting assessment source water monitoring may use a triggered source water sample collected under subsection (a)(2) to meet the requirements of subsection (b). Agency-determined assessment source water monitoring requirements may include the following:
  - 1) Collection of a total of 12 groundwater source samples that represent each month the system provides groundwater to the public;
  - 2) Collection of samples from each well, unless the system obtains written Agency approval to conduct monitoring at one or more wells within the GWS that are representative of multiple wells used by that system and ~~that which~~ draw water from the same hydrogeologic setting;
  - 3) Collection of a standard sample volume of at least 100 ml for fecal indicator analysis, regardless of the fecal indicator or analytical method used;

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- 4) Analysis of all groundwater source samples using one of the analytical methods listed in subsection (c)(2) for the presence of E. coli, enterococci, or coliphage;
  - 5) Collection of groundwater source samples at a location prior to any treatment of the groundwater source unless the Agency approves a sampling location after treatment; and
  - 6) Collection of groundwater source samples at the well itself, unless the system's configuration does not allow for sampling at the well itself and the Agency approves in a SEP an alternate sampling location ~~by a SEP~~ that is representative of the water quality of that well.
- c) Analytical Methods
- 1) A GWS supplier subject to the source water monitoring requirements of subsection (a) must collect a standard sample volume of at least 100 ml for fecal indicator analysis, regardless of the fecal indicator or analytical method used.
  - 2) A GWS supplier must analyze all groundwater source samples collected under subsection (a) using one of the analytical methods listed in subsections (c)(2)(A) through (c)(2)(C), each incorporated by reference in Section 611.102, or alternative methods approved by the Agency under Section 611.480, subject to the limitations of subsection (c)(2)(D), for the presence of E. coli, enterococci, or coliphage:
    - A) E. coli. Enzyme Substrate Technique
      - i) Colilert<sup>®</sup>. SM 9223 B (97), SM 9223 B (04), or SM 9223 B (16).
      - ii) Colisure<sup>®</sup>. SM 9223 B (97), SM 9223 B (04), or SM 9223 B (16).
      - iii) Membrane Filter Method with MI Agar. USEPA 1604 (02).
      - iv) E\*Colite (98).

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- v) EC-MUG. SM 9221 F (94), SM 9221 F (06), or SM 9221 F (14).
- vi) NA-MUG. SM 9222 G (97) (20<sup>th</sup> ed. only) or SM 9222 I (15).
- vii) Colilert<sup>®</sup>-18. SM 9223 B (97), SM 9223 B (04), or SM 9223 B (16).
- viii) Readycult<sup>®</sup> (07).
- ix) Modified Colitag<sup>™</sup> (09) or Modified Colitag<sup>™</sup> (20).
- x) Chromocult<sup>®</sup> (00).
- xi) Tecta (14) or Tecta (17).
- xii) RAPID'E. coli (20).

BOARD NOTE: EC-MUG (SM 9221 F (94) (20<sup>th</sup> ed. only)) or NA-MUG (SM 9222 G (97) (20<sup>th</sup> ed. only)), both incorporated by reference in Section 611.102, can be used for E. coli testing step, as described in 40 CFR 141.21(f)(6)(i) or (f)(6)(ii), incorporated by reference in Section 611.102, after use of SM 9221 B (93), SM 9221 B (94), SM 9221 B (99), SM 9221 B (06), SM 9221 D (93), SM 9221 D (94), SM 9221 D (99), SM 9221 D (06), SM 9222 B (91), SM 9222 B (94), SM 9222 B (97), SM 9222 C (91), SM 9222 C (94), or SM 9222 C (97).

- B) E. coli. Fermentation Technique
  - i) Hach 10029 (99) (m-ColiBlue24<sup>®</sup>).
  - ii) SM 9222 J (15).
- C) Enterococci



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- i) Multiple-Tube Technique. SM 9230 B (93) (20<sup>th</sup> ed. only), SM 9230 B (04), SM 9230 C (93) (20<sup>th</sup> ed. only), SM 9230 C (13), or USEPA 1600 (02).

BOARD NOTE: The holding time and temperature for groundwater samples are specified in subsection (c)(2)(D), rather than as specified in Section 8 of USEPA 1600 (02).

- ii) Fluorogenic Substrate Enterococcus Test (using Enterolert). Enterolert (96) or SM 9230 D (13).

BOARD NOTE: Medium is available through IDEXX Laboratories, Inc., at the address set forth in Section 611.102(b). Preparation and use of the medium must be as set forth in the article that embodies the method as incorporated by reference in Section 611.102(b).

D) Coliphage

- i) Two-Step Enrichment Presence-Absence Procedure. USEPA 1601 (01) or Charm Fast Phage (12).
- ii) Single Agar Layer Procedure. USEPA 1602 (01).

- E) Limitation on Methods Use. The time from sample collection to initiation of analysis may not exceed 30 hours. The GWS supplier is encouraged but is not required to hold samples below 10° C during transit.

d) Invalidation of a Fecal Indicator-Positive Groundwater Source Sample

- 1) A GWS supplier may obtain Agency invalidation of a fecal indicator-positive groundwater source sample collected under subsection (a) only under either of the following conditions:
  - A) The supplier provides the Agency with written notice from the laboratory that improper sample analysis occurred; or

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- B) The Agency ~~issues a SEP determining and documenting determines and documents in writing by a SEP that there is~~ substantial evidence that a fecal indicator-positive groundwater source sample is not related to source water quality.
- 2) If the Agency invalidates a fecal indicator-positive groundwater source sample, the GWS supplier must collect another source water sample under subsection (a) within 24 hours after being notified by the Agency of its invalidation decision, and the supplier must have it analyzed for the same fecal indicator using the analytical methods in subsection (c). The Agency may extend the 24-hour time limit on a case-by-case basis if the supplier cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Agency must specify how much time the system has to collect the sample.
- e) Sampling Location
- 1) Any groundwater source sample required under subsection (a) must be collected at a location prior to any treatment of the groundwater source unless the Agency approves a sampling location after treatment.
- 2) If the supplier's system configuration does not allow for sampling at the well itself, it may collect a sample at an Agency-approved location to meet the requirements of subsection (a) if the sample is representative of the water quality of that well.
- f) New Sources. If ~~directed by~~ the Agency ~~directs in by~~ a SEP, a GWS supplier ~~placing that places~~ a new groundwater source into service must conduct assessment source water monitoring under subsection (b). If ~~directed by~~ the SEP ~~directs~~, the ~~supplier's system~~ must begin monitoring before the groundwater source is used to provide water to the public.
- g) Public Notification. A GWS supplier with a groundwater source sample collected under subsection (a) or (b) that is fecal indicator-positive and ~~that which~~ is not invalidated under subsection (d), including a consecutive system supplier served by the groundwater source, must conduct public notification under Section 611.902.

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- h) Monitoring Violations. A failure to meet the requirements of subsections (a) through (f) is a monitoring violation that requires the GWS supplier to provide public notification under Section 611.904.

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.402 and appendix A to subpart C of 40 CFR 141. The Board ~~did~~has not separately ~~list~~listed the following approved alternative methods from Standard Methods Online that are the same version as a method ~~appearing that appears~~ in a printed edition of Standard Methods. ~~Using~~Use of the Standard Methods Online copy is acceptable.

Standard Methods Online, Method 9221 F-06 appears in the 22<sup>nd</sup> edition as Method 9221 F. ~~This In this Section, this~~ appears in this Section as SM 9221 F (06).

Standard Methods Online, Method 9222 G-97 appears in the 20<sup>th</sup> and 21<sup>st</sup> editions as Method 9222 G. ~~This In this Section, this~~ appears in this Section as SM 9222 G (97).

Standard Methods Online, Method 9223 B-97 appears in the 20<sup>th</sup> and 21<sup>st</sup> editions as Method 9223 B. ~~This In this Section, this~~ appears in this Section as SM 9223 B (97).

Standard Methods Online, Method 9223 B-04 appears in the 22<sup>nd</sup> edition as Method 9223 B. ~~This In this Section, this~~ appears in this Section as SM 9223 B (04).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART T: REPORTING AND RECORDKEEPING

**Section 611.840 Reporting**

- a) Except ~~as this Part specifies~~where a shorter period ~~is specified in this Part~~, a supplier must report to the Agency the results of any test measurement or analysis ~~required by this Part~~ requires within the ~~sooner of specified~~following times; ~~whichever is shortest~~:
- 1) WithinThe first ten days ~~after~~following the month when the supplier receives~~in which~~ the result ~~is received~~; or

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- 2) ~~Within The first~~ ten days ~~after following~~ the end of the ~~required~~ monitoring period ~~the Agency specifies in, as specified by~~ a SEP.
- b) Except ~~as this Part specifies where~~ a different reporting period ~~is specified in this Part, at~~ the supplier must report to the Agency within 48 hours any failure to comply with any provision (including failure to comply with monitoring requirements) of this Part.
- c) The supplier ~~needs is~~ not ~~required to~~ report analytical results to the Agency ~~if in cases where~~ an Agency laboratory performs the analysis.
- d) Notice to the Agency
- 1) The supplier must certify to the Agency fully complying with public notification under Subpart V; within ten days after completing ~~the public notification requirements under Subpart V for~~ the initial public notice and any repeat public notices, ~~must submit to the Agency a certification that it has fully complied with the public notification regulations. For Tier 2 and 3 public notices, the~~ The PWS must include with this certification a representative copy of each type of notice the Agency distributed, published, posted, or made available to the persons served ~~by the supplier~~ or to the media.
- 2) For a Tier 1 public notice for exceeding the lead action level, the supplier must provide a copy of any Tier 1 public notice to USEPA and the Agency as soon as practicable but no later than 24 hours after the supplier learns of the exceedance.
- e) The supplier must submit to the Agency within the time ~~the Agency states~~ stated in ~~at~~ the request copies of any records ~~required to be maintained under~~ Section 611.860 requires or copies of any existing documents ~~then in existence that the Agency is entitled to inspect under the authority of~~ Section 4 of the Act [415 ILCS 5/4] entitles the Agency to inspect.

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.31 ~~(2002).~~

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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## SUBPART U: CONSUMER CONFIDENCE REPORTS

**Section 611.883 Content of the Reports**

- a) Each CWS must provide to its customers an annual report ~~containing that contains~~ the information ~~specified in~~ this Section and Section 611.884 ~~specify~~.
- b) Information on the Source of the Water ~~the Supplier Delivers~~ ~~Delivered~~
  - 1) Each report must identify the sources of the water ~~the CWS delivers~~ ~~delivered by the CWS by~~ providing certain information ~~on the following~~:
    - A) The type of the water (i.e., e.g., surface water, groundwater, or groundwater under the direct influence of surface water); and
    - B) The commonly used name (if any) and location of the source body (or bodies) of water.
  - 2) If ~~the supplier has~~ a complete source water assessment ~~has been completed~~, the report must notify consumers of the availability of this assessment information and ~~how the means~~ to obtain it. In addition, ~~the supplier should~~ ~~systems are encouraged to~~ highlight in the report significant sources of contamination in the source water area if ~~the supplier they have~~ readily has ~~that available~~ information. ~~If the supplier~~ ~~Where a system has~~ received ~~the a~~ source water assessment from the Agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language ~~provided by~~ the Agency provides or ~~as written by~~ the supplier writes.
- c) Definitions
  - 1) Each report must include ~~two~~ ~~the following~~ definitions:
    - A) Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which USEPA determines ~~there is~~ no known or expected risk to health exists. MCLGs allow for a margin of safety.

BOARD NOTE: Although an MCLG is not an NPDWR that the

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Board must include in the Illinois SDWA regulations, USEPA mandates using~~the use of~~ this definition ~~is mandatory where the term "MCLG" is defined.~~

- B) Maximum Contaminant Level or MCL: The highest level of a contaminant that USEPA allows~~is allowed~~ in drinking water. USEPA sets MCLs ~~are set~~ as close to the MCLGs as feasible using the best available treatment technology.
- 2) A ~~report for a~~ CWS operating under relief from an NPDWR issued under Section 611.111, 611.112, 611.130, or 611.131 must include the following definition in its report: "Variances, Adjusted Standards, and Site-specific Rules: State permission not to meet an MCL or a treatment technique under certain conditions."
- 3) A report containing~~that contains~~ data on contaminants that USEPA regulates using any of certain~~the following~~ terms must include the applicable definitions:
- A) Treatment technique: A required process for reducing~~intended to reduce~~ the concentration~~level~~ of a contaminant in drinking water.
- B) Action level: The concentration of a contaminant above which a supplier must follow~~that, if exceeded, triggers~~ treatment or other requirements ~~that a water system must follow.~~
- C) Maximum residual disinfectant level goal or MRDLG: The concentration~~level~~ of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of using~~the use of~~ disinfectants to control microbial contaminants.
- BOARD NOTE: Although an MRDLG is not an NPDWR that the Board must include in the Illinois SDWA regulations, USEPA mandates using~~the use of~~ this definition if~~is mandatory where the report uses the~~ term "MRDLG" ~~is defined.~~
- D) Maximum residual disinfectant level or MRDL: The highest concentration~~level~~ of a disinfectant USEPA allows~~allowed~~ in

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drinking water. There is convincing evidence that ~~adding~~ addition ~~of~~ a disinfectant is necessary ~~to~~ for control ~~of~~ microbial contaminants.

- 4) A report ~~containing that contains~~ information ~~about~~ regarding a Level 1 or Level 2 assessment ~~required~~ under Subpart AA requires must include the applicable ~~definition of the following definitions:~~
- A) "Level 1 assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system."
- B) "Level 2 assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation ~~has~~ occurred or why monitoring found total coliform bacteria ~~have been found~~ in our water system on multiple occasions."
- d) Information on Detected Contaminants
- 1) This subsection (d) specifies the ~~requirements for~~ information a supplier must include to be included in each report for contaminants subject to mandatory monitoring (except Cryptosporidium): ~~It applies to the following:~~
- A) Contaminants subject to an MCL, action level, MRDL, or treatment technique (regulated contaminants); and
- B) Contaminants for which monitoring is required by USEPA under 40 CFR 141.40 (unregulated contaminants); ~~and~~
- ~~C) Disinfection byproducts or microbial contaminants for which monitoring is required by Section 611.382 and Subpart L, except as provided under subsection (e)(1), and which are detected in the finished water.~~
- 2) The ~~report must display data relating to~~ these contaminants ~~must be displayed~~ in one table or in several adjacent tables. The CWS must separately display any ~~Any~~ additional monitoring results ~~it that a CWS~~

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chooses to include in its report ~~must be displayed separately.~~

- 3) The ~~supplier must derive the~~ data ~~in the report~~~~must have been derived~~ from data ~~it~~ collected to comply with monitoring and analytical requirements during ~~each~~ calendar year. ~~If the Agency allows a supplier to monitor for regulated contaminants less frequently than annually, the tables must include the date and results of the most recent sampling, and the report must include a brief statement indicating that the data in the report is from the most recent testing done under the regulations. The supplier must not include data older than five years, 1998 for the first report and must be derived from the data collected in subsequent calendar years, except that the following requirements also apply:~~
- A) ~~Where a system is allowed to monitor for regulated contaminants less often than once a year, the tables must include the date and results of the most recent sampling, and the report must include a brief statement indicating that the data presented in the report is from the most recent testing done in accordance with the regulations. No data older than five years need be included.~~
  - B) ~~Results of monitoring in compliance with Section 611.382 and Subpart L need only be included for five years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.~~
- 4) For ~~each~~ detected regulated ~~contaminant~~~~contaminants~~ (listed in Appendix A), the tables must contain ~~specific information~~~~the following:~~
- A) The MCL for ~~the~~~~that~~ contaminant expressed as a number equal to or greater than 1.0 (as ~~provided in~~ Appendix A ~~provides~~);
  - B) The federal Maximum Contaminant Level Goal (MCLG) for that contaminant expressed in the same units as the MCL;
  - C) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level ~~for the, applicable to that~~ contaminant, and the report must include the ~~applicable of the~~ definitions for treatment technique or



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action level ~~that, as appropriate, specified in~~ subsection (c)(3) ~~specifies;~~

- D) For contaminants subject to an MCL, except turbidity, total coliforms, fecal coliforms, and E. coli, the highest contaminant level ~~the supplier~~ used to determine compliance with ~~the applicable an-NPDWR;~~ and the range of detected levels, ~~as follows:~~
- i) When ~~the supplier determines~~ compliance with the MCL ~~is determined~~ annually or less frequently: the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.
  - ii) When ~~the supplier determines~~ compliance with the MCL ~~is determined~~ by calculating a running annual average of all samples taken at a monitoring location: the highest average of ~~all any of the~~ monitoring locations and the range of all monitoring locations expressed in the same units as the MCL. For ~~the MCLs for~~ TTHM and HAA5 ~~MCLs~~ in Section ~~611.312(b)611.312(b)(2)~~, the supplier must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all monitoring locations expressed in the same units as the MCL. If results from more than one location exceed the TTHM or HAA5 MCL, the supplier must include the locational running annual average for each location ~~having whose~~ results ~~exceeding exceed~~ the MCL.
  - iii) When ~~the supplier determines~~ compliance with the MCL ~~is determined~~ on a system-wide basis by calculating a running annual average of all samples at all monitoring locations: the average and range of ~~detected concentrations detection~~ expressed in the same units as the MCL. The supplier ~~mustis required to~~ include individual sample results for the IDSE ~~the supplier~~ conducted under Subpart W when determining the range of TTHM and HAA5 results to ~~reportbe reported~~ in ~~its~~ the annual consumer confidence report for the calendar year ~~when the supplier took that~~ the IDSE samples ~~were taken;~~

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BOARD NOTE ~~to subsection (d)(4)(D):~~ If a rule allows ~~When rounding of results to determine compliance with an~~ the MCL is allowed by the regulations, the supplier should round before ~~rounding should be done prior to~~ multiplying the results by the applicable ~~factor listed~~ in Appendix A; ~~derived from 40 CFR 153.~~

- E) For turbidity, ~~the following:~~
- i) ~~Corresponding 40 CFR 141.153(d)(4)(v)(A) relates to an MCL for turbidity applicable to unfiltered systems, which do not exist in Illinois. This statement maintains structural consistency with the federal rules.~~ When it is reported under Section 611.560: the highest average monthly value.
  - ii) ~~If the supplier reports~~ When it is reported under ~~the requirements of~~ Section 611.211(b): the highest monthly value. The report must ~~explain~~ include an explanation of the reasons for measuring turbidity.
  - iii) ~~If the supplier reports~~ When it is reported under Section 611.250, 611.743, or 611.955(b): the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits ~~specified in~~ Section 611.250, 611.743, or 611.955(b) specifies for the filtration technology ~~the supplier uses~~ being used. The report must ~~explain~~ include an explanation of the reasons for measuring turbidity;
- F) For lead and copper, ~~the following:~~ the 90<sup>th</sup> percentile concentration value of the most recent rounds round of sampling ~~and~~ the number of sampling sites exceeding the action level, and the range of tap sampling results;
- G) This subsection (d)(4)(G) corresponds with 40 CFR 141.153(d)(4)(vii), which has no operative effect after a past implementation date. This statement maintains structural consistency with the federal regulations;

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- H) This subsection (d)(4)(H) corresponds with 40 CFR 141.153(d)(4)(viii), a now-obsolete implementing provision. This statement maintains structural consistency with the federal regulations;
- I) The likely sources of detected contaminants to the best of the supplier's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and must be used when available to the supplier. If the supplier lacks specific information on the likely source, the report must include one or more of the typical sources for that contaminant listed in Appendix G that are most applicable to the CWS; ~~and~~
- J) For E. coli analytical results under Subpart AA, the total number of positive samples;:-
- K) The report must state that the supplier inventoried its service lines (including if only a statement that the supplier serves no lead service lines) and instruct how to access the service line inventory; and
- L) The report must notify consumers that complete lead tap sampling data are available for review and must inform how to access the data.
- 5) If a CWS distributes water to its customers from multiple hydraulically independent distribution systems ~~that are~~ fed by different raw water sources, the table must contain a separate column for each service area, and the report must identify each separate distribution system. Alternatively, a CWS may produce separate reports tailored to include data for each service area.
- 6) The tables must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques, and the report must contain a clear and readily understandable explanation of the violation, including specific information~~the following~~: the length of the violation, the potential adverse health effects, and actions ~~taken by~~ the CWS took to address the violation. To describe the potential health effects, the CWS must use the relevant

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language ~~from~~ Appendix A.

- 7) For detected unregulated contaminants for which USEPA requires monitoring ~~is required by USEPA~~ under 40 CFR 141.40 (except Cryptosporidium), the tables must contain the average and range at which the supplier detected the contaminant ~~was detected~~. The report may briefly explain ~~include a brief explanation of~~ the reasons for monitoring for unregulated contaminants.
- e) Information on Cryptosporidium, radon, and other contaminants, ~~as follows~~:
- 1) If the CWS monitored ~~has performed any monitoring~~ for Cryptosporidium, including monitoring underperformed to satisfy the requirements of Subpart L, and the monitoring that indicates the possible presence of that Cryptosporidium ~~may be present~~ in the supplier's source water or the finished water, the report must include specific information ~~the following~~:
    - A) It must summarize ~~A summary of~~ the monitoring results ~~of the monitoring~~; and
    - B) It must explain ~~An explanation of~~ the results' significance ~~of the results~~.
  - 2) If the CWS monitored ~~has performed any monitoring~~ for radon, and the monitoring that indicates the possible presence of that radon ~~may be present~~ in the supplier's finished water, the report must include specific information ~~the following~~:
    - A) The monitoring results ~~of the monitoring~~; and
    - B) It must explain ~~An explanation of~~ the results' significance ~~of the results~~.
  - 3) If the CWS conducted ~~has performed~~ additional monitoring indicating that ~~indicates~~ the presence of other contaminants in the supplier's finished water, the report must include specific information ~~the following~~:
    - A) The monitoring results ~~of the monitoring~~; and

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- B) ~~It must explain~~An explanation of the results' significance ~~of the results~~ noting ~~the existence of~~ any pertinent health advisory or proposed regulation.
- f) ~~Complying~~Compliance with an NPDWR. In addition to the ~~information requirements of~~ subsection (d)(6) requires, the report must note any of specific violations in subsections (f)(1) through (f)(7) occurring violation that occurred during the year ~~covered by~~ the report ~~covers of a requirement listed below~~, and ~~clearly include a clear~~ and readily understandably explain~~understandable explanation of~~ the violation, any potential adverse health effects, and the steps the CWS ~~took has taken~~ to correct the violation.
- 1) ~~Failure in monitoring or~~Monitoring and reporting ~~of~~ compliance data.
  - 2) Filtration and Disinfection ~~Under Prescribed by~~ Subpart B. For ~~a CWS failing~~CWSs that have failed to install adequate filtration or disinfection equipment or processes, or ~~having filtration or disinfection have had a failure of such~~ equipment or processes fail, causing that constitutes a violation, the report must include ~~specific~~the following language to explain as part of the explanation of potential adverse health effects: "Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."
  - 3) Lead and Copper Control Requirements ~~Under Prescribed by~~ Subpart G. For ~~a supplier failing~~systems that fail to take one or more actions ~~under prescribed by~~ Section 611.350(d), 611.351, 611.352, 611.353, or 611.354, the report must include the applicable language ~~from of~~ Appendix A for lead, copper, or both.
  - 4) Treatment Techniques for Acrylamide and Epichlorohydrin ~~Under Prescribed by~~ Section 611.296. For ~~a supplier violating~~systems that violate the requirements of Section 611.296, the report must include the ~~applicable~~relevant language from Appendix A.
  - 5) ~~A supplier failing to maintain required~~Recordkeeping of compliance data records.
  - 6) ~~A supplier not complying with special~~Special monitoring requirements

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~~underprescribed by~~ Section 611.630.

- 7) ~~A supplier violating~~~~Violation of~~ the terms of a variance, adjusted standard, site-specific rule, or administrative or judicial order.
  
- g) Variances, Adjusted Standards, and Site-Specific Rules. If a ~~supplier operates~~~~system is operating~~ under the terms of a variance, adjusted standard, or site-specific rule ~~the Board~~ issued under Section 611.111, 611.112, or 611.131, the report must contain ~~certain information~~~~the following~~:
  - 1) ~~It must explain~~~~An explanation of~~ the reasons for the variance, adjusted standard, or site-specific rule;
  - 2) ~~It must state when the Board issued~~~~The date on which~~ the variance, adjusted standard, or site-specific rule ~~was issued~~;
  - 3) ~~It must include a~~~~A~~ brief status report on the steps the CWS is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance, adjusted standard, or site-specific rule; and
  - 4) ~~It must include a~~~~A~~ notice of any opportunity for public input in ~~any~~~~the~~ review, or renewal, of the variance, adjusted standard, or site-specific rule.
  
- h) Additional Information
  - 1) The report must ~~briefly explain about~~~~contain a brief explanation regarding~~ contaminants that ~~one~~ may reasonably ~~expect~~~~be expected~~ to ~~find~~~~be found~~ in drinking water, including bottled water. This ~~explanation~~ may include the language ~~from~~~~of~~ subsections (h)(1)(A) through (h)(1)(C), or ~~the CWS~~~~CWSs~~ may use ~~its~~~~their~~ own comparable language. The report also must include the language ~~from~~~~of~~ subsection (h)(1)(D).
    - A) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material. ~~The water, and~~ can ~~also~~ pick up substances resulting from the presence of animals or from human activity.

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- B) ~~Source~~Contaminants that may be present in source water may include ~~any of several contaminants~~the following:
- i) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
  - ii) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
  - iii) Pesticides and herbicides, which may come from a variety of sources, ~~like such as~~ agriculture, urban stormwater runoff, ~~and~~ residential uses;
  - iv) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are ~~products and~~ byproducts of industrial processes and petroleum production, and ~~which~~ can also come from gas stations, urban stormwater runoff, ~~and~~ septic systems; and
  - v) Radioactive contaminants, which can be naturally-occurring or ~~be~~ the result of oil and gas production and mining activities.
- C) In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit the amount of certain contaminants in water ~~PWSs provide~~provided by public water systems. United States Food and Drug Administration (USFDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.
- D) ~~One may reasonably expect drinking~~Drinking water, including bottled water, ~~may reasonably be expected~~to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects ~~is~~

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~~available from~~ ~~can be obtained by calling~~ the USEPA Safe Drinking Water Hotline (800-426-4791) ~~or USEPA's Safe Drinking Water Information webpage (www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information).~~

- 2) The report must include ~~at the~~ telephone number ~~for~~ ~~of~~ the CWS's owner, operator, or designee ~~of the CWS~~ as a source of additional information ~~about~~ ~~concerning~~ the report.
- 3) In communities with a large proportion of non-English speaking residents, as ~~determined by~~ the Agency determines, the report must contain information in the appropriate languages regarding the importance of the report or contain a telephone number or address where ~~such~~ residents may contact the ~~supplier for~~ ~~system to obtain~~ a translated copy of the report or assistance in the appropriate language.
- 4) The report must ~~inform~~ ~~include information~~ about opportunities for public participation in decisions potentially affecting water ~~that may affect the quality of the water~~.
- 5) The CWS may include ~~any~~ ~~such~~ additional information ~~as~~ it deems necessary for public education that is consistent with, and does not ~~detract~~ ~~detracting~~ from, the purpose of the report.
- 6) Suppliers That Must ~~Required to~~ Comply with Subpart S
  - A) Any GWS supplier ~~receiving~~ ~~that receives~~ written notice from the Agency of a significant deficiency must inform its customers of any significant deficiency still uncorrected at the time of the next report. Any GWS supplier receiving ~~or which receives~~ notice from a laboratory of a fecal indicator-positive groundwater source sample that the Agency does ~~is~~ not ~~invalidate~~ ~~invalidated by the Agency~~ under Section 611.802(d) must inform its customers of ~~the any significant deficiency that is uncorrected at the time of the next report or of any~~ fecal indicator-positive groundwater source sample in the next report. The supplier must continue to annually inform the public ~~annually~~ until the Agency issues, ~~by~~ a SEP determining the supplier corrected the, ~~determines that~~ particular significant deficiency ~~is corrected~~ or addressed the fecal



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contamination in the groundwater source ~~is addressed~~ under Section 611.803(a). Each report must include ~~specific~~ the following information:

- i) The nature of the particular significant deficiency or the source of the fecal contamination (if the supplier knows the source ~~is known~~) and the date the Agency identified the significant deficiency ~~was identified by the Agency~~ or the dates of the fecal indicator-positive groundwater source samples;
  - ii) Whether or not the supplier has addressed the fecal contamination in the groundwater source ~~has been addressed~~ under Section 611.803(a) and the date the supplier did so of such action;
  - iii) For each significant deficiency or fecal contamination in the groundwater source that the supplier has not ~~been~~ addressed under Section 611.803(a), the Agency-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures the supplier completed; and
  - iv) If the ~~supplier~~ system receives notice of a fecal indicator-positive groundwater source sample that the Agency does ~~is~~ not ~~invalidate~~ invalidated by the Agency under Section 611.802(d), the potential health effects using the pertinent health effects language ~~from~~ of Appendix A.
- B) If ~~directed by~~ the Agency issues ~~by~~ a SEP directing a supplier to do so, a supplier with significant deficiencies that the supplier have been corrected before issuing the next report ~~is issued~~ must inform its customers under subsection (h)(7)(A)(iv) of the significant deficiency, how the supplier corrected the deficiency ~~was corrected~~, and the date the supplier corrected the deficiency of correction under subsection (h)(6)(A).
- 7) Suppliers That Must ~~Required to~~ Comply with Subpart AA

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- A) Any supplier ~~that must~~~~required to~~ comply with the Level 1 assessment requirement or a Level 2 assessment requirement that is not due to an E. coli MCL violation must include in the report the text found in subsections (h)(7)(A)(i) and (h)(7)(A)(ii) or (h)(7)(A)(i) and (h)(7)(A)(iii), as appropriate, filling in the blanks accordingly and the text found in subsection (h)(7)(A)(iv), if appropriate.
- i) "Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments."
- ii) "During the past year we were required to conduct [insert number of Level 1 assessments] Level 1 assessment(s). [insert number of Level 1 assessments] Level 1 assessment(s) were completed. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions."
- iii) "During the past year [insert number of Level 2 assessments] Level 2 assessments were required to be completed for our water system. [insert number of Level 2 assessments] Level 2 assessments were completed. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions."
- iv) Any supplier that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as

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appropriate: "During the past year we failed to conduct all of the required assessment(s)." or "During the past year we failed to correct all identified defects that were found during the assessment."

- B) Any supplier ~~that must~~~~required to~~ conduct a Level 2 assessment due to an E. coli MCL violation must include in the report the text found in subsections (h)(7)(B)(i) and (h)(7)(B)(ii), filling in the blanks accordingly and the appropriate alternative text found in subsection (h)(7)(B)(ii), if appropriate.
- i) "E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments."
- ii) "We were required to complete a Level 2 assessment because we found E. coli in our water system. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions."
- iii) Any supplier that has failed to complete the required assessment or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate: "We failed to conduct the required assessment." or "We failed to correct all sanitary defects that were identified during the assessment that we conducted."

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- C) If a supplier detects E. coli and has violated the E. coli MCL, in addition to completing the table, as ~~required in~~ subsection (d)(4) ~~requires~~, the supplier must include one or more of ~~specific the following~~ statements ~~best describing the to describe any noncompliance, as applicable~~:
- i) "We had an E. coli-positive repeat sample following a total coliform-positive routine sample."
  - ii) "We had a total coliform-positive repeat sample following an E. coli-positive routine sample."
  - iii) "We failed to take all required repeat samples following an E. coli-positive routine sample."
  - iv) "We failed to test for E. coli when any repeat sample tested positive for total coliform."
- D) If a supplier detects E. coli ~~but does and has~~ not violated the E. coli MCL, in addition to completing the table as ~~required in~~ subsection (d)(4) ~~requires~~, the supplier may include a statement ~~explaining that explains~~ that although ~~the supplier it has~~ detected E. coli, ~~it did the supplier is~~ not ~~violate in violation of~~ the E. coli MCL.

BOARD NOTE: ~~This Section derives~~ ~~Derived~~ from 40 CFR 141.153.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.884 Required Additional Health Information**

- a) All reports must prominently display the following language: "Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA or Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available

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from the USEPA Safe Drinking Water Hotline (800-426-4791)."

- b) A supplier that detects arsenic above 0.005 mg/ℓ and up to and including 0.010 mg/ℓ must do the following:
- 1) The supplier must include in its report a short informational statement about arsenic, using the following language: "While your drinking water meets USEPA's standard for arsenic, it does contain low levels of arsenic. USEPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. USEPA continues to research the health effects of low levels of arsenic, which is a naturally-occurring mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems."; or
  - 2) The supplier may write its own educational statement, but only in consultation with the Agency.
- c) A supplier that detects nitrate at levels above 5 mg/ℓ, but below the MCL, must do the following:
- 1) The supplier must include a short informational statement about the impacts of nitrate on children, using the following language: "Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider"; or
  - 2) The CWS supplier may write its own educational statement, but only in consultation with the Agency.
- d) Every report must include the following lead-specific information:
- 1) A short informational statement about lead in drinking water and its effects on children. The statement must include the following information:

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~~LeadIf present, elevated levels of lead~~ can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [NAME OF SUPPLIER] is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water.~~When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking.~~ If you are concerned about lead in your water, you may wish to have your water tested, contact [NAME OF UTILITY and CONTACT INFORMATION]. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

- 2) A supplier may write its own educational statement, but only in consultation with the Agency.
  
- e) A CWS supplier that detects TTHM above 0.080 mg/l, but below the MCL in Section 611.312, as an annual average, monitored and calculated under the provisions of former Section 611.680, must include the health effects language prescribed by Appendix A of this Part.

BOARD NOTE: Former Section 611.680 originally derived from 40 CFR 141.30(a) and (b). USEPA removed 40 CFR 141.30 in its entirety in 2006. The Board repealed former Section 611.680 in 2012. The references to former Section 611.680 in this subsection (e) relate to use of existing monitoring data collected under those provisions as they existed before their repeal.

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BOARD NOTE: [This Section derives](#) ~~Derived~~ from 40 CFR 141.154 ~~(2014)~~.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

**Section 611.901 General Public Notification Requirements**

The requirements of this Subpart V replace former notice requirements.

- a) **Who Must Give Public Notice.** Each owner or operator of a ~~PWS~~**public water system** (a CWS, an NTNCWS, or a transient non-CWS) must give notice for all violations of an NPDWR and for other situations, as listed in this subsection (a). The term "NPDWR violation" is used in this Subpart V to include violations of an MCL, an MRDL, a treatment technique, monitoring requirements, or a testing procedure set forth in this Part. Appendix G identifies the tier assignment for each specific violation or situation requiring a public notice.
  - 1) **NPDWR Violations**
    - A) A failure to comply with an applicable MCL or MRDL.
    - B) A failure to comply with a prescribed treatment technique.
    - C) A failure to perform water quality monitoring, as required by this Part.
    - D) A failure to comply with testing procedures as prescribed by this Part.
  - 2) **Relief Equivalent to a Variance and Exemptions under Sections 1415 and 1416 of SDWA.**
    - A) Operation under relief equivalent to a SDWA section 1415 variance, under Section 611.111, or a SDWA section 1416 exemption, under Section 611.112.
    - B) A failure to comply with the requirements of any schedule that has been set under relief equivalent to a SDWA section 1415 variance,

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under Section 611.111, or a SDWA section 1415 exemption, under Section 611.112.

## 3) Special Public Notices

- A) The occurrence of a waterborne disease outbreak or other waterborne emergency.
- B) An exceedance of the nitrate MCL by a non-CWS, ~~if~~where granted permission by the Agency under Section 611.300(d).
- C) The notice required by Section 611.908 for an exceedance of 2 mg/ℓ fluoride (the federal secondary MCL for fluoride (see 40 CFR 143.3)).

BOARD NOTE: See the Board Note appended to Section 611.908 for explanation.

- D) The availability of unregulated contaminant monitoring data collected as required by USEPA under 40 CFR 141.40.
- E) Other violations and situations determined by the Agency ~~in~~by a SEP to require a public notice under this Subpart V, not already listed in Appendix G.
- F) Exceeding the lead action level.

- b) The Type of Public Notice Required for Each Violation or Situation. The public notice requirements of this Subpart V are divided into three tiers, to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in subsection (a) are determined by the tier to which it is assigned. This subsection (b) provides the definition of each tier. Appendix G identifies the tier assignment for each specific violation or situation.

- 1) Tier 1 public notice: required for NPDWR violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.



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- 2) Tier 2 public notice: required for all other NPDWR violations and situations with potential to have serious adverse effects on human health.
  - 3) Tier 3 public notice: required for all other NPDWR violations and situations not included in Tier 1 and Tier 2.
- c) Who Must Receive Notice
- 1) Each PWS supplier must provide public notice to persons served by the water supplier ~~under, in accordance with~~ this Subpart V. A PWS supplier that sells or otherwise provides drinking water to another PWS supplier (i.e., to a consecutive system) is required to give public notice to the owner or operator of the consecutive system; the consecutive system supplier is responsible for providing public notice to the persons it serves.
  - 2) If a PWS supplier has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Agency may allow the system to limit distribution of the public notice to only persons served by that portion of the system that is out of compliance. ~~The Permission by the Agency~~ must issue a SEP when allowing the supplier to limit distributing notice for limiting distribution of the notice must be granted in writing, by a SEP.
  - 3) ~~The supplier must also submit a~~ A copy of the notice must also be sent to the Agency and the Administrator (for exceeding the lead action level); in accordance with the requirements under Section 611.840(d).

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.201.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.902 Tier 1 Public Notice: Form, Manner, and Frequency of Notice**

- a) Violations or Situations That Require a Tier 1 Public Notice. This subsection (a) lists the violation categories and other situations requiring a Tier 1 public notice. Appendix G identifies the tier assignment for each specific violation or situation. The violation categories include:
  - 1) Violation of the MCL for E. coli (as specified in Section 611.325(c)).

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- 2) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in Section 611.301, or when the water supplier fails to take a confirmation sample within 24 hours after the supplier's receipt of the results from the first sample showing an exceedance of the nitrate or nitrite MCL, as specified in Section 611.606(b).
- 3) Exceedance of the nitrate MCL by a non-CWS supplier, ~~if where~~ permitted to exceed the MCL by the Agency under Section 611.300(d), as required under Section 611.909.
- 4) Violation of the MRDL for chlorine dioxide, as defined in Section 611.313(a), when one or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water supplier does not take the required samples in the distribution system, as specified in Section 611.383(c)(2)(A).
- 5) This subsection (a)(5) refers to a violation of the former turbidity standard of Section 611.320, which the Board repealed because it applied to no suppliers in Illinois. This statement maintains structural consistency with the federal regulations.
- 6) Violation of the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), or Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit (as identified in Appendix G), ~~if where~~ the Agency determines after consultation that a Tier 1 public notice is required or ~~if where~~ consultation does not take place within 24 hours after the supplier learns of the violation.
- 7) Occurrence of a waterborne disease outbreak, as defined in Section 611.101, or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination).

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- 8) Detection of E. coli, enterococci, or coliphage in source water samples, as specified in Section 611.802(a) and (b).
  - 9) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the Agency inby a SEP.
  - 10) Exceeding the lead action level, as Section 141.80(c) specifies.
- b) When the Tier 1 Public Notice Is ~~is~~ to Be Provided. Additional Steps Required. A PWS supplier must do the following:
- 1) It must provide a public notice as soon as practical but no later than 24 hours after the supplier learns of the violation;
  - 2) It must initiate consultation with the Agency as soon as practical, but no later than 24 hours after the PWS supplier learns of the violation or situation, to determine additional public notice requirements; and
  - 3) It must comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the Agency. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions designed to reach all persons served.
- c) The Form and Manner of the Public Notice. A PWS supplier must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the PWS supplier are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system. In order to reach all persons served, a water supplier is to use, at a minimum, one or more of the following forms of delivery:
- 1) Appropriate broadcast media (such as radio and television);
  - 2) Posting of the notice in conspicuous locations throughout the area served by the water supplier;
  - 3) Hand delivery of the notice to persons served by the water supplier; or

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- 4) Another delivery method approved in writing by the Agency ~~in by~~ a SEP.

BOARD NOTE: ~~This Section derives~~Derived from 40 CFR 141.202.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART W: INITIAL DISTRIBUTION SYSTEM EVALUATIONS

**Section 611.923 40/30 Certification**

- a) Eligibility. A supplier ~~was~~is eligible for 40/30 certification if it had no TTHM or HAA5 monitoring violations under Subpart I and no individual sample exceeded 0.040 mg/l for TTHM or 0.030 mg/l for HAA5 during an eight consecutive calendar quarter period ~~implementing during implementation of~~ this Subpart W. Eligibility for 40/30 certification ~~required is based on~~ eight consecutive calendar quarters of Subpart I compliance monitoring results, unless the supplier ~~was~~is on reduced monitoring under Subpart I and ~~needed was~~ not ~~required to~~ monitor. If the supplier did not monitor, the supplier ~~was to~~must base its eligibility on compliance samples ~~taken~~during the preceding 12 months.

BOARD NOTE: ~~Implementing Implementation of~~ this Subpart W occurred in stages ~~from between~~ October 1, 2006 through October 1, 2014. The monitoring ~~for that formed the basis of~~ 40/30 certification ~~was based on monitoring that~~ began either January 2004 or January 2005, depending on population served and other factors. See 40 CFR 141.600(c) and 141.603(a). The Board removed the now-obsolete implementation dates.

- b) 40/30 Certification

- 1) A supplier ~~was to~~must certify to the Agency that ~~no every individual~~ compliance sample ~~taken~~ under Subpart I during the applicable ~~period~~ ~~under of the periods specified in~~ subsection (a) ~~exceeded were no more than~~ 0.040 mg/l for TTHM ~~or and~~ 0.030 mg/l for HAA5, and ~~that~~ the supplier ~~had no~~has not had any TTHM or HAA5 monitoring violations during the period ~~underspecified in~~ subsection (a).
- 2) The Agency ~~could~~may require the supplier to submit compliance monitoring results, distribution system schematics, or recommended Subpart Y compliance monitoring locations in addition to the supplier's

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certification. If the supplier ~~failed~~~~fails~~ to submit the Agency-requested information, the Agency ~~could~~~~may~~ require standard monitoring under Section 611.921 or a system-specific study under Section 611.922.

- 3) The Agency ~~could~~~~may~~ still require standard monitoring under Section 611.921 or a system-specific study under Section 611.922 even if the supplier ~~met~~~~meets~~ the criteria in subsection (a).
- 4) The supplier ~~was to~~~~must~~ retain a complete copy of its certification ~~submitted~~ under this Section for ten years after ~~submitting~~~~the date that it to the Agency~~~~submitted the supplier's certification~~. The supplier ~~was to~~~~must~~ make the certification, all data upon which ~~it based~~ the certification ~~is based~~, and any Agency notification available for Agency or public review ~~by the Agency or the public~~.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.603. Although this Section is an implementing provision with compliance deadlines long past, the Board removed the obsolete compliance dates but retained the rule in past-tense to avoid a gap in the Illinois rules.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART X: ENHANCED FILTRATION AND DISINFECTION –  
SYSTEMS SERVING FEWER THAN 10,000 PEOPLE

**Section 611.954 Disinfection Benchmark**

- a) Applicability. A Subpart B system supplier that ~~mustis required to~~ develop a disinfection profile under Section 611.953 must develop a disinfection benchmark if ~~decidingit decides~~ to ~~significantlymake a significant~~ change its disinfection practice. The supplier must ~~receive a SEP from~~~~consult with~~ the Agency ~~approving a significant changefor approval~~ before ~~implementing the change in its it can implement a significant~~ disinfection practice ~~change~~.
- b) Significant Changes to Disinfection Practice. Certain changes are significant ~~Significant~~ changes to disinfection practice ~~include the following~~:
  - 1) Changing ~~Changes to~~ the point for applying disinfectant~~of disinfection~~;

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- 2) ~~Changing Changes to~~ the applied disinfectant~~disinfectants used in the treatment plant~~;
  - 3) ~~Changing Changes to~~ the disinfection process; or
  - 4) Any other modification ~~identified by~~ the Agency identifies.
- c) Considering a Significant Change. A supplier ~~that is~~ considering a significant change to its disinfection practice must calculate a disinfection benchmark, as ~~described in~~ subsections (d) and (e) describe, and provide the benchmarks to the Agency. A supplier may only significantly change its~~make a significant~~ disinfection practice ~~change~~ after receiving a SEP from~~consulting with~~ the Agency approving the change for approval. A supplier must submit certain~~the following~~ information to the Agency to gain as part of the consultation and approval ~~of a significant change process~~:
- 1) A description of the proposed change;
  - 2) The disinfection profile for Giardia lamblia (and, if necessary, viruses) and disinfection benchmark;
  - 3) An analysis of how the proposed change will affect the current levels of disinfection; and
  - 4) Any additional information ~~requested by~~ the Agency requests.
- d) Calculation of a Disinfection Benchmark. A supplier significantly changing~~that is making a significant change to~~ its disinfection practice must calculate a disinfection benchmark using the specified~~following~~ procedure:
- 1) Step 1: Using the data that the supplier collected to develop the disinfection profile, determined~~determined~~ the average Giardia lamblia inactivation for each calendar month by dividing the sum of all Giardia lamblia inactivations for that month by the number of values calculated for that month; and
  - 2) Step 2: Determine the lowest monthly average value out of the 12 values. This value becomes the disinfection benchmark.

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- e) If a supplier uses chloramines, ozone, or chlorine dioxide for primary disinfection the supplier must calculate the disinfection benchmark from the data that the supplier collected for viruses to develop the disinfection profile ~~under~~ subsection (d). ~~The supplier must calculate this~~ This viral benchmark ~~must be calculated~~ in the same manner ~~as calculating used to calculate~~ the Giardia lamblia disinfection benchmark ~~under~~ subsection (d).

BOARD NOTE: ~~This Section derives~~ Derived from 40 CFR 141.540 through 141.544.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM

**Section 611.1001 Source Water Monitoring Requirements: Source Water Monitoring**

- a) Initial Round of Source Water Monitoring. A supplier must conduct the following monitoring on the schedule in subsection (c), unless it meets the monitoring exemption criteria in subsection (d).
- 1) A filtered system supplier ~~servicing that serves~~ 10,000 or more people must sample its source water for Cryptosporidium, E. coli, and turbidity at least monthly for 24 months.
  - 2) An unfiltered system supplier ~~servicing that serves~~ 10,000 or more people must sample its source water for ~~Cryptosporidium~~ Cryptosporidium at least monthly for 24 months.
  - 3) Smaller System Suppliers Monitoring for E. coli
    - A) A filtered system supplier ~~servicing that serves~~ fewer than 10,000 people must sample its source water for E. coli at least once every two weeks for 12 months.
    - B) A filtered system supplier ~~servicing that serves~~ fewer than 10,000 people may avoid E. coli monitoring if the system notifies the Agency that it will monitor for Cryptosporidium as described in subsection (a)(4). The system must notify the Agency no later than three months prior to the date before which the system is otherwise required to start E. coli monitoring under subsection (c).

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- 4) Smaller System Suppliers Monitoring for Cryptosporidium. A filtered system supplier ~~servicing that serves~~ fewer than 10,000 people must sample its source water for Cryptosporidium at least twice per month for 12 months or at least monthly for 24 months if it meets any of the conditions set forth in subsections (a)(4)(A) through (a)(4)(C), subject to the limitations of subsection (a)(4)(D), based on monitoring conducted under subsection (a)(3).
- A) For a supplier ~~using that uses~~ a lake or reservoir source, the annual mean E. coli concentration is greater than 10 E. coli/100 mL.
  - B) For a supplier ~~using that uses~~ a flowing stream source, the annual mean E. coli concentration is greater than 50 E. coli/100 mL.
  - C) The supplier does not conduct E. coli monitoring as described in subsection (a)(3).
  - D) A supplier ~~using that uses~~ groundwater under the direct influence of surface water must comply with the requirements of subsection (a)(4) based on the E. coli level that applies to the nearest surface water body. If no surface water body is nearby, the system must comply based on the requirements that apply to a supplier ~~using that uses~~ a lake or reservoir source.
- 5) For a filtered system supplier ~~servicing that serves~~ fewer than 10,000 people, the Agency may ~~issue, by~~ a SEP ~~approving, approve~~ monitoring for an indicator other than E. coli under subsection (a)(3). The Agency may also ~~issue, by~~ a SEP ~~approving, approve~~ an alternative to the E. coli concentration in subsection (a)(4)(A), (a)(4)(B), or (a)(4)(D) to trigger Cryptosporidium monitoring. This approval by the Agency must be provided to the supplier in writing, and it must include the basis for the Agency's determination that the alternative indicator or trigger level will provide a more accurate identification of whether a system will exceed the Bin 1 Cryptosporidium level set forth in Section 611.1010.
- 6) An unfiltered system supplier ~~servicing that serves~~ fewer than 10,000 people must sample its source water for Cryptosporidium at least twice per month for 12 months or at least monthly for 24 months.



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- 7) A supplier may sample more frequently than required by this Section if the sampling frequency is evenly spaced throughout the monitoring period.
- b) **Second Round of Source Water Monitoring.** A supplier must conduct a second round of source water monitoring that meets the requirements for monitoring parameters, frequency, and duration described in subsection (a), unless it meets the monitoring exemption criteria in subsection (d). The supplier must conduct this monitoring on the schedule set forth in subsection (c).
- c) **Monitoring Schedule.** A supplier must perform the two rounds of monitoring ~~required by~~ subsections (a) and (b) require on the schedule ~~provided~~ in this subsection (c), unless the supplier meets the monitoring exemption criteria in subsection (d).
  - 1) **Suppliers That Serve at Least 100,000 People**
    - A) The suppliers must have begun the first round of source water monitoring no later than the end of October 2006.
    - B) The suppliers must have begun the second round of source water monitoring no later than the end of April 2015.
  - 2) **Suppliers That Serve from 50,000 to 99,999 People**
    - A) The suppliers must have begun the first round of source water monitoring no later than the end of April 2007.
    - B) The suppliers must have begun the second round of source water monitoring no later than the end of October 2015.
  - 3) **Suppliers That Serve from 10,000 to 49,999 People**
    - A) The suppliers must have begun the first round of source water monitoring no later than the end of April 2008.
    - B) The suppliers must have begun the second round of source water monitoring no later than the end of October 2016.

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- 4) Suppliers That Serve Fewer Than 10,000 People and ~~That~~<sup>Which</sup> Monitor for E. coli
  - A) The suppliers must have begun the first round of source water monitoring no later than the end of October 2008.
  - B) The suppliers must have begun the second round of source water monitoring no later than the end of October 2017.
- 5) Suppliers That Serve Fewer Than 10,000 People and ~~That~~<sup>Which</sup> Monitor for Cryptosporidium
  - A) The suppliers must have begun the first round of source water monitoring no later than the end of April 2010.
  - B) The suppliers must have begun the second round of source water monitoring no later than the end of April 2019.

BOARD NOTE: The Board retained the past implementation dates until implementation of the Long Term 2 Enhanced Surface Water Treatment Rule in this Subpart Z is complete.

- d) Monitoring Avoidance
  - 1) A filtered system supplier is not required to conduct source water monitoring under this Subpart Z if the system will provide a total of at least 5.5-log of treatment for Cryptosporidium, equivalent to meeting the treatment requirements of Bin 4 in Section 611.1011.
  - 2) An unfiltered system supplier is not required to conduct source water monitoring under this Subpart Z if the system will provide a total of at least 3-log Cryptosporidium inactivation, equivalent to meeting the treatment requirements for an unfiltered system supplier with a mean Cryptosporidium concentration of greater than 0.01 oocysts/ℓ in Section 611.1012.
  - 3) If a supplier chooses to provide the level of treatment set forth in subsection (d)(1) or (d)(2), as applicable, rather than start source water monitoring, it must notify the Agency in writing no later than the date on

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which the system is otherwise required to submit a sampling schedule for monitoring under Section 611.1002. Alternatively, a supplier may choose to stop sampling at any point after it has initiated monitoring if it notifies the Agency in writing that it will provide this level of treatment. The supplier must install and operate technologies to provide this level of treatment before the applicable treatment compliance date set forth in Section 611.1013.

- e) Plants Operating Only Part of the Year. A supplier that has a Subpart B plant that operates for only part of the year must conduct source water monitoring in accordance with this Subpart Z, but with the following modifications:
- 1) The supplier must sample its source water only during the months that the plant operates, unless the Agency ~~issue, by~~ a SEP ~~specifying, specifies~~ another monitoring period based on plant operating practices.
  - 2) A supplier with plants that operate less than six months per year and ~~that which~~ monitors for Cryptosporidium must collect at least six Cryptosporidium samples per year during each of two years of monitoring. Samples must be evenly spaced throughout the period during which the plant operates.
- f) New Sources and New Systems
- 1) New sources. A supplier that begins using a new source of surface water or groundwater under the direct influence of surface water after the supplier was required to begin monitoring under subsection (c) must monitor the new source on a schedule that the Agency has approved ~~in by~~ a SEP. Source water monitoring must meet the requirements of this Subpart Z. The supplier must also meet the bin classification and Cryptosporidium treatment requirements of Sections 611.1010 and 611.1011 or Section 611.1012, as applicable, for the new source on a schedule that the Agency has approved ~~in by~~ a SEP.
  - 2) The requirements of Section 611.1001(f) apply to a Subpart B system supplier that begins operation after the applicable monitoring start date set forth in subsection (c).

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- 3) The supplier must begin a second round of source water monitoring no later than six years following initial bin classification under Section 611.1010 or determination of the mean *Cryptosporidium* level under Section 611.1012.
- g) Failure to collect any source water sample required under this Section in accordance with the sampling schedule, sampling location, analytical method, approved laboratory, and reporting requirements of Sections 611.1002 through 611.1006 is a monitoring violation.
- h) Grandfathering Monitoring Data. A supplier may use (grandfather) monitoring data collected prior to the applicable monitoring start date in subsection (c) to meet the initial source water monitoring requirements in subsection (a). Grandfathered data may substitute for an equivalent number of months at the end of the monitoring period. All data submitted under this subsection must meet the requirements set forth in Section 611.1007.

BOARD NOTE: [This Section derives](#) ~~Derived~~ from 40 CFR 141.701.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1002 Source Water Monitoring Requirements: Sampling Schedules**

- a) A supplier required to conduct source water monitoring under Section 611.1001 must submit a sampling schedule that specifies the calendar dates on which it will collect each required sample.
  - 1) The supplier must submit sampling schedules no later than three months prior to the applicable date listed in Section 611.1001(c) for each round of required monitoring.
  - 2) Submission of the Sampling Schedule to USEPA
    - A) A supplier [serving that serves](#) 10,000 or more people must submit its sampling schedule for the initial round of source water monitoring under Section 611.1001(a) to USEPA electronically into the Data Collection and Tracking System (DCTS) through USEPA's Central Data Exchange (CDX).

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BOARD NOTE: The supplier must register with the CDX to use the DCTS. For information see "Step-by-Step Guide to the Data Collection and Tracking System (DCTS)", USEPA, Office of Water (4606) (document number EPA 815/B-08-001), available from ~~the~~ USEPA, National Center for Environmental Publications, www.epa.gov/nscep (search "815B08001"); telephone 888-890-1995; e-mail epacdx@csc.com ("Technical Support" in the subject line); or fax 301-429-3905.

- B) If a supplier is unable to submit the sampling schedule into the DCTS, the supplier may use an alternative approach for submitting the sampling schedule that USEPA has approved in writing.
- 3) A supplier ~~servicing that serves~~ fewer than 10,000 people must submit to the Agency its sampling schedules for the initial round of source water monitoring Section 611.1001(a).
- 4) A supplier must submit to the Agency sampling schedules for the second round of source water monitoring required by Section 611.1001(b).
- 5) If USEPA or the Agency does not respond to a supplier regarding its sampling schedule, the supplier must sample at the reported schedule.
- b) A supplier must collect samples within two days before or two days after the dates indicated in its sampling schedule (i.e., within a five-day period around the schedule date) unless one of the conditions of subsection (b)(1) or (b)(2) applies.
  - 1) If an extreme condition or situation exists that may pose danger to the sample collector, or one that cannot be avoided and ~~that which~~ causes the supplier to be unable to sample in the scheduled five-day period, the supplier must sample as close to the scheduled date as is feasible, unless the Agency approves an alternative sampling date ~~in by~~ a SEP. The supplier must submit an explanation for the delayed sampling date to the Agency concurrent with the shipment of the sample to the laboratory.
  - 2) Replacement Samples
    - A) If a supplier is unable to report a valid analytical result for a scheduled sampling date due to equipment failure; loss of or

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damage to the sample; failure to comply with the analytical method requirements, including the quality control requirements in Section 611.1004; or the failure of an approved laboratory to analyze the sample, then the supplier must collect a replacement sample.

- B) The supplier must collect the replacement sample not later than 21 days after receiving information that an analytical result cannot be reported for the scheduled date, unless the supplier demonstrates that collecting a replacement sample within this time frame is not feasible or the Agency approves an alternative resampling date ~~in~~ ~~by~~ a SEP. The supplier must submit an explanation for the delayed sampling date to the Agency concurrent with the shipment of the sample to the laboratory.
- c) A supplier that fails to meet the criteria of subsection (b) for any source water sample required under Section 611.1001 must revise its sampling schedule to add dates for collecting all missed samples. A supplier must submit the revised schedule to the Agency for approval prior to collecting the missed samples.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.702.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1006 Source Water Monitoring Requirements: Reporting Source Water Monitoring Results**

- a) A supplier must report results from the source water monitoring required under Section 611.1001 no later than ten days after the end of the first month following the month when the sample is collected.
- b) Submission of Analytical Results to USEPA
- 1) A supplier servicing that serves at least 10,000 people must report the results from the initial source water monitoring required under Section 611.1001(a) to the Data Collection and Tracking System (DCTS) through USEPA's Central Data Exchange (CDX).

BOARD NOTE: The supplier must register with the CDX to use the DCTS. For information see "Step-by-Step Guide to the Data Collection

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and Tracking System (DCTS)", ~~the~~USEPA, Office of Water (4606) (document number EPA 815/B-08-001), available from ~~the~~USEPA, National Center for Environmental Publications, [www.epa.gov/nscep](http://www.epa.gov/nscep) (search "815B08001"); telephone 888-890-1995; e-mail [epacdx@csc.com](mailto:epacdx@csc.com) ("Technical Support" in the subject line); or fax 301-429-3905.

- 2) If a supplier is unable to report monitoring results into the DCTS, the supplier may use an alternative approach for reporting monitoring results that USEPA has approved in writing.
- c) A supplier ~~servicing that serves~~ fewer than 10,000 people must report results from the initial source water monitoring required under Section 611.1001(a) to the Agency.
- d) A supplier must report results from the second round of source water monitoring required under Section 611.1001(b) to the Agency.
- e) A supplier must report the applicable information in subsections (e)(1) and (e)(2) for the source water monitoring required under Section 611.1001.
  - 1) A supplier must report the data elements set forth in subsection (e)(1)(D) for each Cryptosporidium analysis.
    - A) For matrix spike samples, a supplier must also report the sample volume spiked and estimated number of oocysts spiked. These data are not required for field samples.
    - B) For samples in which less than 10 ℓ is filtered or less than 100% of the sample volume is examined, the supplier must also report the number of filters used and the packed pellet volume.
    - C) For samples in which less than 100% of sample volume is examined, the supplier must also report the volume of resuspended concentrate and volume of this resuspension processed through immunomagnetic separation.
    - D) Data Elements
      - i) The PWS ID;

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- ii) The Facility ID;
- iii) The sample collection date;
- iv) The sample type (field or matrix spike);
- v) The sample volume filtered (ℓ), to nearest ¼ ℓ;
- vi) Whether 100 percent of the filtered volume was examined;  
and
- vii) The number of oocysts counted.

BOARD NOTE: Subsection (e)(1)(D) ~~derives is derived~~ from unnumbered tabulated text in 40 CFR 141.706(e)(1).

- 2) A supplier must report the following data elements for each E. coli analysis:
- A) The PWS ID;
  - B) The Facility ID;
  - C) The sample collection date;
  - D) The analytical method number;
  - E) The method type;
  - F) The source type (flowing stream, lake or reservoir, groundwater under the direct influence of surface water);
  - G) The E. coli count per 100 mℓ.
  - H) The turbidity, except that a supplier ~~that which~~ serves fewer than 10,000 people that is not required to monitor for turbidity under Section 611.1001 is not required to report turbidity with its E. coli results.



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BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.706.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1013 Treatment Technique Requirements: Schedule for Compliance with Cryptosporidium Treatment Requirements**

- a) Following initial bin classification under Section 611.1010(c), a filtered system supplier must provide the level of treatment for Cryptosporidium required by Section 611.1011 according to the applicable schedule set forth in subsection (c).
- b) Following initial determination of the mean Cryptosporidium level under Section 611.1012(a)(1), an unfiltered system supplier must provide the level of treatment for Cryptosporidium required by Section 611.1012 according to the applicable schedule set forth in subsection (c).
- c) Cryptosporidium Treatment Compliance Dates-

BOARD NOTE: The federal compliance dates and possible two-year extension ~~provided by~~ corresponding 40 CFR 141.713(c) provides are all past dates. The Board retains the text of subsections (c)(1) through (c)(5) as amended for guidance implementing the rules under Sections 611.1001(f) and 611.1013(d) and (e).

- 1) A supplier serving 100,000 or more persons was required to comply with Cryptosporidium treatment requirements before April 1, 2012.
- 2) A supplier serving 50,000 to 99,999 persons was required to comply with Cryptosporidium treatment requirements before October 1, 2012.
- 3) A supplier serving 10,000 to 49,999 persons was required to comply with Cryptosporidium treatment requirements before October 1, 2013.
- 4) A supplier serving fewer than 10,000 persons was required to comply with Cryptosporidium treatment requirements before October 1, 2014.
- 5) The Agency may allow no more than an additional two years for complying with the treatment requirement if it determines that additional

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time is necessary for the supplier to make capital improvements to implement the treatment.

- d) If the bin classification for a filtered system supplier changes following the second round of source water monitoring, as determined under Section 611.1010(d), the supplier must provide the level of treatment for Cryptosporidium required by Section 611.1011 on a schedule approved by the Agency in by-a SEP.
- e) If the mean Cryptosporidium level for an unfiltered system supplier changes following the second round of monitoring, as determined under Section 611.1012(a)(2), and if the supplier must provide a different level of Cryptosporidium treatment under Section 611.1012 due to this change, the supplier must meet this treatment requirement on a schedule approved by the Agency in by-a SEP.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.713.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1015 Requirements for Microbial Toolbox Components: Microbial Toolbox Options for Meeting Cryptosporidium Treatment Requirements**

- a) Treatment Credits
  - 1) A supplier receives the applicable of the treatment credits set forth in subsection (b) by meeting the conditions for microbial toolbox options described in Sections 611.1016 through 611.1020. The supplier applies these treatment credits to meet the applicable treatment requirements set forth in Section 611.1011 or Section 611.1012.
  - 2) An unfiltered system supplier is eligible for treatment credits for the microbial toolbox options described in Section 611.1020 only.
- b) Subsections (b)(1) through (b)(5) summarize options in the microbial toolbox.
  - 1) Source Protection and Management Toolbox Options
    - A) Watershed Control Program. 0.5-log credit for Agency-approved program comprising required elements, annual program status

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report to Agency, and regular watershed survey. An unfiltered system supplier is not eligible for credit. Specific criteria are set forth in Section 611.1016(a).

- B) Alternative source or intake management: No prescribed credit. A supplier may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies. Specific criteria are set forth in Section 611.1016(b).
- 2) Pre-Filtration Toolbox Options-
- A) Presedimentation Basin with Coagulation. 0.5-log credit during any month that presedimentation basins achieve a monthly mean reduction of 0.5-log or greater in turbidity or alternative Agency-approved performance criteria. To be eligible, basins must be operated continuously with coagulant addition and all plant flow must pass through basins. Specific criteria are set forth in Section 611.1017(a).
  - B) Two-stage Lime Softening. 0.5-log credit for two-stage softening ~~if where~~ chemical addition and hardness precipitation occur in both stages. All plant flow must pass through both stages. Single-stage softening is credited as equivalent to conventional treatment. Specific criteria are set forth in Section 611.1017(b).
  - C) Bank Filtration. 0.5-log credit for 25-foot setback or 1.0-log credit for 50-foot setback; the aquifer must be unconsolidated sand containing at least ten percent fines and average turbidity in the wells must be less than 1 NTU. A supplier using wells followed by filtration when conducting source water monitoring must sample the well to determine bin classification and is not eligible for additional credit. Specific criteria are set forth in Section 611.1017(c).
- 3) Treatment Performance Toolbox Options
- A) Combined Filter Performance. 0.5-log credit for combined filter effluent turbidity less than or equal to 0.15 NTU in at least 95

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percent of measurements each month. Specific criteria are set forth in Section 611.1018(a).

- B) Individual Filter Performance. 0.5-log credit (in addition to 0.5-log combined filter performance credit) if individual filter effluent turbidity is less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter and is never greater than 0.3 NTU in two consecutive measurements in any filter. Specific criteria are set forth in Section 611.1018(b).
  - C) Demonstration of Performance. Credit awarded to unit process or treatment train based on a demonstration to the Agency with an Agency-approved protocol. Specific criteria are set forth in Section 611.1018(c).
- 4) Additional Filtration Toolbox Options
- A) Bag or Cartridge Filters (individual filters). Up to 2-log credit based on the removal efficiency demonstrated during challenge testing with a 1.0-log factor of safety. Specific criteria are set forth in Section 611.1019(a).
  - B) Bag or Cartridge Filters (in series). Up to 2.5-log credit based on the removal efficiency demonstrated during challenge testing with a 0.5-log factor of safety. Specific criteria are set forth in Section 611.1019(a).
  - C) Membrane Filtration. Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing. Specific criteria are set forth in Section 611.1019(b).
  - D) Second Stage Filtration. 0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation prior to first filter. Specific criteria are set forth in Section 611.1019(c).
  - E) Slow Sand Filters. 2.5-log credit as a secondary filtration step or 3.0-log credit as a primary filtration process. No prior chlorination

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for either option. Specific criteria are set forth in Section 611.1019(d).

- 5) Inactivation Toolbox Options
  - A) Chlorine Dioxide. Log credit based on measured CT in relation to CT table. Specific criteria are set forth in Section 611.1020(b).
  - B) Ozone. Log credit based on measured CT in relation to CT table. Specific criteria are set forth in Section 611.1020(b).
  - C) UV. Log credit based on validated UV dose in relation to UV dose table; reactor validation testing required to establish UV dose and associated operating conditions. Specific criteria are set forth in Section 611.1020(d).

BOARD NOTE: [This Section derives](#) ~~Derived~~ from 40 CFR 141.715.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART AA: REVISED TOTAL COLIFORM RULE

**Section 611.1052 Analytical Methods and Laboratory Certification**

- a) Analytical Methodology
  - 1) The standard sample volume required for analysis [is 100 mL](#), regardless of analytical method ~~the supplier uses used, is 100 mL~~.
  - 2) A supplier needs only determine the presence or absence of total coliforms and E. coli; [a supplier needs not determine a determination of density is not required](#).
  - 3) The time from sample collection to [initiating initiation of](#) test medium incubation may not exceed 30 hours. Suppliers ~~should are encouraged but need not required to~~ hold samples below 10 °C during transit.
  - 4) If [the supplier is to analyze](#) water having residual chlorine (measured as free, combined, or total chlorine) ~~is to be analyzed, the supplier must add~~

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sufficient sodium thiosulfate ( $\text{Na}_2\text{S}_2\text{O}_3$ ) ~~must be added~~ to the sample bottle before sterilization to neutralize any residual chlorine in the water sample. ~~Section Dechlorination procedures are addressed in~~ section 2 of SM 9060 A (97), incorporated by reference in Section 611.102, addresses dichlorination procedures.

- 5) The supplier must conduct total coliform and E. coli analyses in using certain accordance with one of the following analytical methods, each incorporated by reference in Section 611.102:

BOARD NOTE: The supplier must monitor and analyze only using All monitoring and analyses must be done in accordance with the version of the approved method ~~recited~~ in this subsection (a) and incorporated by reference in Section 611.102. The methods listed are the only versions the supplier that may use be used for compliance with this Subpart AA. Laboratories should carefully be careful to use only the approved versions of ~~the~~ methods, as product package inserts may not be the same as the approved versions of the methods.

A) Total Coliforms, Lactose Fermentation Methods

- i) Total Coliform Fermentation Technique. Sections 1 and 2 of SM 9221 B (94) (only the 20<sup>th</sup> ed.), SM 9221 B (99), SM 9221 B (06), or sections 1 through 4 of SM 9221 B (14).

BOARD NOTE: The supplier may use commercially available lactose ~~Lactose~~ ~~broth, as commercially available,~~ ~~may be used~~ in lieu of lauryl tryptose broth, if the supplier conducts at least 25 parallel tests between lactose broth and lauryl tryptose broth using the water normally tested, and if the findings from this comparison demonstrates demonstrate that the false-positive ~~rate~~ and false-negative ~~rates~~ ~~rate~~ for total coliforms are, using lactose broth, is less than ten percent using lactose broth.

- ii) Presence-Absence (P-A) Coliform Test. Sections 1 and 2 of SM 9221 D (94), SM 9221 D (99), or sections 1 through 3 of SM 9221 D (14).

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BOARD NOTE: A supplier may use a multiple tube enumerative format, as ~~described in~~ SM 9221 D (94), SM 9221 D (99), or SM 9221 D (14) describes, is approved for this method for ~~use in~~ presence-absence determination under this Subpart AA.

## B) Total Coliforms, Membrane Filtration Methods

- i) Standard Total Coliform Membrane Filter Procedure Using Endo Medium. SM 9222 B (97), SM 9222 B (15), SM 9222 C (97), or SM 9222 C (15).
- ii) Membrane Filtration Using MI Medium. USEPA 1604 (02).
- iii) Hach 10029 (99) (m-ColiBlue24®).

BOARD NOTE: A supplier must begin all ~~All~~ filtration series ~~must begin~~ with membrane filtration equipment the supplier that has been sterilized by autoclaving. Exposing ~~Exposure of~~ filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, the supplier may expose ~~exposure of~~ the filtration equipment to UV light ~~may be used~~ to sanitize the funnels between filtrations within a filtration series. Alternatively, the supplier may use manufacturer-pre-sterilized membrane filtration equipment ~~that is pre-sterilized by the manufacturer~~ (i.e., disposable funnel units) ~~may be used~~.

- iv) Chromocult® (00).
- v) RAPID'E. coli (20).

BOARD NOTE: A supplier must begin all ~~All~~ filtration series ~~must begin~~ with membrane filtration equipment the supplier that has been sterilized by autoclaving. Exposing ~~Exposure of~~ filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, the supplier may expose

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~~exposure of~~ the filtration equipment to UV light ~~may be used~~ to sanitize the funnels between filtrations within a filtration series. Alternatively, the supplier may use manufacturer-pre-sterilized membrane filtration equipment ~~that is pre-sterilized by the manufacturer~~ (i.e., disposable funnel units) ~~may be used~~.

## C) Total Coliforms, Enzyme Substrate Methods

- i) Colilert<sup>®</sup>. SM 9223 B (97), SM 9223 B (04), or SM 9223 B (16).

BOARD NOTE: A supplier may use multiple-tube ~~Multiple tube~~ and multi-well enumerative formats for this method ~~are approved for use~~ in presence-absence determination under this Subpart AA.

- ii) Colilert<sup>®</sup>-18. SM 9223 B (97), SM 9223 B (04), or SM 9223 B (16).

- iii) Colisure<sup>®</sup>. SM 9223 B (97), SM 9223 B (04), or SM 9223 B (16).

BOARD NOTE: A supplier may use multiple-tube ~~Multiple tube~~ and multi-well enumerative formats for this method ~~are approved for use~~ in presence-absence determination under this Subpart AA. A supplier may read Colisure<sup>™</sup> Test results ~~may be read~~ after an incubation time of 24 hours.

- iv) E\*Colite<sup>®</sup> (98).

- v) ReadyCult<sup>®</sup> (07).

- vi) Modified Colitag<sup>™</sup> (09) or Modified Colitag<sup>™</sup> (20).

- vii) Tecta (14) or Tecta (17).



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- D) E. coli (following lactose fermentation methods), EC-MUG Medium. Section 1 of SM 9221 F (94), section 1 of SM 9221 F (01), section 1 of SM 9221 F (06), or section 1 of SM 9221 F (14).
- E) E. coli, Partition Methods (following membrane filtration methods)
- i) EC Broth with MUG (EC-MUG). Section 1.c(2) of SM 9222 G (97) or SM 9222 H (15).
- ii) NA-MUG Medium. Section 1.c(1) of SM 9222 G (97) or SM 9222 I (15).
- F) E. coli, Membrane Filtration Methods
- i) Membrane Filtration Using MI Medium. USEPA 1604 (02).
- ii) Hach 10029 (99) (m-ColiBlue24<sup>®</sup>).

BOARD NOTE: The supplier must make certain following changes ~~must be made~~ to the EC broth with MUG (EC-MUG) formulation: 1.5 g potassium dihydrogen phosphate (KH<sub>2</sub>PO<sub>4</sub>) ~~must be 1.5 g~~, and 0.05 g 4-methylumbelliferyl- $\beta$ -D-glucuronide ~~must be 0.05 g~~.

BOARD NOTE: A supplier must begin all All filtration series ~~must begin~~ with membrane filtration equipment the supplier that has been sterilized by autoclaving. Exposing Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, the supplier may expose exposure of the filtration equipment to UV light ~~may be used~~ to sanitize the funnels between filtrations within a filtration series. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Alternatively, the supplier may use manufacturer-pre-sterilized membrane filtration equipment ~~that is pre-sterilized by the manufacturer~~ (i.e., disposable funnel units) ~~may be used~~.

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iii) Chromocult<sup>®</sup> (00).

iv) [RAPID'E. coli \(20\)](#).

BOARD NOTE: [A supplier must begin all AH](#) filtration series ~~must begin~~ with membrane filtration equipment ~~the supplier that has been~~ sterilized by autoclaving. ~~Exposing~~ ~~Exposure of~~ filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, ~~the supplier may expose~~ ~~exposure of~~ the filtration equipment to UV light ~~may be used~~ to sanitize the funnels between filtrations within a filtration series. ~~Exposure of filtration equipment to UV light is not adequate to ensure sterilization.~~ Alternatively, ~~the supplier may use~~ ~~manufacturer-pre-sterilized~~ membrane filtration equipment ~~that is pre-sterilized by the manufacturer~~ (i.e., disposable funnel units) ~~may be used~~.

G) E. coli, Enzyme Substrate Methods

i) Colilert<sup>®</sup>. SM 9223 B (97), SM 9223 B (04), SM 9223 B (16).

BOARD NOTE: Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this Subpart AA.

ii) Colilert<sup>®</sup>-18. SM 9223 B (97), SM 9223 B (04), SM 9223 B (16).

iii) Colisure<sup>®</sup>. SM 9223 B (97), SM 9223 B (04), SM 9223 B (16).

BOARD NOTE: [A supplier may use multiple-tube](#) ~~Multiple tube~~ and multi-well enumerative formats for this method ~~are approved for use~~ in presence-absence determination under this Subpart AA. [A supplier may read](#) Colisure<sup>™</sup> results ~~may be read~~ after an incubation time of 24 hours.

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- iv) E\*Colite® (98).
  - v) Readycult® (07).
  - vi) Modified Colitag™ (09) or Modified Colitag™ (20).
  - vii) Tecta (14) or Tecta (17).
- H) Simultaneous Detection of Total Coliforms and E. coli by Dual Chromogen Membrane Filter Procedure (using m-ColiBlue24® medium). SM 9222 J (15).
- b) Laboratory Certification. A supplier must have a certified laboratory in one of the categories in Section 611.490(a) analyze all compliance samples required by this Subpart AA ~~requires analyzed by a certified laboratory in one of the categories listed in Section 611.490(a)~~. The laboratory used by the supplier uses for compliance monitoring under this Subpart AA must be certified for each method (and associated contaminants) ~~that is used for compliance monitoring analyses under this Subpart AA~~.
- c) This subsection (c) corresponds with 40 CFR 141.1052(c), ~~which is~~ a centralized listing of incorporations by reference for the purposes of subpart Y to 40 CFR 141. The Board has centrally located all incorporations by reference in Section 611.102. This statement maintains structural consistency with the federal rules.

BOARD NOTE: This Section derives ~~Derived~~ from 40 CFR 141.852 and appendix A to subpart C of 40 CFR 141. The Board ~~did has~~ not separately list listed the following approved alternative methods from Standard Methods Online that are the same version as a method appearing that appears in a printed edition of Standard Methods. Using ~~Use of~~ the Standard Methods Online copy is acceptable.

Standard Methods Online, Methods 9221 B-99 and 9221 D-99 appear in the 21<sup>st</sup> edition as Methods 9221 B and D. This In this Section, this appears in this Section as Methods 9221 B and 9221 D. In this Section, these appear as SM 9221 B (99) and SM 9221 D (99).

Standard Methods Online, Methods 9221 B-06, 9221 D-06, and 9221 F-06 appear in the 22<sup>nd</sup> edition as Methods 9221 B, D, and F. These In this Section, these appear in this Section as SM 9221 B (06), 9221 D (06), and SM 9221 F (06).

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Standard Methods Online, Methods 9222 B-97, 9222 C-97, and 9222 G-97 appear in the 20<sup>th</sup> edition as Methods 9222 B, 9222 C, and 9222 G. ~~These In this Section, these~~ appear in this Section as SM 9222 B (97), 9222 C (97), and SM 9222 G (97).

Standard Methods Online, Method 9223 B-97 appears in the 20<sup>th</sup> and 21<sup>st</sup> editions as Method 9223 B. ~~This In this Section, this~~ appears in this Section as SM 9223 B (97).

Standard Methods Online, Method 9223 B-04 appears in the 22<sup>nd</sup> edition as Method 9223 B. ~~This In this Section, this~~ appears in this Section as SM 9223 B (04).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART AG: INTERIM LEAD AND COPPER RULESSection 611.1350 General Requirementsa) Applicability and Scope

- 1) Applicability and Complying with this Subpart AG. Subpart G and this Subpart AG constitute NPDWRs for lead and copper. Subpart G and this Subpart AG apply to all community water systems (CWSs) and non-transient, non-community water systems (NTNCWSs).
  - A) A supplier must comply with this Subpart AG until the earlier of when the supplier complies with Subpart G or October 16, 2024.
  - B) If the Agency issued a SEP prior to December 16, 2021, exempting a supplier under any rule in former Subpart G (now this Subpart AG), the supplier must comply with this Subpart AG until that SEP expires.
  - C) The Agency may issue a SEP requiring a supplier to comply with specified rules in Subpart G before Section 611.350(a)(1)(A) or (a)(1)(B) otherwise requires or as necessary to address issues in a notice the Agency received from USEPA under 40 CFR 142.23 or

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142.30. The SEP must specify the rules in Subpart G with which the supplier must comply and their counterparts in this Subpart AG with which the supplier needs no longer comply. The supplier must comply with the SEP-specified Subpart G rules in lieu of their counterparts in this Subpart AG.

D) Relationship Between Subpart G and Subpart AG Rules

- i) The rules in this Subpart AG are based on Subpart G as it existed on December 16, 2021, the effective date of USEPA's Lead and Copper Rule Revisions.
- ii) Each rule in this Subpart AG corresponds with a rule in Subpart G by adding the digit "1" immediately after "611." in the Section number. Removing that "1" from the Section number of a rule in this Subpart AG gives the corresponding rule in Subpart G.
- iii) Any action under a rule that was in Subpart G before December 16, 2021, satisfies the corresponding rule in this Subpart AG.

BOARD NOTE: USEPA's LCRR apply to all suppliers on December 16, 2021. However, USEPA delays requiring compliance with LCRR until October 16, 2024, when any previously granted exemption expires, or as provided otherwise by any of several specified rules for corrosion control treatment; lead service line replacement; public education, supplemental monitoring, and mitigation; monitoring; and reporting (corresponding with 35 Ill. Adm. Code 611.351, 611.354, 611.355, 611.356, or 611.360). Until a supplier must comply with the LCRR, USEPA requires the supplier to comply with subpart I of 40 CFR 141 (2020). This requires the Board to codify two versions of the Lead and Copper Rule: one in this Subpart AG, representing the Lead and Copper Rules prior to the LCRR (40 CFR 141 (2020)), and the other in Subpart G, representing 40 CFR 141 incorporating the LCRR.

- 2) Scope. This Subpart G establishes a treatment technique including corrosion control treatment, source water treatment, lead service line replacement, and public education. Lead and copper action levels the

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supplier measures in samples collected at consumers' taps trigger some of these requirements.

b) Definitions. For this Subpart G only, this subsection (b) defines certain terms :

“Action level” means the computed concentration of lead or copper in water under subsection (c) determining applicability of some treatment requirements under this Subpart G. The action level for lead is 0.015 mg/ℓ. The action level for copper is 1.3 mg/ℓ.

“Corrosion inhibitor” means a substance that can reduce corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

“Effective corrosion inhibitor residual” means a concentration of corrosion inhibitor in the drinking water sufficient to form a passivating film on the interior walls of pipe.

“Exceed” or “exceedance”, relative to either the lead or the copper action level, means that the 90th percentile level of the samples the supplier collected during a six-month monitoring period is greater than the lead or copper action level.

“First-draw tap sample” means a one-liter sample of tap water, a supplier collects under Section 611.1356(b)(2), that stood in plumbing pipes for at least six hours and the supplier collects without flushing the tap.

“Large system” means a water system regularly serving water to more than 50,000 persons.

“Lead service line” means a service line made of lead connecting the water main to the building inlet, including any lead pigtail, gooseneck, or other fitting that is connected to such lead line.

“Maximum permissible concentration” or “MPC” means the concentration of lead or copper in finished water entering the supplier’s distribution system, which the Agency designates in a SEP based on the contaminant removal ability of the treatment properly operated and maintained.

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BOARD NOTE: This definition derives from 40 CFR 141.83(b)(4) (2020). (See Section 611.1353(b)(4)(B).)

“Medium-sized water system” means a water system regularly serving water to 3,301 to 50,000 persons.

“Meet” or “comply with”, relating to either the lead or the copper action level, means that the 90th percentile level of the supplier’s samples collected during a six-month monitoring period is less than or equal to the lead or copper action level.

“Monitoring period” means any of the six-month periods during which a supplier must complete a cycle of monitoring under this Subpart G.

“Multiple-family residence” means a building in which multiple families currently reside, but not one that is also a “single-family structure”.

“90th percentile level” means the concentration of lead or copper that ten percent or fewer of all samples tap water samples under Section 611.1356 exceed during a six-month monitoring period (i.e., that contaminant concentration greater than or equal to the results obtained from 90 percent of the samples). The supplier must determine the 90th percentile levels for copper and lead under subsection (c)(3).

BOARD NOTE: This definition derives from 40 CFR 141.80(c) (2020).

“Optimal corrosion control treatment” means the corrosion control treatment minimizing the lead and copper concentrations at users’ taps while ensuring that the treatment will not violate any national primary drinking water regulations.

“Practical quantitation limit” or “PQL” means the lowest concentration of a contaminant that a well-operated laboratory can reliably analyze within specified limits of precision and accuracy during routine laboratory operating conditions. The PQL for lead is 0.005 mg/ℓ. The PQL for copper is 0.050 mg/ℓ.

BOARD NOTE: This definition derives from 40 CFR 141.89(a)(1)(ii) and (a)(1)(iv) (2020).

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“Service line sample” means a one-liter sample of water under Section 611.1356(b)(3) that stood for at least six hours in a service line.

“Single-family structure” means a building constructed as a residence for a single-family that the occupant currently uses as a residence or place of business.

“Small system” means a water system regularly serving water to 3,300 or fewer persons.

BOARD NOTE: A small system for purposes of a small system variance under Section 611.131 is distinct from small-sized water system under this Subpart AG.

BOARD NOTE: This subsection (b) derives from 40 CFR 141.2 (2020).

c) Lead and Copper Action Levels

- 1) The supplier exceeds the lead action level if the 90th percentile lead level is greater than 0.015 mg/ℓ.
- 2) The supplier exceeds the copper action level if the 90th percentile copper level is greater than 1.3 mg/ℓ.
- 3) Suppliers must compute the 90th percentile lead and copper levels using the specified procedure:
  - A) The supplier must list the results of all lead or copper samples it took during the six-month monitoring period in ascending order, ranging from the sample with the lowest concentration to the sample with the highest concentration. The supplier must assign each sampling result an ordinal number, ascending by single integers, assigning the number 1 for the sample with the lowest contaminant level. The number the supplier assigns to the sample with the highest contaminant level must equal the total number of samples the supplier took.
  - B) To determine the 90th percentile sample, the supplier must multiply the total number of samples taken during the six-month monitoring period times 0.9.



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- C) The contaminant concentration in the sample corresponding with the ordinal number calculating under subsection (c)(3)(B) yields is the 90th percentile contaminant level.
  - D) For a supplier collecting five samples per six-month monitoring period, the 90th percentile is the average of the highest and second highest concentrations.
  - E) For a supplier the Agency allows to collect fewer than five samples under Section 611.1356(c), the result for the sample with the highest concentration is the 90th percentile value.
- d) Corrosion Control Treatment Requirements
- 1) Every supplier must install and operate optimal corrosion control treatment.
  - 2) Any supplier complying with the applicable corrosion control treatment requirements the Agency specifies under Sections 611.1351 and 611.1352 is deemed as complying with subsection (d)(1).
- e) Source Water Treatment Requirements. Any supplier whose system exceeds the lead or copper action level must implement all applicable source water treatment requirements the Agency specifies under Section 611.1353.
- f) Lead Service Line Replacement Requirements. Any supplier whose system exceeds the lead action level after implementing applicable corrosion control and source water treatment must complete the lead service line replacement under Section 611.1354.
- g) Public Education Requirements. Under Section 611.1355, the supplier must provide a consumer notice of the lead tap water monitoring results to the persons served at each tested site (tap). Any supplier exceeding the lead action level must implement the public education requirements.
- h) Monitoring and Analytical Requirements. A supplier must complete all tap water monitoring for lead and copper, monitoring for water quality parameters, and source water monitoring for lead and copper and analyze the monitoring results

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under this Subpart G as Sections 611.1356, 611.1357, 611.1358, and 611.1359 require.

- i) Reporting Requirements. A supplier must report any information the treatment provisions of this Subpart G and Section 611.1360 require to the Agency.
- j) Recordkeeping Requirements. A supplier must maintain records as Section 611.1361 requires.
- k) Violation of National Primary Drinking Water Regulations. Failing to comply with this Subpart G, including conditions the Agency imposes in a SEP, violates the lead or copper NPDWRs.

BOARD NOTE: This Section corresponds with Section 611.1350 and derives from 40 CFR 141.80 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1351 Applicability of Corrosion Control**

- a) Corrosion Control Required. A supplier must complete the applicable corrosion control treatment under Section 611.1352 on or before the deadlines in this Section.
  - 1) Large Systems. Each large system supplier (one regularly serving more than 50,000 persons) must complete the corrosion control treatment steps subsection (d) specifies, unless subsection (b)(2) or (b)(3) deems the supplier to have optimized corrosion control.
  - 2) Small and Medium-Sized Systems. Each small system supplier (one regularly serving 3,300 or fewer persons) and each medium-sized water system (one regularly serving 3,301 to 50,000 persons) must complete the corrosion control treatment steps subsection (e) specifies, unless subsection (b)(1), (b)(2), or (b)(3) deems the supplier to have optimized corrosion control.
- b) Suppliers Deemed to Have Optimized Corrosion Control. Subsection (b)(1), (b)(2), or (b)(3) deems a supplier to have optimized corrosion control treatment if the supplier satisfies the criterion the subsection specifies, freeing the supplier

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from the obligation to complete the applicable corrosion control treatment steps in this Section. Any system subsection (b)(1), (b)(2), or (b)(3) deems to have optimized corrosion control having treatment in place must continue operating and maintaining optimal corrosion control treatment and meeting any requirements the Agency determines are appropriate to ensure that the supplier maintains optimal corrosion control treatment.

- 1) Small and Medium-Sized Systems Meeting Action Levels. Meeting the lead and copper action levels during each of two consecutive six-month monitoring periods under Section 611.1356 deems a small or medium-sized system supplier to have optimized corrosion control.
- 2) SEP for Activities Equivalent to Corrosion Control. The Agency must issue a SEP deeming a supplier to have optimized corrosion control treatment upon determining that the supplier conducts activities equivalent to the corrosion control steps under this Section. In making this determination, the Agency must specify the water quality control parameters representing optimal corrosion control under Section 611.1352(f). A water supplier the Agency deems as having optimized corrosion control under this subsection (b)(2) must operate in compliance with the Agency-designated optimal water quality control parameters under Section 611.1352(g) and must continue to conduct lead and copper tap and water quality parameter sampling under Sections 611.1356(d)(3) and 611.1357(d). A supplier must provide the Agency with the following information to support the Agency issuing a SEP under this subsection (b)(2):
  - A) The results of all test samples the supplier collected for each of the water quality parameters in Section 611.1352(c)(3);
  - B) A report explaining the test methods the supplier used to evaluate the corrosion control treatments in Section 611.1352(c)(1), the results of all tests conducted, and the basis for the supplier selecting the optimal corrosion control treatment;
  - C) A report explaining how the supplier installed corrosion control and how the supplier maintains the corrosion control to insure minimal lead and copper concentrations at consumers' taps; and

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- D) The results of tap water samples the supplier collected under Section 611.1356 at least once every six months for one year after the supplier installed corrosion control.
- 3) Results Less Than Practical Quantitation Level (PQL) for Lead. Monitoring results deem supplier to have optimized corrosion control if the supplier submits results of tap water monitoring under Section 611.1356 and source water monitoring under Section 611.1358 demonstrating that for two consecutive six-month monitoring periods the difference between the 90th percentile tap water lead level, computed under Section 611.1350(c)(3), and the highest source water lead concentration is less than the PQL that Section 611.1359(a)(2)(A) specifies.
- A) Having a highest source water lead level below the MDL deems a supplier to have optimized corrosion control under this subsection (b)(3) if the 90th percentile tap water lead level is less than or equal to the lead PQL for two consecutive six-month monitoring periods.
- B) Any supplier this subsection (b)(3) deems to have optimized corrosion control must continue tap water monitoring for lead and copper no less frequently than once every three calendar years using the reduced number of sites Section 611.1356(c) specifies and collecting the samples at times and locations Section 611.1356(d)(4)(D) specifies.
- C) Any supplier this subsection (b)(3) deems to have optimized corrosion control must notify the Agency in writing under Section 611.1360(a)(3) of any upcoming long-term change in treatment or the addition of a new source, as that Section describes. The Agency must review and approve the addition of a new source or any long-term change in water treatment before the supplier adds the source or implements the long-term change.
- D) A supplier is not deemed to have optimized corrosion control under this subsection (b)(3) and must implement corrosion control treatment under subsection (b)(3)(E), unless the supplier meets the copper action level.

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- E) Any supplier this subsection (b)(3) no longer deems to have optimized corrosion control must implement corrosion control treatment under subsection (e). Any large system supplier this subsection (b)(3) no longer deems to have optimized corrosion control must adhere to the schedule that subsection (e) specifies for a medium-sized water system supplier, with the time periods for completing each step being triggered by the date the supplier is no longer deemed to have optimized corrosion control under this subsection (b)(3).
- c) Suppliers Not Required to Complete Corrosion Control Steps for Having Met Both Action Levels
- 1) Any small or medium-sized water system supplier, otherwise required to complete the corrosion control steps because it exceeded the lead or copper action level, may cease completing the treatment steps after fulfilling specific conditions:
- A) The supplier meets both the copper and lead action levels during each of two consecutive six-month monitoring periods under Section 611.1356; and
- B) The supplier submits the results for those two consecutive six-month monitoring periods to the Agency.
- 2) A supplier that ceases completing the corrosion control steps under subsection (c)(1) (or the Agency, if appropriate) must resume completion of the applicable treatment steps, beginning with the first treatment step that the supplier previously did not complete in its entirety, if the supplier thereafter exceeds the lead or copper action level during any monitoring period.
- 3) The Agency may issue a SEP requiring a supplier to repeat treatment steps the supplier previously completed if the Agency determines that this is necessary to properly implement the treatment requirements of this Section. The Agency must explain the basis for its decision in any SEP.

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- 4) A small or medium-sized water system supplier exceeding the lead or copper action level triggers the requirement to implement corrosion control treatment steps under subsection (e) (including systems deemed to have optimized corrosion control under subsection (b)(1)).
- d) Treatment Steps for Large Systems. Except as subsections (b)(2) and (b)(3) provide otherwise, a large system must complete certain corrosion control treatment steps as specific rules provide).
  - 1) Step 1: Initial monitoring during two consecutive six-month monitoring periods (under Sections 611.1356(d)(1) and 611.1357(b)).
  - 2) Step 2: Corrosion control studies (under Section 611.1352(c)).
  - 3) Step 3: The Agency approving optimal corrosion control treatment in a SEP (under Section 611.1352(d)).
  - 4) Step 4: Installing optimal corrosion control treatment (under Section 611.1352(e)).
  - 5) Step 5: Completing follow-up sampling (under Sections 611.1356(d)(2) and 611.1357(c)).
  - 6) Step 6: The Agency reviewing installed treatment and approving optimal water quality control parameters (under Section 611.1352(f)).
  - 7) Step 7: Complying with the Agency-specified optimal water quality control parameters (under Section 611.1352(g)) and continuing tap sampling (under Sections 611.1356(d)(3) and 611.1357(d)).
- e) Treatment Steps and Deadlines for Small and Medium-Sized Water Systems. Except as subsection (b) provides otherwise, a small and medium-sized system supplier must complete certain corrosion control treatment steps as specific rules provide before the indicated time periods.
  - 1) Step 1: The supplier must conduct initial tap sampling (under Sections 611.1356(d)(1) and 611.1357(b)) until the supplier either exceeds the lead or copper action level or becomes eligible for reduced monitoring under Section 611.1356(d)(4). A supplier exceeding the lead or copper action

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level must recommend optimal corrosion control treatment (under Section 611.1352(a)) within six months after the end of the monitoring period during which the exceedance occurred.

- 2) Step 2: Within 12 months after the end of the monitoring period during which a supplier exceeds the lead or copper action level, the Agency may require the supplier to perform corrosion control studies (under Section 611.1352(b)). If the Agency does not require the supplier to perform corrosion control studies, the Agency must issue a SEP specifying optimal corrosion control treatment (under Section 611.1352(d)) within the appropriate of specific timeframes:
  - A) For a medium-sized water system, within 18 months after the end of the monitoring period during which the supplier exceeded the lead or copper action level; or
  - B) For a small system, within 24 months after the end of the monitoring period during which the supplier exceeded the lead or copper action level.
- 3) Step 3: If the Agency requires a supplier to perform corrosion control studies under step 2 (subsection (e)(2)), the supplier must complete the studies (under Section 611.1352(c)) within 18 months after the Agency requires the supplier to conduct the studies.
- 4) Step 4: If a supplier performs corrosion control studies under step 2 (subsection (e)(2)), the Agency must issue a SEP approving optimal corrosion control treatment (under Section 611.1352(d)) within six months after the supplier completes step 3 (under subsection (e)(3)).
- 5) Step 5: The supplier must install optimal corrosion control treatment (under Section 611.1352(e)) within 24 months after the Agency approves that treatment.
- 6) Step 6: The supplier must complete follow-up sampling (under Sections 611.1356(d)(2) and 611.1357(c)) within 36 months after the Agency approves optimal corrosion control treatment.

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- 7) Step 7: The Agency must review the supplier's installation of treatment and issue a SEP approving optimal water quality control parameters (under Section 611.1352(f)) within six months after the supplier completes step 6 (under subsection (e)(6)).
- 8) Step 8: The supplier must comply with the Agency-approved optimal water quality control parameters (under Section 611.1352(g)) and continue tap sampling (under Sections 611.1356(d)(3) and 611.1357(d)).

BOARD NOTE: This Section corresponds with Section 611.1351 and derives from 40 CFR 141.81 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1352 Corrosion Control Treatment**

Each supplier must complete the corrosion control treatment requirements this Section describes that applying to the supplier under Section 611.1351.

- a) System Recommendation Regarding Corrosion Control Treatment
  - 1) Based on the results of lead and copper tap monitoring and water quality parameter monitoring, a small- or medium-sized system exceeding the lead or copper action level must recommend to the Agency that the supplier install one or more of the corrosion control treatments in subsection (c)(1) that the supplier believes constitutes optimal corrosion control for its system.
  - 2) The Agency may issue a SEP requiring the supplier to conduct additional water quality parameter monitoring under Section 611.1357(b) to assist the Agency in reviewing the supplier's recommendation.
- b) Agency-Required Studies of Corrosion Control Treatment. The Agency may issue a SEP requiring a small or medium-sized system supplier exceeding the lead or copper action level to perform corrosion control studies under subsection (c) to identify optimal corrosion control treatment for the supplier's system.
- c) Performance of Studies



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- 1) Any supplier performing corrosion control studies must evaluate the effectiveness of each of certain treatments and combinations of those treatments if appropriate to identify the optimal corrosion control treatment for the supplier's system:
  - A) Adjusting alkalinity and pH;
  - B) Adjusting calcium hardness; and
  - C) Adding a phosphate- or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.
  
- 2) The supplier must evaluate each of the corrosion control treatments using pipe rig/loop tests; metal coupon tests; partial-system tests; or analyses based on documented analogous treatments in other systems of similar size, water chemistry, and distribution system configuration.
  
- 3) The supplier must measure specific water quality parameters in any tests the supplier conducts under this subsection (c) before and after evaluating the corrosion control treatments in subsection (c)(1):
  - A) Lead;
  - B) Copper;
  - C) pH;
  - D) Alkalinity;
  - E) Calcium;
  - F) Conductivity;
  - G) Orthophosphate (when the supplier uses an inhibitor containing a phosphate compound);
  - H) Silicate (when the supplier uses an inhibitor containing a silicate compound); and

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- D) Water temperature.
- 4) The supplier must identify all chemical or physical constraints that limit or prohibit using any particular corrosion control treatment and document those constraints:
- A) With data and documentation showing that a particular corrosion control treatment adversely affects other water treatment processes when another supplier uses that treatment in a system with water having comparable water quality characteristics; or
- B) With data and documentation demonstrating that the supplier previously evaluated a particular corrosion control treatment, finding either that the treatment is ineffective or adversely affects other water quality treatment processes.
- 5) The supplier must evaluate the effect of the evaluated corrosion control treatment chemicals on other water quality treatment processes.
- 6) Based on an analysis of the data the supplier generated during each evaluation, the supplier must recommend in writing to the Agency the treatment option the corrosion control studies indicate constitutes optimal corrosion control treatment for the supplier's system. The supplier must give a rationale for its recommendation together with all supporting documentation subsections (c)(1) through (c)(5) specify.
- d) Agency Approval of Treatment
- 1) Based on consideration of available information, including applicable studies the supplier performed under subsection (c) and a supplier's recommended treatment alternative, the Agency must either issue a SEP requiring the corrosion control treatment option the supplier recommended or deny a SEP and require the supplier to further investigate and recommend alternative corrosion control treatments from among those in subsection (c)(1). When approving optimal corrosion control treatment, the Agency must consider the effects that additional corrosion control treatment will have on water quality parameters and other water quality treatment processes.

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- 2) The Agency must notify the supplier of the basis for this determination in any SEP it issues under subsection (d)(1).
- e) Installing Optimal Corrosion Control. A supplier must properly install and operate the optimal corrosion control treatment throughout its distribution system that the Agency approved under subsection (d).
- f) Agency Review of Treatment and Specification of Optimal Water Quality Control Parameters. The Agency must evaluate the results of all lead and copper tap samples and water quality parameter samples the supplier submits and determine whether the supplier properly installs and operates the optimal corrosion control treatment the Agency approves under subsection (d).
- 1) Upon reviewing the results of the supplier's tap water and water quality parameter monitoring, both before and after installing optimal corrosion control treatment, the Agency must issue a SEP specifying operating parameters:
  - A) A minimum value or range of values for pH at each entry point to the distribution system;
  - B) A minimum pH value for all tap samples. This value must be equal to or greater than 7.0, unless the Agency determines that a pH 7.0 is not technologically feasible or is not necessary for the supplier to optimize corrosion control;
  - C) If the supplier uses a corrosion inhibitor, a minimum inhibitor concentration or range of concentrations, for each entry point to the distribution system and in all tap samples, that the Agency determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;
  - D) If the supplier adjusts alkalinity as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity for each entry point to the distribution system and in all tap samples;

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- E) If the supplier uses calcium carbonate stabilization as part of corrosion control, a minimum concentration or a range of concentrations for calcium in all tap samples.
- 2) The values for the applicable water quality control parameters in subsection (f)(1) must be those the Agency determines reflect optimal corrosion control treatment for the supplier.
- 3) The Agency may issue a SEP approving values for additional water quality control parameters the Agency determines reflect optimal corrosion control for the supplier's system.
- 4) The Agency must explain these determinations giving the basis for its decisions when issuing a SEP.
- g) Continued Operation and Monitoring. All suppliers optimizing corrosion control must continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameter values at or above minimum values or within ranges the Agency approved under subsection (f), under this subsection (g) for all samples the supplier collects under Section 611.1357(d) through (f). The supplier must determine whether it complies with this subsection (g) every six months, as Section 611.1357(d) specifies. A water system does not comply with this subsection (g) in any six-month period during which the supplier has excursions from any Agency-specified parameter on more than nine days. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the Agency-designated minimum value or outside the Agency-designated range. The supplier calculates daily values as subsections (g)(1) through (g)(3) provide. The Agency must delete results from this calculation that it determines are obvious sampling errors.
- 1) On days when the supplier collects more than one measurement for a water quality parameter at a sampling location, the daily value is the average of all results the supplier collected during the day, regardless of whether the supplier collected the samples through continuous monitoring, grab sampling, or a combination of both.

BOARD NOTE: Corresponding 40 CFR 141.82(g)(1) (2020) further provides as follows: If USEPA approves an alternative formula under 40 CFR 142.16 in the State's application for a program revision submitted

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under 40 CFR 142.12, the approved formula is used to aggregate multiple measurements at a sampling point for the water quality parameter in lieu of the formula in this subsection (g).

- 2) On days when the supplier collects only one measurement for a water quality parameter at a sampling location, the daily value is that measurement.
- 3) On days when the supplier collects no measurement for a water quality parameter at a sampling location, the daily value is the daily value calculated on the most recent day on which the supplier measured the water quality parameter at the sample site.

h) Modifying Agency Treatment Decisions

- 1) On its own initiative or in response to a request by the supplier, the Agency may issue a SEP modifying its determination of the optimal corrosion control treatment under subsection (d) or of the optimal water quality control parameters under subsection (f).
- 2) A supplier must request modification in writing, explaining the propriety of the modification and providing supporting documentation.
- 3) The Agency may modify its determination if it determines that a change will ensure that the supplier continues optimizing corrosion control treatment. A revised determination must give the new treatment requirements, explain the basis for the Agency's decision, and provide an implementation schedule for completing the treatment modifications.
- 4) Any interested person may submit information to the Agency bearing on whether the Agency should exercise its discretion and issue a SEP modifying its determination under subsection (h)(1). An Agency determination not to act on information an interested person submits is not an Agency determination for the purposes of Sections 39 and 40 of the Act.

i) USEPA Treatment Decisions. Under 40 CFR 142.19, USEPA reserves the prerogative to review Agency treatment determinations under subsections (d), (f),

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or (h) and issue federal treatment determinations consistent with 40 CFR 141.82(d), (e), or (h) (2020) if USEPA finds that certain conditions exist:

- 1) The Agency fails to issue a treatment determination by the applicable deadlines in Section 611.1351 (corresponding with 40 CFR 141.81 (2020));
- 2) The Agency abuses its discretion in a substantial number of instances or in instances affecting a substantial population; or
- 3) The technical aspects of the Agency's determination would be indefensible in a federal enforcement action taken against the supplier.

BOARD NOTE: This Section corresponds with Section 611.1352 and derives from 40 CFR 141.82 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1353 Source Water Treatment**

A supplier must complete source water monitoring and treatment requirements (under subsection (b) and Sections 611.1356 and 611.1358) before specific deadlines.

- a) Deadlines for Completing Source Water Treatment Steps
  - 1) Step 1: A supplier exceeding the lead or copper action level must complete lead and copper and source water monitoring (under Section 611.1358(b)) and recommend treatment to the Agency (under subsection (b)(1)) within 180 days after the end of the monitoring period during which the supplier exceeded the action level.
  - 2) Step 2: The Agency must issue a SEP determining source water treatment (under subsection (b)(2)) within six months after the supplier submits monitoring results under step 1.
  - 3) Step 3: If the Agency requires source water treatment, the supplier must install that treatment (under subsection (b)(3)) within 24 months after the Agency completes step 2.

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- 4) Step 4: The supplier must complete follow-up tap water monitoring (under Section 611.1356(d)(2)) and source water monitoring (under Section 611.1358(c)) within 36 months after completion of step 2.
- 5) Step 5: The Agency must issue a SEP reviewing the supplier's installation and operation of source water treatment and specify MPCs for lead and copper (under subsection (b)(4)) within six months after the Agency completes step 4.
- 6) Step 6: The supplier must comply with the Agency-specified lead and copper MPCs (under subsection (b)(4)) and continue source water monitoring (under Section 611.1358(d)).

b) Source Water Treatment Requirements

- 1) System Treatment Recommendation. Any supplier exceeding the lead or copper action level must recommend to the Agency in writing one of the source water treatments in subsection (b)(2). A supplier may recommend no treatment based on a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.
- 2) Agency Determination Regarding Source Water Treatment
  - A) The Agency must evaluate the results of all source water samples the supplier submitted to determine whether source water treatment is necessary to minimize lead or copper levels in water the supplier delivers to users' taps.
  - B) If the Agency determines treatment necessary, the Agency must issue a SEP requiring the supplier to install and operate either the source water treatment the supplier recommended (if any) or another from among specific source water treatment techniques:
    - i) ion exchange;
    - ii) reverse osmosis;
    - iii) lime softening; or

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- iv) coagulation/filtration.
  - C) The Agency may require the supplier to submit, on or before a certain date, any additional information as the Agency determines is necessary to aid its review.
  - D) The Agency must notify the supplier in writing of its determination, stating the basis for its decision.
- 3) Installing Source Water Treatment. A supplier must properly install and operate the source water treatment the Agency approves under subsection (b)(2).
- 4) Agency Reviewing Source Water Treatment and Specifying Maximum Permissible Source Water Levels (MPCs)
  - A) The Agency must review the source water samples the supplier took both before and after the supplier installs source water treatment and determine whether the supplier properly installs and operates the approved source water treatment.
  - B) Based on its review, the Agency must issue a SEP approving the lead and copper MPCs for finished water entering the supplier's distribution system. The MPC levels must reflect the contaminant removal capability of the treatment when properly operated and maintained.
  - C) The Agency must explain the basis for its decision under subsection (b)(4)(B).
- 5) Continued Operation and Maintenance. A supplier must maintain lead and copper levels below the MPCs the Agency approved at every sampling point the supplier monitors under Section 611.1358. The supplier does not comply with this subsection (b) if the level of lead or copper at any sampling point is greater than the MPC the Agency approved under subsection (b)(4)(B).
- 6) Modifying Agency Treatment Decisions



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- A) On its own initiative, or in response to a request by the supplier, the Agency may issue a SEP modifying its determination of the source water treatment under subsection (b)(2) or the lead and copper MPCs under subsection (b)(4).
- B) A supplier must make a request to modify in writing, explaining the propriety of the modification, and providing supporting documentation.
- C) The Agency may issue a SEP modifying its determination if it concludes that the change is necessary to ensure that the supplier continues minimizing lead and copper concentrations in source water.
- D) A revised determination under subsection (b)(6)(C) must state the new treatment requirements, explain the basis for the Agency's decision, and provide a schedule for completing the treatment modifications.
- E) Any interested person may submit information to the Agency in writing bearing on whether the Agency should exercise its discretion and issue a SEP modifying its determination under subsection (b)(2). An Agency determination not to act on information an interested person submits is not an Agency determination for the purposes of Sections 39 and 40 of the Act.
- 7) USEPA Treatment Decisions. Under 40 CFR 142.19, USEPA reserves the prerogative to review Agency treatment determinations under subsections (b)(2), (b)(4), or (b)(6) and issue federal treatment determinations consistent with 40 CFR 141.83(b)(2), (b)(4), and (b)(6) (2020) if USEPA finds that certain conditions exist:
  - A) the Agency fails to issue a treatment determination by the applicable deadline in subsection (a);
  - B) the Agency abuses its discretion in a substantial number of instances or in instances affecting a substantial population; or

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- C) the technical aspects of the Agency's determination would be indefensible in a federal enforcement action taken against the supplier.

BOARD NOTE: This Section corresponds with Section 611.1353 and derives from 40 CFR 141.83 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1354 Lead Service Line Replacement****a) Suppliers That Must Replace Lead Service Lines**

- 1) If the results from tap samples the supplier took under Section 611.1356(d)(2) exceed the lead action level after the supplier installs corrosion control or source water treatment (whichever sampling occurs later), the supplier must recommence replacing lead service lines under subsection (b).
- 2) If a supplier violates Section 611.1351 or 611.1353 by failing to install source water or corrosion control treatment, the Agency may issue a SEP requiring the supplier to begin lead service line replacement under this Section after the date when Section 611.1356(d)(2) required the supplier to conduct monitoring.

**b) Annually Replacing Lead Service Lines****1) Initiating a Lead Service Line Replacement Program**

- A) A supplier that subsection (a) requires to begin replacing lead service lines must annually replace at least seven percent of the initial number of lead service lines in its distribution system.
- B) The initial number of lead service lines in a distribution system is the number of lead lines in place when the supplier begins its replacement program.
- C) The supplier must identify the initial number of lead service lines in its distribution system, indicating the portions of the system the supplier owns, based on a materials evaluation, including the

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evaluation Section 611.1356(a) requires and relevant legal authorities (e.g., contracts, local ordinances, etc.) regarding the portion the supplier owns.

- D) The first year of lead service line replacement must begin on the first day after the end of the monitoring period during which the supplier exceeded the action level under subsection (a).
- E) If the supplier must monitor annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the supplier took the sample exceeding the action level.
- F) If the Agency establishes an alternative monitoring period in a SEP, the end of the monitoring period is the last day of that period.

2) Resuming a Lead Service Line Replacement Program after Cessation

- A) A supplier resuming after ceasing its lead service line replacement program, as subsection (f) allows, must update its remaining lead service lines inventory to include the sites the supplier previously determined did not require replacement under subsection (c).
- B) The supplier must divide its updated remaining lead service lines inventory by the number of remaining years in the program to determine the number of lines that the supplier must replace each year. (Seven percent lead service line replacement is based on a 15-year replacement program, so that, for example, a supplier resuming lead service line replacement after previously conducting two years of replacement would divide its updated inventory by 13.)
- C) For a supplier completing a 15-year lead service line replacement program, the Agency must issue a SEP determining a schedule for replacing or retesting lines under the completed program that the supplier previously tested, whenever the supplier re-exceeds the action level.

- c) Service Lines Not Needing Replacement. A supplier is not required to replace any individual lead service line for which the lead concentrations in all tap

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samples taken under Section 611.1356(b)(3) are less than or equal to the lead action level (0.015 mg/ℓ).

- d) A water supplier must replace that portion of the lead service line that it owns. If the supplier does not own the entire lead service line, the supplier must notify the owner of the line, or the owner's authorized agent, that the supplier will replace the portion of the service line that it owns and offer to replace the owner's portion of the line at the owner's expense. A supplier needs not bear the cost of replacing the privately-owned portion of the service line, nor needs the supplier replace the privately-owned portion of the service line if the owner chooses not to pay the cost of replacing that portion of the line or if State, local, or common law precludes replacing the privately-owned portion of the line. A water supplier that does not replace the entire length of the service line also must complete certain tasks:

1) Notice Prior to Beginning Work

- A) At least 45 days prior to beginning partial replacement of a lead service line, the water supplier must notify the residents of all buildings the line serves explaining that the residents may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead.
- B) The Agency may issue a SEP allowing the water supplier to provide notice under the previous sentence less than 45 days before beginning partial lead service line replacement if the Agency determines that the replacement is together with emergency repairs.
- C) The supplier must also inform the residents the line serves that the supplier will, at the supplier's expense, collect a representative sample of the water from the partially replaced service line for analysis of lead content, as Section 611.1356(b)(3) requires, within 72 hours after partially replacing the service line. The supplier must collect the sample and report the results of the analysis to the owner and the residents the line serves within three business days after receiving the results.

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- D) Mailed notices post-marked within three business days after the supplier receives the results are timely.
- 2) The water supplier must provide the information subsection (d)(1) requires to the residents of individual dwellings by mail or by other methods the Agency approved in a SEP. If the service line serves multi-family dwellings, the Agency must allow the water supplier to post the information at a conspicuous location.
- e) Agency Determining a Shorter Replacement Schedule
- 1) The Agency must issue a SEP requiring a supplier to replace lead service lines on a shorter schedule than this Section otherwise requires if the Agency determines, taking into account the number of lead service lines in the system, that the supplier's shorter replacement schedule is feasible.
- 2) The Agency must notify the supplier of its finding under subsection (e)(1) within six months after monitoring triggers the supplier into beginning lead service line replacement under subsection (a).
- f) Ceasing Service Line Replacement
- 1) Any supplier may cease replacing lead service lines whenever the supplier fulfills both two conditions:
- A) First-draw tap samples the supplier collected under Section 611.1356(b)(2) meet the lead action level during each of two consecutive six-month monitoring periods; and
- B) The supplier submitted those results to the Agency.
- 2) If any of the supplier's first-draw tap samples later exceeds the lead action level, the supplier must resume replacing lead service lines under subsection (b)(2).
- g) To demonstrate that it complies with subsections (a) through (d), a supplier must report to the Agency the information Section 611.1360(e) specifies.

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BOARD NOTE: This Section corresponds with Section 611.1354 and derives from 40 CFR 141.84 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1355 Public Education and Supplemental Monitoring**

A supplier exceeding the lead action level based on tap water samples under Section 611.1356 must deliver the public education materials subsection (a) requires under subsection (b). A supplier exceeding the lead action level must sample the tap water of any customer requesting sampling under subsection (c). A supplier must deliver a consumer notice of lead tap water monitoring results to persons the supplier serves at each site that the supplier tests, as subsection (d) specifies.

a) Content of Written Public Education Materials

- 1) Community Water Systems and Non-Transient Non-Community Water Systems. A CWS or NTNCWS supplier must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed in subsections (a)(1)(A) through (a)(1)(F). In addition, the supplier must use the verbatim language in subsections (a)(1)(A), (a)(1)(B), and (a)(1)(F), except for replacing the text in brackets with the system-specific information. Any additional information a supplier presents must be consistent with the information in subsections (a)(1)(A) through (a)(1)(F), and the supplier must present the additional information in plain language that the general public can understand. The supplier must submit all written public education materials to the Agency.
  - A) IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF SUPPLIER] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.
  - B) Health Effects of Lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys and can interfere with the production of red blood cells that carry oxygen to all parts of

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your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

C) Sources of Lead

- i) Explain what lead is.
- ii) Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home and building plumbing materials and service lines that may contain lead.
- iii) Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

BOARD NOTE: The supplier must use text providing the information this subsection (a)(1)(C) describes.

D) Discuss the steps the consumer can take to reduce exposure to lead in drinking water.

- i) Encourage running the water to flush out the lead.
- ii) Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.
- iii) Explain that boiling water does not reduce lead levels.
- iv) Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or water treatment.

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- v) Suggest that parents have their child's blood tested for lead.

BOARD NOTE: The supplier must use text providing the information this (a)(1)(D) describes.

- E) Explain why there are elevated levels of lead in the supplier's drinking water (if known) and what the supplier is doing to reduce the lead levels in homes and buildings in this area.

BOARD NOTE: The supplier must use text providing the information this (a)(1)(E) describes.

- F) For more information, call us at [INSERT THE SUPPLIER'S NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT THE SUPPLIER'S WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit USEPA's Web site at [www.epa.gov/lead](http://www.epa.gov/lead) or contact your health care provider.

- 2) Community Water Systems. In addition to including the elements subsection (a)(1) specifies, a CWS supplier must include two information items:

- A) The supplier must tell consumers how to get their water tested; and
- B) The supplier must discuss lead in plumbing components and the difference between low-lead and lead-free components.

BOARD NOTE: At corresponding 40 CFR 141.85(a)(1) (2020), USEPA allowed the State to require prior approval of written public information materials. Rather than require prior Agency approval, the Board chooses to allow the Agency to raise any deficiencies that it may perceive using its existing procedure for review of public education materials. The Agency outlines its standard practice for review of public information materials: The Agency provides a comprehensive public education packet to the supplier together with the notice that the supplier exceeds the lead action level. That packet includes guidance and templates for the supplier to use in preparing and distributing its public education materials. The supplier must send a copy of the public education materials that it distributes to the Agency, and the Agency reviews the copy of the materials after their



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distribution to the public. The Agency directly communicates to the supplier any perceived defects in the materials. The Agency will request correction when it perceives minor defects in future distributions of the public education materials, or the Agency will request a redistribution of corrected public education materials when it perceives major defects in the materials the supplier already distributed.

b) Delivering Public Education Materials

1) The public education materials of a supplier serving a large proportion of non-English-speaking consumers must contain information in the appropriate languages regarding the importance of the notice, or the materials must contain a telephone number or address where a water consumer may contact the supplier to obtain a translated copy of the public education materials or to request assistance in the appropriate language.

2) A CWS supplier exceeding the lead action level on the basis of tap water samples under Section 611.1356 not already conducting public education tasks under this Section must complete public education tasks within 60 days after the end of the monitoring period in which the exceedance occurred:

A) The CWS supplier must deliver printed materials complying with subsection (a) to all of its bill-paying customers.

B) Methods of Delivery for a CWS Supplier

i) The CWS supplier must contact customers who are most at risk by delivering education materials complying with subsection (a) to local public health agencies, even if those agencies not located within the supplier's service area, along with an informational notice encouraging distribution to all of the agencies' potentially affected customers or the supplier's consumers. The supplier must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community-based organizations serving the target populations, which may include organizations outside the service area of the supplier. If local health

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agencies provide lists, the supplier must deliver education materials that comply with subsection (a) to each of the organizations on the provided lists.

- ii) The CWS supplier must contact customers who are most at risk by delivering materials complying with subsection (a) to the organizations in subsections (b)(2)(H)(i) through (b)(2)(H)(vi) that are located within the supplier's service area, along with an informational notice encouraging distribution to all the organization's potentially affected customers or supplier's users.

BOARD NOTE: The Board moved the text of 40 CFR 141.85(b)(2)(ii)(B)(1) through (b)(2)(ii)(B)(6) (2020) to appear as subsections (b)(2)(H)(i) through (b)(2)(H)(vi) to comport with allowed indent levels.

- iii) The CWS supplier must make a good faith effort to locate the organizations in subsections (b)(2)(I)(i) through (b)(2)(I)(iii) that are located within the service area and deliver materials complying with subsection (a) to those organizations, along with an informational notice encouraging distribution to all potentially affected customers or users. The good faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if those organizations are not located within the supplier's service area.

BOARD NOTE: The Board moved the text of 40 CFR 141.85(b)(2)(ii)(C)(1) through (b)(2)(ii)(C)(3) (2020) to appear as subsections (b)(2)(I)(i) through (b)(2)(I)(iii) to comport with allowed indent levels.

- C) No less often than quarterly, the CWS supplier must provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the verbatim text of the paragraph below, except replacing the text in brackets with system-specific information:

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[INSERT NAME OF SUPPLIER] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF SUPPLIER] [or visit (INSERT SUPPLIER'S WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the Illinois Environmental Protection Agency, Division of Public Water Supply; specifically, the Agency may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

- D) The CWS supplier must post material complying with subsection (a) on the supplier's website if the CWS supplier serves a population greater than 100,000.
- E) The CWS supplier must submit a press release to newspaper, television, and radio stations.
- F) In addition to subsections (b)(2)(A) through (b)(2)(E), the CWS supplier must implement at least three activities from one or more of the categories listed below. The supplier must determine the educational content and selection of these activities consulting with the Agency.
- i) Public service announcements.
  - ii) Paid advertisements.
  - iii) Public area information displays.
  - iv) E-mails to customers.
  - v) Public meetings.
  - vi) Household deliveries.
  - vii) Targeted individual customer contact.

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viii) Direct material distribution to all multi-family homes and institutions.

ix) Other Agency-approved methods.

G) For a CWS supplier that must monitor annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or on the last day of an alternative monitoring period the Agency sets in a SEP.

H) Organizations That the CWS Supplier Must Contact When Required to Do So under Subsection (b)(2)(B)(iii)

i) Public and private schools or school boards.

ii) Women, Infants and Children (WIC) and Head Start programs.

iii) Public and private hospitals and medical clinics.

iv) Pediatricians.

v) Family planning clinics.

vi) Local welfare agencies.

BOARD NOTE: This subsection (b)(2)(H) derives from 40 CFR 141.85(b)(2)(ii)(B)(1) through (b)(2)(ii)(B)(6) (2020), moved here to comport with allowed indent levels.

I) Organizations That the CWS Supplier Must Contact When Required to Do So Under Subsection (b)(2)(B)(iii)

i) Licensed childcare centers.

ii) Public and private preschools.

iii) Obstetricians-gynecologists and midwives.

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BOARD NOTE: This subsection (b)(2)(H) derives from 40 CFR 141.85(b)(2)(ii)(C)(1) through (b)(2)(ii)(C)(3) (2020), moved here to comport with allowed indent levels.

- 3) As long as a CWS supplier exceeds the action level, it must repeat the activities in subsection (b)(2), as subsections (b)(3)(A) through (b)(3)(D) require.
- A) The CWS supplier must repeat the tasks in subsections (b)(2)(A), (b)(2)(B), and (b)(2)(D) every 12 months.
  - B) The CWS supplier must repeat tasks in subsection (b)(2)(C) with each billing cycle.
  - C) The CWS supplier serving a population greater than 100,000 must post and retain material on a publicly accessible website under subsection (b)(2)(D).
  - D) The CWS supplier must repeat the task in subsection (b)(2)(E) twice every 12 months on a schedule agreed by the Agency in a SEP. The Agency must, on a case-by-case basis, issue a SEP extending the time for the supplier to complete the public education tasks in subsection (b)(2) beyond the 60-day limit if the Agency determines that the supplier needs the extended time to implement; however, the Agency must issue the SEP granting any extension before the 60-day deadline expires.
- 4) Within 60 days after the end of the monitoring period in which a NTNCWS supplier exceeds the lead action level (unless it already is repeating public education tasks under subsection (b)(5)), the supplier must deliver the public education materials subsection (a) specifies.
- A) The supplier must deliver the public education materials by certain means:
    - i) The NTNCWS supplier must post informational posters on lead in drinking water in a public place or common area in each of the buildings the supplier serves; and

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- ii) The NTNCWS supplier must distribute informational pamphlets or brochures on lead in drinking water to each person the NTNCWS supplier serves. The Agency may issue a SEP allowing the system to use electronic transmission in lieu of or combined with printed materials as long as the electronic transmission achieves the same or better coverage.
  - B) For a NTNCWS supplier that must monitor annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or on the last day of an alternative monitoring period the Agency sets in a SEP.
- 5) A NTNCWS supplier must repeat the tasks in subsection (b)(4) at least once during each calendar year in which the supplier exceeds the lead action level. The Agency must, on a case-by-case basis, issue a SEP extending the time for the supplier to complete the public education tasks in subsection (b)(2) beyond the 60-day limit if the Agency determines that the extended time is needed for implementation purposes; however, the Agency must issue any SEP granting any extension prior to when the 60-day deadline expires.
- 6) A supplier may stop delivering public education materials after the supplier meets the lead action level during the most recent six-month monitoring period under Section 611.1356. The supplier must begin public education anew under this Section if the supplier subsequently exceeds the lead action level during any six-month monitoring period.
- 7) A CWS supplier may apply to the Agency in writing to use only the text in subsection (a)(1) in lieu of the text in subsections (a)(1) and (a)(2) and to perform the tasks in subsections (b)(4) and (b)(5) in lieu of the tasks in subsections (b)(2) and (b)(3) under specific circumstances:
  - A) The supplier is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

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- B) The supplier provides water as part of the cost of services provided, not separately charging for water consumption.
- 8) A CWS supplier serving 3,300 or fewer people may limit certain aspects of its public education programs:
- A) For notice under subsection (b)(2)(F), a supplier serving 3,300 or fewer people must implement at least one of the activities.
- B) For notice under subsection (b)(2)(B), a supplier serving 3,300 or fewer people may limit the distribution of the public education materials to facilities and organizations pregnant women and children are most likely to visit.
- C) For notice under subsection (b)(2)(E), the Agency may issue a SEP waiving this requirement for a supplier serving 3,300 or fewer persons, as long as the supplier distributes notices to every household the supplier serves.
- c) Supplemental Monitoring and Notification of Results. A supplier failing to meet the lead action level in tap samples under Section 611.1356 must offer to sample the tap water of any customer requesting it. The supplier needs not pay for collecting or analyzing the sample, nor must the supplier itself collect and analyze the sample.
- d) Requirement for Consumer Notice of Tap Water Monitoring Results
- 1) Consumer Notice Requirement. A supplier must provide a notice of the individual tap results from lead tap water monitoring under Section 611.1356 to the persons the water system serves at the specific sampling site from which the supplier took the sample (e.g., the occupants of the residence where the supplier tested the tap).
- 2) Timing of Consumer Notice. The supplier must provide the consumer notice as soon as practical, but no later than 30 days after the supplier learns of the tap monitoring results.
- 3) Content of Consumer Notice. The consumer notice must include the results of lead tap water monitoring for the tap the supplier tested, an

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explanation of the health effects of lead, a list of steps consumers can take to reduce exposure to lead in drinking water, and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from Section 611.883(c).

- 4) Delivery of Consumer Notice. The supplier must provide the consumer notice to persons it serves at the tap the supplier tested, either by mail or by another method the Agency approves in a SEP. For example, upon Agency approval, a NTNCWS supplier could post the results on a bulletin board in the facility enabling users to review the information. The supplier must provide the notice to customers at sample taps the supplier tested, including consumers who do not receive water bills.

BOARD NOTE: This Section corresponds with Section 611.1355 and derives from 40 CFR 141.85 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1356 Tap Water Monitoring for Lead and Copper**

- a) Sampling Site Location
- 1) Selecting a Pool of Targeted Sampling Sites
- A) Before the applicable date for beginning monitoring under subsection (d)(1), a supplier must complete evaluating the materials in its distribution system to identify a pool of targeted sampling sites complying with this Section.
- B) The pool of targeted sampling sites must be large enough to ensure that the supplier can collect the number of lead and copper tap that the supplier can collect the number of lead and copper tap samples subsection (c) requires.
- C) The supplier must select the sites for collecting first-draw tap samples from this pool of targeted sampling sites.



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D) The supplier must not select as sampling sites any faucets having point-of-use or point-of-entry treatment devices designed to remove or capable of removing inorganic contaminants.

2) Materials Evaluation

A) A supplier must use the information on lead, copper, and galvanized steel it collected under 40 CFR 141.42(d) (special monitoring for corrosivity characteristics) when conducting a materials evaluation.

B) When evaluating the information collected under 40 CFR 141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites under subsection (a), the supplier must review other sources of information to identify sufficient sampling sites:

i) All plumbing codes, permits, and records in building department files indicating the installed plumbing materials in publicly- and privately-owned structures connected to the distribution system;

ii) All inspections and records of the distribution system indicating the material composition of the service connections connecting a structure to the distribution system;

iii) All existing water quality information, including the results of all prior analyses of the system or individual structures connected to the system, that would indicate locations particularly susceptible to high lead or copper concentrations; and

iv) The supplier must seek to collect this information when possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities).

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3) Tiers of Sampling Sites. A supplier must categorize the sampling sites within its pool according to tiers:

A) CWS Tier 1 Sampling Sites. “CWS Tier 1 sampling sites” must include certain single-family structures:

- i) Those containing copper pipes with lead solder installed after 1982 or containing lead pipes; or
- ii) Those having a lead service line.

BOARD NOTE: This subsection (a)(3)(A) derives from segments of 40 CFR 141.86(a)(3) (2020). This allows the pool of CWS tier 1 sampling sites to consist exclusively of structures having lead service lines.

B) CWS Tier 2 Sampling Sites. “CWS Tier 2 sampling sites” must include certain buildings, including multiple-family structures:

- i) Those containing copper pipes with lead solder installed after 1982 or containing lead pipes; or
- ii) Those having a lead service line.

BOARD NOTE: This subsection (a)(3)(B) derives from segments of 40 CFR 141.86(a)(4) (2020). This allows the pool of CWS tier 2 sampling sites to consist exclusively of structures having lead service lines.

C) CWS Tier 3 Sampling Sites. “CWS Tier 3 sampling sites” must include certain single-family structures: those containing copper pipes with lead solder installed before 1983.

BOARD NOTE: This subsection (a)(3)(C) derives from segments of 40 CFR 141.86(a)(5) (2020).

D) NTNCWS Tier 1 Sampling Sites. “NTNCWS Tier 1 sampling sites” must include certain buildings:

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- i) Those containing copper pipes with lead solder installed after 1982 or containing lead pipes; or
- ii) Those having a lead service line.

BOARD NOTE: This subsection (a)(3)(D) derives from segments of 40 CFR 141.86(a)(6) (2020). This allows the pool of NTNCWS tier 1 sampling sites to consist exclusively of buildings having lead service lines.

- E) Alternative NTNCWS Sampling Sites. “Alternative NTNCWS sampling sites” must include certain buildings: those containing copper pipes with lead solder installed before 1983.

BOARD NOTE: This subsection (a)(3)(E) derives from segments of 40 CFR 141.86(a)(7) (2020).

- 4) Selection of Sampling Sites. A supplier must select sampling sites for its sampling pool using specific criteria:
  - A) CWS Suppliers. A CWS supplier must use CWS tier 1 sampling sites, except that the supplier may include CWS tier 2 or CWS tier 3 sampling sites in its sampling pool under certain circumstances:
    - i) If multiple-family residences comprise at least 20 percent of the structures the supplier serves, the supplier may use CWS tier 2 sampling sites in its sampling pool; or

BOARD NOTE: This subsection (a)(4)(A)(i) derives from a segment of 40 CFR 141.86(a)(3)(ii) (2020).
    - ii) If the CWS supplier does not have a sufficient number of CWS tier 1 sampling sites on its distribution system, the supplier may use CWS tier 2 sampling sites in its sampling pool; or

BOARD NOTE: This subsection (a)(4)(A)(ii) derives from a segment of 40 CFR 141.86(a)(4) (2020).

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- iii) If the CWS supplier does not have a sufficient number of CWS tier 1 and CWS tier 2 sampling sites on its distribution system, the supplier may complete its sampling pool with CWS tier 3 sampling sites.

BOARD NOTE: This subsection (a)(4)(A)(iii) derives from a segment of 40 CFR 141.86(a)(5) (2020).

- iv) If the CWS supplier does not have a sufficient number of CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites, the supplier must use those CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites that it has and complete its sampling pool with representative sites throughout its distribution system for the balance of its sampling sites. For this subsection (a)(4)(A)(iv), a representative site is a site having plumbing materials commonly found at other sites the water system serves.

BOARD NOTE: This subsection (a)(4)(A)(iv) derives from segments of 40 CFR 141.86(a)(5) (2020).

B) NTNCWS Suppliers

- i) An NTNCWS supplier must select NTNCWS tier 1 sampling sites for its sampling pool.

BOARD NOTE: This subsection (a)(4)(B)(i) derives from segments of 40 CFR 141.86(a)(6) (2020).

- ii) If the NTNCWS supplier has an insufficient number of NTNCWS tier 1 sampling sites, the supplier may complete its sampling pool with alternative NTNCWS sampling sites.

BOARD NOTE: This subsection (a)(4)(B)(ii) derives from segments of 40 CFR 141.86(a)(7) (2020).

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iii) If the NTNCWS supplier has an insufficient number of NTNCWS tier 1 sampling sites and NTNCWS alternative sampling sites, the supplier must use representative sites throughout its distribution system. For the purpose of this subsection (a)(4)(B)(ii), a representative site is a site where the plumbing materials are commonly found at other sites served by the water system serves.

BOARD NOTE: This subsection (a)(4)(B)(iii) derives from segments of 40 CFR 141.86(a)(7) (2020).

- C) Suppliers with Lead Service Lines. Any supplier whose distribution system contains lead service lines must draw samples during each six-month monitoring period from specific sampling sites:
- i) 50 percent of the samples from sampling sites containing lead pipes or having copper pipes with lead solder; and
  - ii) 50 percent of those samples from sites having a lead service line.
  - iii) A supplier that cannot identify a sufficient number of sampling sites having a lead service line must collect first-draw tap samples from all of the sites identified as having lead service lines.

BOARD NOTE: This subsection (a)(4)(C) derives from segments of 40 CFR 141.86(a)(8) (2020). This allows the pool of sampling sites to consist exclusively of structures or buildings having lead service lines.

b) Sample Collection Methods

- 1) All tap samples a supplier collects for lead and copper under this Subpart G, with the exception of lead service line samples under Section 611.1354(d) and samples under subsection (b)(5), must be first-draw tap samples.

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2) First-Draw Tap Samples

- A) Every first-draw tap sample for lead and copper must be one liter in volume and have stood motionless in the plumbing system of the sampling site for at least six hours.
- B) For residential buildings, the supplier must collect first-draw tap samples from residential housing from the cold-water kitchen or bathroom sink tap.
- C) For non-residential buildings, the supplier must collect first-draw tap samples one-liter in volume from an interior tap occupants typically use for consuming water.
- D) The supplier must collect non-first-draw tap samples that it collects in lieu of first-draw tap samples under subsection (b)(5) one liter in volume from an interior tap occupants typically use for consuming water.
- E) The supplier may collect first-draw tap samples or allow residents to collect first-draw tap samples after instructing the residents in the sampling procedures this subsection (b) specifies.
  - i) To avoid problems of residents handling nitric acid, the supplier may acidify first-draw tap samples up to 14 days after the supplier or a resident collects the sample.
  - ii) After adding acid to resolubilize the metals, a sample must stand in its original container for the time the USEPA-approved method specifies before the laboratory analyzes the sample.
- F) If a supplier allows residents to perform sampling under subsection (b)(2)(D), the supplier may not challenge the accuracy of sampling results based on alleged errors in sample collection.

3) Service Line Samples

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- A) Each service line sample must be one liter in volume and have stood motionless in the lead service line for at least six hours.
- B) Lead service line samples must be collected in one of three ways:
- i) At the tap after flushing the calculated volume of water between the tap and the lead service line (based on the interior diameter and length of the pipe between the tap and the lead service line);
  - ii) Tapping directly into the lead service line; or
  - iii) If the sampling site is a single-family structure, allowing the water to run until there is a significant change in temperature indicating water that stood in the lead service line.
- 4) Follow-Up First-Draw Tap Samples
- A) A supplier must collect each follow-up first-draw tap sample from the same sampling site where the previous samples originated.
- B) If, for any reason, the supplier cannot access a sampling site to collect a follow-up tap sample, the supplier may collect the follow-up tap sample from another sampling site in its sampling pool, as long as the new site meets the same targeting criteria and is within reasonable proximity of the original site.
- 5) Substitute Non-First-Draw Tap Samples
- A) A NTNCWS supplier or a CWS supplier meeting the criteria in Sections 611.1355(b)(7)(A) and (b)(7)(B) not having enough taps for first-draw tap samples, as Section 611.102 defines the term, may apply to the Agency in writing for a SEP allowing the supplier to substitute non-first-draw tap samples.
- B) A supplier approved to substitute non-first-draw tap samples must collect as many first-draw tap samples from appropriate taps as

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possible and identify sampling times and locations that likely give the longest standing time for the remaining sites.

C) The Agency may grant a SEP waiving the requirement for prior Agency approval of a supplier's chosen non-first-draw sampling sites.

c) Number of Samples

- 1) A supplier must collect at least one sample each from the number of sites in the first column of Table D (labelled "standard monitoring") during each six-month monitoring period subsection (d) specifies.
- 2) A supplier conducting reduced monitoring under subsection (d)(4) must collect one sample each from the number of sites in the second column of Table D (labelled "reduced monitoring") during each reduced monitoring period subsection (d)(4) specifies. The reduced monitoring sites must represent the sites standard monitoring requires. A supplier whose system has fewer than five drinking water taps capable of use for human consumption that meet the sampling site criteria of subsection (a) must collect multiple samples from individual taps to reach the required number of sampling sites Table D requires. To accomplish this, the supplier must collect at least one sample from each tap, then additional samples from those taps on different days during the monitoring period, to collect a total number of samples meeting the required number of sampling sites. Alternatively, the Agency may issue a SEP allowing the supplier whose system has fewer than five drinking water taps to collect a number of samples that is fewer than the number of sites this subsection (c) specifies if the Agency determines that the supplier samples 100 percent of all taps capable of use for human consumption and that the reduced number of samples will produce the same results as collecting multiple samples from some taps. The Agency must base any approval of reducing the minimum number of samples on a request from the supplier or Agency on on-site verification. The Agency may specify sampling locations in a SEP when a system conducts reduced monitoring.

d) Timing of Monitoring



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- 1) Six-Month Sampling Periods. Six-month sampling periods begin on January 1 and July 1 of each year.
  - A) A large system must monitor during each consecutive six-month period, except as subsection (d)(4)(B) provides otherwise.
  - B) A small or medium-sized system must monitor during each consecutive six-month monitoring period until either of two occurrences:
    - i) The supplier exceeds the lead or copper action level and must, therefore, implement the corrosion control treatment requirements under Section 611.1351 and continue monitoring under subsection (d)(2); or
    - ii) The supplier meets the lead and copper action levels during each of two consecutive six-month monitoring periods, which allows the supplier to reduce monitoring under subsection (d)(4).
- 2) Monitoring after Installation of Corrosion Control and Source Water Treatment
  - A) Any large system supplier installing optimal corrosion control treatment under Section 611.1351(d)(4) must monitor during two consecutive six-month monitoring periods.
  - B) Any small or medium-sized system supplier installing optimal corrosion control treatment under Section 611.1351(e)(5) must monitor during two consecutive six-month monitoring periods within 36 months after the Agency approves optimal corrosion control treatment, as Section 611.1351(e)(6) specifies.
  - C) Any supplier installing source water treatment under Section 611.1353(a)(3) must monitor during two consecutive six-month monitoring periods within 36 months after completing step 2, as Section 611.1353(a)(4) specifies.

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- 3) Monitoring after the Agency Specifies Water Quality Parameter Values for Optimal Corrosion Control. After the Agency specifies the values for water quality control parameters under Section 611.1352(f), the supplier must monitor during each subsequent six-month monitoring period, with the first six-month monitoring period beginning on the date the Agency specifies the optimal values.
- 4) Reduced Monitoring
- A) Reducing to Annual Monitoring for Small and Medium-Sized System Suppliers Meeting the Lead and Copper Action Levels. A small or medium-sized system supplier meeting the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of samples under subsection (c) and sampling frequency to once per year. A small or medium-sized system supplier collecting fewer than five samples as subsection (c) specifies and meeting the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce its frequency of sampling to once per year. In no instance may the supplier reduce the number of samples below the minimum of one sample per available tap. The supplier may begin this reduced sampling only during the calendar year immediately following the end of the second consecutive six-month monitoring period.
- B) SEP Allowing Reduction to Annual Monitoring for Suppliers Maintaining Water Quality Control Parameters
- i) The Agency may issue a SEP allowing a supplier meeting the lead action level and maintaining the range of values for water quality control parameters reflecting optimal corrosion control treatment that the Agency specifies under Section 611.1352(f) during each of two consecutive six-month monitoring periods to reduce its monitoring frequency to once per year and its number of lead and copper samples to that subsection (c) specifies. This reduced sampling may only begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

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ii) The Agency must review monitoring, treatment, and other relevant information the supplier submits under Section 611.1360, and the Agency must issue a SEP upon determining that the supplier is eligible to reduce its monitoring frequency to once every three years under this subsection (d)(4).

iii) The Agency must review its determination under subsection (d)(4)(B)(i) when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency. The Agency must revise its determination if the Agency deems this appropriate based on its review.

C) Reduction to Triennial for Small and Medium-Sized System Suppliers

i) Small- and Medium-Sized Water System Suppliers Meeting Lead and Copper Action Levels. A small or medium-sized system supplier meeting the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years.

ii) SEP for Suppliers Meeting Optimal Corrosion Control Treatment. The Agency may issue a SEP allowing any supplier meeting the range of values for the water quality control parameters reflecting optimal corrosion control treatment the Agency specifies under Section 611.1352(f) during three consecutive years of monitoring may reduce its monitoring frequency from annual to once every three years. A supplier collecting samples once every three years must collect the samples no later than every third calendar year.

iii) The Agency must review its determination under subsection (d)(4)(C)(ii) when the supplier submits new

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monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency. The Agency must revise its determination if the Agency deems this appropriate based on its review.

- D) Sampling at a Reduced Frequency. A supplier reducing the number and frequency of sampling must collect these samples from the pool of targeted sampling sites the supplier selected under subsection (a), preferentially using those sampling sites from the highest tier first. A supplier sampling annually or less frequently must conduct lead and copper tap sampling during June, July, August, or September, unless the Agency approves a different sampling period under subsection (d)(4)(D)(i).
- i) The Agency may grant a SEP approving a different period for a supplier to conduct lead and copper tap sampling to a system collecting a reduced number of samples. The duration of the period must not exceed four consecutive months and must represent a time of normal operation when the highest lead levels are most likely to occur. For a NTNCWS supplier not operating during any of June through September and whose normal operating period when the highest levels of lead are most likely to occur is not known, the Agency must designate a period that represents a time of normal operation for the system. This reduced sampling may only begin during the Agency-designated period in the calendar year immediately following the end of the second consecutive six-month monitoring period, for a system initiating annual monitoring, or in the three-year period following the end of the third consecutive calendar year of annual monitoring, for a supplier initiating triennial monitoring.
- ii) A supplier monitoring annually and collecting samples during the months of June through September that receives Agency approval to alter its sampling period under subsection (d)(4)(D)(i) must collect its next round of samples during a time period ending no later than 21

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months after its previous round of sampling. A supplier monitoring once every three years and collecting samples during the months of June through September that receives Agency approval to alter the sampling collection period under subsection (d)(4)(D)(i) must collect its next round of samples during a time period ending no later than 45 months after the previous round of sampling. The supplier must collect subsequent rounds of sampling annually or once every three years, as this Section requires. A small system supplier collecting samples during the months of June through September, receiving a waiver under subsection (g) and receiving Agency approval to alter its sample collection period under subsection (d)(4)(D)(i) must collect its next round of samples before the end of the nine-year compliance cycle (as Section 611.101 defines the term).

- E) Any water system demonstrating for two consecutive six-month monitoring periods that the tap water lead level computed under Section 611.1350(c)(3) is less than or equal to 0.005 mg/ℓ and that the tap water copper level computed under Section 611.1350(c)(3) is less than or equal to 0.65 mg/ℓ may reduce its number of samples under subsection (c) and reduce its sampling frequency to once every three calendar years.
- F) Resumption of Standard Monitoring
- i) Small or Medium-Sized Suppliers Exceeding the Lead or Copper Action Level. A small or medium-sized system supplier subject to reduced monitoring exceeding the lead or copper action level must resume sampling under subsection (d)(3) and collect the number of samples that subsection (c) specifies for standard monitoring. The small or medium-sized system supplier exceeding the lead or copper action level must also conduct water quality parameter monitoring under Section 611.1357 (b), (c), or (d) (as appropriate) during the six-month monitoring period during which the supplier exceeded the action level. The small or medium-sized system supplier may resume annual

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tap monitoring for lead and copper at the reduced number of sites subsection (c) specifies after the supplier completes two subsequent consecutive six-month rounds of monitoring complying with subsection (d)(4)(A). The small or medium-sized system supplier may resume monitoring once every three years for lead and copper at the reduced number of sites after demonstrating through subsequent rounds of monitoring that comply with subsection (d)(4)(C) or (d)(4)(E).

- ii) Suppliers Failing to Operate within Water Quality Control Parameters. Any supplier subject to reduced monitoring frequency failing to meet the lead action level during any four-month monitoring period or failing to operate within the range of values for the water quality control parameters Section 611.1352(f) specifies for more than nine days in any six-month period Section 611.1357(d) specifies must conduct tap water sampling for lead and copper at the frequency subsection (d)(3) specifies, must collect the number of samples subsection (c) specifies for standard monitoring, and must resume monitoring for water quality parameters within the distribution system under Section 611.1357(d). This standard tap water sampling must begin no later than the six-month period beginning January 1 of the calendar year after the supplier exceeds the lead action level or deviates from a water quality parameter. A supplier may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system only if the supplier fulfills the conditions in subsection (d)(4)(H).

BOARD NOTE: The Board moved the last sentence of 40 CFR 141.86(d)(4)(vi)(B) and 40 CFR 141.86(d)(4)(vi)(B)(1) through (d)(4)(vi)(B)(3) (2020) to subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii) to comport with allowed indent levels.

- G) Any supplier subject to reduced monitoring under subsection (d)(4) must notify the Agency in writing under Section 611.1360(a)(3) of any upcoming long-term change in treatment or adding a new

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source as that Section describes. The Agency must review and approve the addition of a new source or long-term change in water treatment before the supplier may implement it. The Agency may issue a SEP requiring the system to resume sampling under subsection (d)(3) and collecting the number of samples for standard monitoring under subsection (c) or take other appropriate steps, like increased water quality parameter monitoring or re-evaluating its corrosion control treatment, considering the potentially different water quality considerations.

- H) A supplier that subsection (d)(4)(F) requires to resume monitoring under Section 611.1357(d) may resume reduced monitoring for lead and copper at the tap and water quality parameters within the distribution system under the specific conditions:
- i) The supplier may resume annual monitoring for lead and copper at the tap at the reduced number of sites subsection (c) specifies after the supplier completes two subsequent six-month rounds of monitoring complying with subsection (d)(4)(B) and the supplier receives written approval from the Agency in a SEP appropriate to resuming reduced monitoring on an annual frequency. The supplier must begin this sampling during the calendar year immediately following the end of the second consecutive six-month monitoring period.
  - ii) The supplier may resume tap monitoring for lead and copper once every three years at the reduced number of sites after demonstrating through subsequent rounds of monitoring that the supplier complies with either subsection (d)(4)(C) or (d)(4)(E) and the Agency issues a SEP allowing the supplier to resume monitoring once every three years.
  - iii) The supplier may reduce the number of water quality parameter tap water samples it collects under Section 611.1357(e)(1) and its sampling frequency under Section 611.1357(e)(2). The supplier may not resume triennial tap water monitoring for water quality parameters until after

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the supplier demonstrates requalifying for triennial monitoring under Section 611.1357(e)(2).

BOARD NOTE: Subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii) derive from the last sentence of 40 CFR 141.86(d)(4)(vi)(B) and (d)(4)(vi)(B)(I) through (d)(4)(vi)(B)(3) (2020), moved here to comport with allowed indent levels.

- e) Additional Monitoring. The supplier and the Agency must consider the results of any monitoring the supplier conducts in addition to the minimum requirements in this Section in making any determinations (i.e., calculating the 90th percentile lead action level or the copper level) under this Subpart G.
- f) Invalidation of Lead or Copper Tap Water Samples. A sample the Agency invalidates under this subsection (f) does not count toward determining lead or copper 90th percentile levels under Section 611.1350(c)(3) or toward complying with subsection (c).
- 1) The Agency must invalidate a lead or copper tap water sample if it determines that any of certain conditions exists:
    - A) The laboratory establishes that improper sample analysis caused erroneous results;
    - B) The supplier took the sample from a site that did not meet the site selection criteria in this Section;
    - C) The sample container sustained damage in transit; or
    - D) There is substantial reason to believe that someone tampered with the sample.
  - 2) The supplier must report the results from all samples to the Agency and submit all supporting documentation for samples the supplier believes the Agency should invalidate.
  - 3) To invalidate a sample under subsection (f)(1), the Agency must document its decision and rationale for the decision in writing. The Agency may not



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invalidate a sample solely because a follow-up sample result is higher or lower than that of the original sample.

- 4) The supplier must collect replacement samples for any samples the Agency invalidates under this Section if the supplier has too few samples to meet the minimum requirements of subsection (c) after the Agency invalidates samples. The supplier must take any replacement samples as soon as possible but no later than the latter of 20 days after the Agency invalidates the original sample or before the end of the applicable monitoring period. The supplier must not use replacement samples it takes after the end of the applicable monitoring period to meet the monitoring requirements of a subsequent monitoring period. The supplier must take replacement samples at the same locations where it took the invalidated samples or, if that is not possible, at other locations the supplier did not use for sampling during the monitoring period.
  
- g) Monitoring Waivers for Small System Suppliers. Any small system supplier complying with the criteria in this subsection (g) may apply to the Agency for a SEP reducing its lead and copper monitoring frequency under this Section to once every nine years (i.e., a “full waiver”) if the supplier meets all of the materials criteria subsection (g)(1) specifies and all of the monitoring criteria subsection (g)(2) specifies. Any small system supplier that meets the criteria subsections (g)(1) and (g)(2) only for lead or copper may apply to the Agency for a SEP reducing its tap water monitoring frequency to once every nine years for that contaminant only (i.e., a “partial waiver”).
  - 1) Materials Criteria. The supplier must demonstrate that its distribution system, service lines, and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials or copper-containing materials, as this subsection (g)(1) defines these terms:
    - A) Lead. To qualify for a SEP granting a full waiver or a partial waiver of the tap water monitoring requirements for lead (i.e., a “lead waiver”), the supplier must provide certification and supporting documentation to the Agency demonstrating that its system is free of all lead-containing materials:

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- i) The system has no plastic pipes or service lines containing lead plasticizers; and
- ii) The system is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass- or bronze-alloy fittings and fixtures, unless those fittings and fixtures comply with Section 611.126(b).

BOARD NOTE: Corresponding 40 CFR 141.86(g)(1)(i)(B) (2020) specifies “any standard established pursuant to 42 USC 300g-6(e) (SDWA section 1417(e))”. Congress changed the lead standards for fittings and fixtures in the Reduction of Lead in Drinking Water Act, P.L. 111-380, section 2(a)(2) and (b), 124 Stat. 4131 (Jan. 4, 2011). The Board incorporated the statutory changes into this Section by referencing Section 611.126(b).

- B) Copper. To qualify for a SEP granting a full waiver or a partial waiver of the tap water monitoring requirements for copper (i.e., a “copper waiver”), the supplier must provide certification and supporting documentation to the Agency demonstrating that its system contains no copper pipes or copper service lines.
- 2) Monitoring Criteria for Waiver Issuance. The supplier must have completed at least one six-month round of standard tap water monitoring for lead and copper at Agency-approved sites and from the number of sites subsection (c) requires and demonstrate to the Agency that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing or copper-containing materials, as appropriate, meet certain criteria:
- A) Lead Levels. To qualify for a full waiver or a lead partial waiver, the supplier must demonstrate that its 90th percentile lead level does not exceed 0.005 mg/ℓ.
  - B) Copper Levels. To qualify for a full waiver or a copper partial waiver, the supplier must demonstrate that its 90th percentile copper level does not exceed 0.65 mg/ℓ.

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- 3) Agency Approval of Waiver Application. The Agency must notify the supplier of its waiver determination in a SEP stating the basis of its decision and any condition on the waiver. As a condition on the waiver, the Agency may require the supplier to perform specific activities (e.g., limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver, etc.) to avoid the risk of lead or copper concentration of concern in tap water. The small system supplier must continue monitoring for lead and copper at the tap as subsections (d)(1) through (d)(4) require, as appropriate, until the supplier receives written notification from the Agency approving the waiver.
- 4) Monitoring Frequency for Suppliers with Waivers
- A) A supplier with a full waiver must conduct tap water monitoring for lead and copper under subsection (d)(4)(D) at the reduced number of sampling sites subsection (c) identifies at least once every nine years and provide to the Agency the materials certification subsection (g)(1) specifies for both lead and copper together with the monitoring results. The supplier must collect samples every nine years no later than the ninth calendar year.
- B) A supplier with a partial waiver must conduct tap water monitoring for the waived contaminant under subsection (d)(4)(D) at the reduced number of sampling sites subsection (c) specifies at least once every nine years and provide to the Agency the materials certification subsection (g)(1) specifies pertaining to the waived contaminant together with the monitoring results. Such a supplier also must continue to monitor for the non-waived contaminant in under the applicable of subsections (d)(1) through (d)(4).
- C) A supplier with a full or partial waiver must notify the Agency in writing under Section 611.1360(a)(3) of any upcoming long-term change in treatment or adding a new source, as that rule describes. The Agency must review and approve adding a new source or long-term change in water treatment before the supplier implements it. The Agency may add or modify waiver conditions (e.g., require recertification that the supplier's system is free of lead-containing or copper-containing materials, require additional

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rounds of monitoring, etc.) if the Agency determines that the modifications are necessary to address system treatment or source water changes.

- D) If a supplier with a full or partial waiver becomes aware that its system is no longer free of lead- or copper-containing materials, as appropriate (e.g., as a result of new construction or repairs), the supplier must notify the Agency in writing no later than 60 days after becoming aware of the change.
- 5) Continued Eligibility. If the supplier continues to comply with subsection (g)(4), the waiver will renew automatically, unless any of the conditions in subsections (g)(5)(A) through (g)(5)(C) occur. A supplier whose waiver the Agency revokes may re-apply for a waiver when the supplier again meets the appropriate materials and monitoring criteria of subsections (g)(1) and (g)(2).
- A) A full waiver or a lead partial waiver does not renew if the supplier no longer satisfies the materials criteria of subsection (g)(1)(A) or has a 90th percentile lead level greater than 0.005 mg/ℓ.
- B) A full waiver or a copper partial waiver does not renew if the supplier no longer satisfies the materials criteria of subsection (g)(1)(B) or has a 90th percentile copper level greater than 0.65 mg/ℓ.
- C) A waiver terminates when the Agency notifies the supplier that the Agency revokes the waiver, in writing and describing the basis of its decision.
- 6) Requirements Following Waiver Revocation. A supplier whose full or partial waiver the Agency revokes must comply with specific corrosion control treatment and lead and copper tap water monitoring requirements:
- A) If the supplier exceeds the lead or copper action level, the supplier must implement corrosion control treatment within the deadlines Section 611.1351(e) specifies and any other applicable requirements under this Subpart G.

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- B) If the supplier meets both the lead and the copper action levels, the supplier must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sampling sites subsection (c) specifies.
- 7) Pre-Existing Waivers. A small system supplier waiver the Agency granted in writing prior to April 11, 2000 remains in effect under certain conditions:
- A) If the supplier demonstrates that its system is free of both lead-containing and copper-containing materials, as subsection (g)(1) requires, and that its 90th percentile lead levels and 90th percentile copper levels comply with subsection (g)(2), the waiver remains in effect so long as the supplier continues eligible for a waiver under subsection (g)(5). The supplier must complete its first round of tap water monitoring under subsection (g)(4) no later than nine years after the supplier last monitored for lead and copper at the tap.
- B) If the supplier complies with the materials criteria of subsection (g)(1) but has not complied with the monitoring criteria of subsection (g)(2), the supplier must conduct a round of monitoring for lead and copper at the tap demonstrating that it complied with subsection (g)(2). Thereafter, the waiver remains in effect as long as the supplier complies with the continued eligibility criteria in subsection (g)(5). The supplier must complete its first round of tap water monitoring under subsection (g)(4) no later than nine years after the supplier conducts the monitoring under subsection (g)(2).

BOARD NOTE: This Section corresponds with Section 611.1356 and derives from 40 CFR 141.86 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### Section 611.1357 Monitoring for Water Quality Parameters

A large system supplier or any small or medium-sized system supplier exceeding the lead or copper action level must monitor water quality parameters in addition to lead and copper under this Section.

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a) General Requirements1) Sample Collection Methods

A) Using Tap Samples. In totality, all tap samples a supplier collects must represent water quality throughout the supplier's distribution system, considering the number of persons served, the different sources of water, the different treatment methods the supplier employs, and seasonal variability. Although a supplier may conveniently conduct tap sampling for water quality parameters at sites it uses for coliform sampling under Subpart L, the supplier needs not do so, and the supplier needs not perform tap sampling under this Section at taps it targeted for lead and copper sampling under Section 611.1356(a).

B) Using Entry Point Samples. A supplier must collect samples at entry points to the distribution system from locations representing each source after treatment. If a supplier draws water from more than one source and combines the sources before distribution, the supplier must sample at an entry point to the distribution system during normal operating conditions (i.e., when the supplier uses water representing all sources).

2) Number of Samples

A) Tap Samples. A supplier must collect two tap samples for applicable water quality parameters during each six-month monitoring period under subsections (b) through (e) from the number of sites the first column of Table F (labelled "standard monitoring") indicates.

B) Entry Point Samples

i) Initial Monitoring. Except as subsection (c)(3) provides otherwise, a supplier must collect two samples for each applicable water quality parameter at each entry point to its distribution system during each six-month monitoring period subsection (b) specifies.

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ii) Subsequent Monitoring. A supplier must collect one sample for each applicable water quality parameter at each entry point to its distribution system during each six-month monitoring period subsections (c) through (e) specify.

b) Initial Sampling

- 1) Large Systems. A large system supplier must measure the applicable water quality parameters subsection (b)(3) specifies at taps and at each entry point to its distribution system during each six-month monitoring period Section 611.1356(d)(1) specifies.
- 2) Small and Medium-Sized Systems. A small or medium-sized water system supplier must measure the applicable water quality parameters subsection (b)(3) specifies at the locations this subsection (b) specifies during each six-month monitoring period Section 611.1356(d)(1) specifies during which the supplier exceeds the lead or copper action level.
- 3) Water Quality Parameters
  - A) pH;
  - B) Alkalinity;
  - C) Orthophosphate, when the supplier uses an inhibitor containing a phosphate compound;
  - D) Silica, when the supplier uses an inhibitor containing a silicate compound;
  - E) Calcium;
  - F) Conductivity; and
  - G) Water temperature.

c) Monitoring after Installing Corrosion Control

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- 1) Large Systems. A large system supplier installing optimal corrosion control treatment under Section 611.1351(d)(4) must measure the water quality parameters at the locations and frequencies subsections (c)(4) and (c)(5) specify during each six-month monitoring period Section 611.1356(d)(2)(A) specifies.
- 2) Small and Medium-Sized Systems. A small or medium-sized system installing optimal corrosion control treatment under Section 611.1351(e)(5) must measure the water quality parameters at the locations and frequencies subsections (c)(4) and (c)(5) specify during each six-month monitoring period Section 611.1356(d)(2)(B) specifies during which the supplier exceeds the lead or copper action level.
- 3) Groundwater Systems. A groundwater system supplier can limit entry point sampling under subsection (c)(5) to those entry points representing water quality and treatment conditions throughout the system. If water from untreated groundwater sources mixes with water from treated groundwater sources, the system must monitor for water quality parameters at both representative entry points receiving treatment and representative entry points not receiving treatment. Prior to starting monitoring under this subsection (c)(3), the supplier must provide written information to the Agency identifying the selected entry points and documentation sufficient to demonstrate that the sites represent water quality and treatment conditions throughout the system, including information on seasonal variability.
- 4) Tap Water Samples. The supplier must collect two water samples at each tap for each of five water quality parameters:
  - A) pH;
  - B) Alkalinity;
  - C) Orthophosphate if the supplier uses an inhibitor containing a phosphate compound;
  - D) Silica if the supplier uses an inhibitor containing a silicate compound; and



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E) Calcium if the supplier uses calcium carbonate stabilization as part of corrosion control.

5) Entry Point Samples. Except as subsection (c)(3) provides otherwise, a supplier must collect one sample at each entry point to its distribution system every two weeks (bi-weekly) for three water quality parameters:

A) pH;

B) If the supplier adjusts alkalinity as part of optimal corrosion control, a reading of the chemical dosage rate the supplier uses to adjust alkalinity and the alkalinity concentration; and

C) If the supplier uses a corrosion inhibitor as part of optimal corrosion control, a reading of the inhibitor dosage rate the supplier uses and the orthophosphate or silica concentration.

BOARD NOTE: Subsections (c)(1) and (c)(2) derive from 40 CFR 141.87(c) (2020), subsection (c)(3) derives from 40 CFR 141.87(c)(3) (2020), subsection (c)(4) derives from 40 CFR 141.87(c)(1) (2020), and subsection (c)(5) derives from 40 CFR 141.87(c)(2) (2020).

d) Monitoring after the Agency Specifies Water Quality Parameter Values for Optimal Corrosion Control

1) Large-Sized Water Systems. After the Agency specifies the values for water quality control parameters reflecting optimal corrosion control treatment under Section 611.1352(f), a large-sized water system supplier must monitor the applicable water quality parameters under subsection (c) and determine whether the supplier complies with Section 611.1352(g) every six months, with the first six-month period to begin on the sooner of January 1 or July 1 after the Agency specifies the optimal values under Section 611.1352(f).

2) Small and Medium-Sized System Suppliers. A small or medium-sized system supplier must monitor during each six-month monitoring period this subsection (d) specifies during which the supplier exceeds the lead or copper action level. For a small or medium-sized system supplier subject to a reduced monitoring frequency under Section 611.1356(d)(4) at the

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time it exceeds the action level, the start of the applicable six-month monitoring period under this subsection (d) coincides with the start of the applicable monitoring period under Section 611.1356(d)(4).

- 3) A supplier must determine whether it complies with Agency-designated optimal water quality parameter as Section 611.1352(g) specifies.

e) Reduced Monitoring

- 1) Reduced Tap Monitoring. A supplier maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under subsection (d) must continue monitoring at the entry points to the distribution system as subsection (c)(5) specifies. The supplier may collect two samples from each tap for applicable water quality parameters from the reduced number of sites the second column of Table F (Standard Monitoring) indicates during each subsequent six-month monitoring period.

2) Reduced Monitoring Frequency

A) Staged Reductions in Monitoring Frequency

- i) Annual Monitoring. A supplier maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment under Section 611.1352(f) during three consecutive years of monitoring may reduce its tap sampling frequency for applicable water quality parameters subsection (e)(1) specifies from every six months to annually. The supplier may only begin this reduced sampling during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs.
- ii) Triennial Monitoring. A supplier maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment under Section 611.1352(f) during three consecutive years of annual monitoring under subsection (e)(2)(A)(i) may reduce its tap sampling

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frequency for applicable water quality parameters subsection (e)(1) specifies from annually to once every three years. The supplier must conduct this triennial monitoring no later than every third calendar year.

- B) A supplier may reduce its tap sampling frequency for applicable water quality parameters in subsection (e)(1) to once every three years if the supplier demonstrates that it complies with subsections (e)(2)(B)(i) through (e)(2)(B)(iii) during two consecutive monitoring periods, subject to subsection (e)(2)(B)(iv).
- i) The supplier must demonstrate that its tap water 90th percentile level for lead is less than or equal to the PQL for lead in Section 611.1359(a)(1)(B).
  - ii) The supplier must demonstrate that its tap water 90th percentile level for copper is less than or equal to 0.65 mg/l for copper in Section 611.1350(c)(2).
  - iii) The supplier must demonstrate that it maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment the Agency specified under Section 611.1352(f).
  - iv) The supplier must complete triennial monitoring no later than every third calendar year.
- 3) A supplier sampling annually or triennially must collect these samples evenly throughout the calendar year to reflect seasonal variability.
- 4) A supplier on a reduced monitoring frequency under this subsection (e) failing to operate at or above the minimum value or within the range of values for the water quality parameters the Agency specifies under Section 611.1352(f) for more than nine days in any six-month period Section 611.1352(g) specifies must resume tap water sampling complying with the number and frequency of samples subsection (d) requires. A supplier thus ceasing reduced monitoring may resume annual monitoring for water quality parameters at the tap at the reduced number of sites subsection (e)(1) specifies after completing two subsequent consecutive six-month

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rounds of monitoring complying with subsection (e)(1). The supplier may resume triennial tap water monitoring for water quality parameters at the reduced number of sites after demonstrating through subsequent rounds of monitoring that the supplier complies with subsection (e)(2)(A) or (e)(2)(B).

- f) Additional Monitoring by Suppliers. The supplier and the Agency must consider any monitoring results and what this Section requires in making any determinations (i.e., determining concentrations of water quality parameters) under this Section or Section 611.1352.

BOARD NOTE: This Section corresponds with Section 611.357 and derives from 40 CFR 141.87 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1358 Monitoring for Lead and Copper in Source Water**

- a) Sampling Location, Collection Methods, and Number of Samples
- 1) A supplier failing to meet the lead or copper action level on the basis of tap samples under Section 611.1356 must collect lead and copper source water samples under specific requirements for sample location, number of samples, and collection methods:
- A) A groundwater supplier must take a minimum of one sample at every entry point to the distribution system representing each well after treatment (a “sampling point”). The supplier must take one sample at the same sampling point unless conditions make another sampling point more closely represent a source or treatment plant.
- B) A surface water supplier must take a minimum of one sample at every entry point to the distribution system after treatment or in the distribution system at a sampling point. The supplier must take each sample at the same sampling point unless conditions make another sampling point more closely represent a source or treatment plant.

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BOARD NOTE: For this subsection (a)(1)(B), a system using a combination of surface water and groundwater sources is a surface water system.

C) If a supplier draws water from more than one source and combines the sources before distribution, the supplier must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water represents all sources being used).

D) The Agency may issue a SEP reducing the total number of samples a supplier must analyze by allowing the supplier to composite samples. Certified laboratory personnel must composite the samples. A composite sample may include a maximum of five samples. However, if the lead concentration in the composite sample is greater than or equal to 0.001 mg/ℓ or the copper concentration is greater than or equal to 0.160 mg/ℓ, the supplier must do either of two things:

i) The supplier must take and analyze a follow-up sample within 14 days at each sampling point included in the composite sample; or

ii) If duplicate samples or sufficient volumes of the original samples are available from each sampling point the certified laboratory used in the composite sample, the supplier may use those instead of resampling.

2) SEP Requiring an Additional Sample

A) Upon determining that sampling indicates exceedance of the lead or copper MPC under Section 611.1353(b)(4), the Agency must issue a SEP requiring the supplier to collect one additional sample as soon as possible after the initial sample at the same sampling point but before two weeks after the supplier took the initial sample.

B) If a supplier takes an Agency-required confirmation sample for lead or copper, the supplier must average the results obtained from

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the initial sample with those from the confirmation sample to determine whether it complies with the Agency-specified lead and copper MPCs.

- i) For averaging, consider any analytical result below the MDL as zero.
  - ii) Consider any value above the MDL but below the PQL either as the measured value or one-half the PQL.
- b) Monitoring Frequency after System Exceeds Tap Water Action Level. A supplier exceeding the lead or copper action level in tap sampling must collect one source water sample from each entry point to its distribution system no later than six months after the end of the monitoring period during which the supplier exceeds the lead or copper action level. For annual or less frequent monitoring periods, the end of the monitoring period is September 30 of the calendar year during which the sampling occurs or the last day of any alternate period the Agency establishes in a SEP.
- c) Monitoring Frequency after Installation of Source Water Treatment. A supplier installing source water treatment under Section 611.1353(a)(3) must collect an additional source water sample from each entry point to its distribution system during each of two consecutive six-month monitoring periods on or before 36 months after completing step 2, as Section 611.1353(a)(4) specifies.
- d) Monitoring Frequency after the Agency Specifies the Lead and Copper MPCs or Determines That Source Water Treatment Is Not Needed
  - 1) A supplier must monitor at the frequency subsection (d)(1)(A) or (d)(1)(B) specifies if the Agency specifies the MPCs under Section 611.1353(b)(4) or determines that the supplier needs not install source water treatment under Section 611.1353(b)(2).
    - A) GWS Suppliers
      - i) A GWS supplier sampling under subsection (d)(1) must collect samples once during the three-year compliance period (as Section 611.101 defines the term) during which

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the Agency makes its determination under Section 611.1353(b)(4) or 611.1353(b)(2).

ii) A GWS supplier sampling under subsection (d)(1) must sample once during each subsequent compliance period.

iii) A supplier must collect triennial samples every third calendar year.

B) A SWS or mixed system supplier must collect samples once during each calendar year, the first annual monitoring period to begin during the year in which the Agency makes its determination under Section 611.1353(b)(4) or 611.1353(b)(2).

2) A supplier needs not sample source water for lead or copper if the supplier meets the action level for the specific contaminant in all tap water samples during the entire source water sampling period under subsection (d)(1)(A) or (d)(1)(B).

e) Reduced Monitoring Frequency

1) A GWS supplier may reduce its source water monitoring frequency for lead and copper to once during each nine-year compliance cycle (as Section 611.101 defines the term), provided the supplier collects the samples no later than every ninth calendar year, and only if the supplier meets one of certain criteria:

A) The supplier demonstrates that finished drinking water entering the distribution system remains below the MPCs for lead and copper the Agency specifies under Section 611.1353(b)(4) during at least three consecutive compliance periods under subsection (d)(1); or

B) The Agency determines in a SEP that the supplier does not need source water treatment, and the supplier demonstrates that its source water concentrations of lead was less than or equal to 0.005 mg/ℓ and copper was less than or equal to 0.65 mg/ℓ during at least three consecutive compliance periods during which the supplier sampled under subsection (d)(1).

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- 2) A SWS or mixed system supplier may reduce its monitoring frequency subsection (d)(1) requires to once during each nine-year compliance cycle (as Section 611.101 defines the term) if the supplier collects the samples no later than every ninth calendar year, and only if the supplier meets one of certain criteria:
- A) The supplier demonstrates that finished drinking water entering its distribution system remains below the MPCs for lead and copper the Agency specifies under Section 611.1353(b)(4) for at least three consecutive years; or
- B) The Agency issues a SEP determining that the supplier does not need source water treatment, and the supplier demonstrates that its source water concentrations of lead was less than or equal to 0.005 mg/ℓ and copper was less than or equal to 0.65 mg/ℓ during at least three consecutive years.
- 3) A supplier using a new source of water may not reduce its monitoring for lead or copper until after the supplier demonstrates by samples it collected from the new source during three consecutive monitoring periods of the appropriate duration subsection (d)(1) provides that lead or copper levels are below the MPC the Agency specifies under Section 611.1353(a)(4).

BOARD NOTE: This Section corresponds with Section 611.358 and derives from 40 CFR 141.88 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1359 Analytical Methods**

The supplier must conduct analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature using the methods in Section 611.611(a).

- a) Only a certified laboratory in one of the categories in Section 611.490(a) may conduct analyses for lead and copper to demonstrate that a supplier complies with this Subpart G. To obtain certification for conducting analyses for lead and copper, a laboratory must fulfill specific conditions:



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- 1) The laboratory must analyze lead- and copper-containing performance evaluation samples provided by USEPA or the Agency;
- 2) The laboratory must achieve certain quantitative acceptance limits:
  - A) For lead:  $\pm 30$  percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.005 mg/l (the PQL for lead is 0.005 mg/l);
  - B) For copper:  $\pm 10$  percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.050 mg/l (the PQL for copper is 0.050 mg/l);
- 3) The laboratory must achieve the method detection limit (MDL) for lead of 0.001 mg/l using the procedures in 35 Ill. Adm. Code 186 and appendix B to 40 CFR 136: "Definition and Procedure for the Determination of the Method Detection Limit—Revision 1.11", incorporated by reference in Section 611.102(c). The laboratory needs only accomplish this if the laboratory will process source water composite samples under Section 611.1358(a)(1)(D); and
- 4) The laboratory must have current certification to perform analyses under the specifications this subsection (a)(1) describes.

BOARD NOTE: This subsection (a) corresponds with Section 611.359(a) and derives from 40 CFR 141.89(a) and (a)(1) (2020).

- b) The Agency must issue a SEP allowing a supplier to use previously collected monitoring data under this Subpart G if the supplier collected and analyzed the data complying with this Subpart G.

BOARD NOTE: This subsection (b) corresponds with Section 611.359(b) and derives from 40 CFR 141.89(a)(2) (2020).

- c) Reporting Lead and Copper Levels

- 1) The supplier must report all lead and copper levels greater than or equal to the lead and copper PQL ( $Pb \geq 0.005$  mg/l and  $Cu \geq 0.050$  mg/l) as measured.

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- 2) The supplier must report all lead and copper levels less than the PQL but greater than the MDL (0.005 mg/ℓ > Pb > MDL and 0.050 mg/ℓ > Cu > MDL) either as measured or as one-half the PQL in subsection (a) (i.e., 0.0025 mg/ℓ for lead or 0.025 mg/ℓ for copper).
- 3) The supplier must report all lead and copper levels below the lead and copper MDL (MDL > Pb) as zero.

BOARD NOTE: This subsection (c) corresponds with Section 611.359(c) and derives from 40 CFR 141.89(a)(3) and (a)(4) (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.1360 Reporting**

A supplier must report specific information to the Agency as this Section provides.

- a) Reporting for Tap, Lead, and Copper, and Water Quality Parameter Monitoring
  - 1) Except as subsection (a)(1)(H) provides otherwise, a supplier must report certain information for all samples Section 611.1356 specifies and for all water quality parameter samples Section 611.1357 specifies within ten days after the end of each applicable sampling period Sections 611.1356 and 611.1357 specify (i.e., every six months, annually, triennially, or every nine years). For a monitoring period shorter than six months, the end of the monitoring period is the last date on which the supplier may collect samples during that period, as Sections 611.1356 and 611.1357 specify.
    - A) The results of all tap samples for lead and copper, including the location of each site and the criteria under Section 611.1356(a)(3) through (a)(7) under which the supplier selected the site for the supplier's sampling pool;
    - B) Supporting documents for each tap water lead or copper sample the supplier requests the Agency invalidate under Section 611.1356(f)(2);

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- C) This subsection (a)(1)(C) corresponds with 40 CFR 141.90(a)(1)(iii) (2020), a provision that USEPA removed and marked “reserved”. This statement preserves structural parity with the federal rules;
- D) The 90th percentile lead and copper concentrations the supplier measures from among all lead and copper tap samples the supplier collects during each sampling period (calculated under Section 611.1350(c)(3)), unless the Agency calculates the system’s 90th percentile lead and copper levels under subsection (h);
- E) With the exception of initial tap sampling under Section 611.1356(d)(1), the supplier must designate any site it did not sample during previous sampling periods and explain why sampling sites have changed;
- F) The results of all tap samples for pH and the applicable of alkalinity, calcium, conductivity, temperature, and orthophosphate, and silica the supplier collects under Section 611.1357(b) through (e);
- G) The results of all samples the supplier collects at entry points for applicable water quality parameters under Section 611.1357(b) through (e); and
- H) A supplier must report the results of all water quality parameter samples the supplier collects under Section 611.1357(c) through (f) during each six-month monitoring period Section 611.1357(d) specifies within the first ten days following the end of the monitoring period, unless the Agency specifies a more frequent reporting requirement in a SEP.
- 2) For an NTNCWS supplier, or a CWS supplier in Section 611.1355(b)(7)(A) and (b)(7)(B) that does not have enough taps for first-draw tap samples, the supplier must do one of two things:
- A) The supplier must identify to the Agency in writing standing times and locations for enough non-first-draw tap samples to make up its sampling pool under Section 611.1356(b)(5), unless the Agency

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waives prior Agency approval of non-first-draw sampling sites the supplier selects under Section 611.1356(b)(5); or

B) If the Agency waives prior approval of non-first-draw sampling sites the supplier selects, the supplier must identify each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected under Section 611.1356(b)(5) in writing and include this information with the lead and copper tap sample results the supplier must submit under subsection (a)(1)(A).

3) At a time the Agency specifies in a SEP, a supplier deemed by rule to have optimized corrosion control under Section 611.1351(b)(3), a water supplier subject to reduced monitoring under Section 611.1356(d)(4), or a water supplier the Agency grants a monitoring waiver under Section 611.1356(g), must document adding a new source or any change in water treatment to the Agency describing the change or addition. If the Agency does not specify a time in a SEP, the supplier must document the changes to the Agency as early as possible prior to adding a new source or any change in water treatment.

4) A small system supplier applying for a monitoring waiver under Section 611.1356(g) or subject to a waiver granted under Section 611.1356(g)(3) must provide certain information to the Agency in writing before the applicable deadline:

A) Before the start of the first applicable monitoring period in Section 611.1356(d), any small water system supplier applying for a monitoring waiver must provide the documents demonstrating that the supplier qualifies for a waiver under Section 611.1356(g)(1) and (g)(2).

B) No later than nine years after the monitoring the supplier previously conducted under Section 611.1356(g)(2) or Section 611.1356(g)(4)(A), a small system supplier wanting to maintain its monitoring waiver must provide the information Section 611.1356(g)(4)(A) and (g)(4)(B) requires.

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- C) No later than 60 days after the small-sized system water supplier becomes aware that it is no longer free of lead-containing or copper-containing material, a small system supplier having a monitoring waiver must notify the Agency in writing, stating the circumstances introducing lead- or copper-containing materials into the system and describing any corrective action the supplier plans to remove these materials.
- 5) A GWS supplier limiting its water quality parameter monitoring to a subset of entry points under Section 611.1357(c)(3) must identify its selected entry points to the Agency in writing, including information sufficiently demonstrating that the sites represent water quality and treatment conditions throughout the supplier's system.
- b) Reporting for Source Water Monitoring
- 1) A supplier must report its sampling results for all source water samples it collects under Section 611.1358 within ten days after the end of each source water sampling period (i.e., annually, per compliance period (triennially), per compliance cycle (every nine years)) Section 611.1358 specifies.
- 2) With the exception of the first round of source water sampling a supplier conducts under Section 611.1358(b), a supplier must specify any site it did not sample during previous sampling periods, explaining why the supplier changed the sampling point.
- c) Reporting for Corrosion Control Treatment. Before the applicable dates under Section 611.1351, a supplier must report certain information:
- 1) A supplier demonstrating that it already optimized corrosion control must provide the information Section 611.1352(b)(2) or (b)(3) requires.
- 2) A supplier that must optimize corrosion control must provide its recommendation regarding optimal corrosion control treatment under Section 611.1352(a).

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- 3) A supplier that must evaluate the effectiveness of corrosion control treatments under Section 611.1352(c) must provide the information Section 611.1352(c) requires.
- 4) A supplier that must install optimal corrosion control the Agency approves under Section 611.1352(d) must provide a copy of the Agency permit letter, which acts as certification that the supplier completed installing the permitted treatment.
- d) Reporting for Source Water Treatment. Before the applicable dates in Section 611.1353, a supplier must provide certain information to the Agency:
  - 1) If Section 611.1353(b)(1) requires, the supplier must provide its recommendation on source water treatment; or
  - 2) A supplier that must install source water treatment under Section 611.1353(b)(2) must provide a copy of the Agency permit letter, which acts as certification that the supplier completed installing the Agency-approved treatment within 24 months after Agency approval.
- e) Reporting for Lead Service Line Replacement. A supplier must report certain information to the Agency demonstrating it complies with Section 611.1354:
  - 1) No later than 12 months after the end of a monitoring period during which a supplier exceeds the lead action level in sampling under Section 611.1354(a), the supplier must submit documents to the Agency:
    - A) The material evaluation the supplier conducted as Section 611.1356(a) requires;
    - B) Identify the initial number of lead service lines in its distribution system at the time the supplier exceeds the lead action level; and
    - C) The supplier's schedule for annually replacing at least seven percent of the initial number of lead service lines in its distribution system.
  - 2) No later than 12 months after the end of a monitoring period during which a supplier exceeds the lead action level in monitoring under Section

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611.1354(a) and every 12 months after that, the supplier must demonstrate either of two things to the Agency in writing:

- A) That the supplier replaced at least seven percent of the initial number of lead service lines in its distribution system during the previous 12 months (or any greater number of lines the Agency specifies under Section 611.1354(e)); or
- B) That the supplier conducted sampling demonstrating that the lead concentration in all service line samples from individual lines under Section 611.1356(b)(3) is less than or equal to 0.015 mg/l. This requires that the total number of lines that the supplier replaced, combined with the total number meeting the criteria of Section 611.1354(c), must equal at least seven percent of the initial number of lead lines the supplier identified under subsection (e)(1) (or the percentage the Agency specifies under Section 611.1354(e)).

3) The annual letter the supplier submits to the Agency under subsection (e)(2) must contain certain information:

- A) The number of lead service lines the supplier originally scheduled to replace be replaced during the previous year of its replacement schedule;
- B) The number and location of each lead service line the supplier actually replaced during the previous year of its replacement schedule; and
- C) If measured, the tap water lead concentration from each lead service line the supplier sampled under Section 611.1356(b)(3), the location of each lead service line sampled, the sampling method used, and the sampling date.

4) Any supplier collecting lead service line samples following partial lead service line replacement Section 611.1354 requires must report the results to the Agency before the tenth day of the next month after the supplier receives the laboratory results or as the Agency specifies in a SEP. The Agency may issue a SEP waiving the supplier reporting these monitoring

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results. A supplier must also report any additional information the Agency specifies in a time and manner the Agency prescribes to verify that the supplier completed all partial lead service line replacement activities.

- f) Reporting for Public Education Program
- 1) A supplier subject to Section 611.1355 must send documents to the Agency containing certain items within ten days after the end of each period in which the supplier must perform public education under Section 611.1355(b):
    - A) Documents showing that the supplier delivered the public education materials complying with the content requirements in Sections 611.1355(a) and the delivery requirements in Section 611.1355(b); and
    - B) A list of all newspapers, radio stations, television stations, and facilities and organizations to which the supplier delivered public education materials when this Subpart G required the supplier to perform public education tasks.
  - 2) Unless the Agency issues a SEP requiring a supplier to do so, a supplier that previously submitted the information subsection (f)(1)(B) requires need not resubmit the information subsection (f)(1)(B) requires, as long as no changes in the distribution list occurred, and the supplier certifies that it distributed the public education materials to the same list the supplier previously submitted.
  - 3) No later than three months after the end of the monitoring period, each supplier must mail a sample copy of the consumer notification of tap water monitoring results to the Agency, certifying that the supplier distributed the notification in a manner complying with Section 611.1355(d).
- g) Reporting Additional Monitoring Data. Any supplier collecting sampling data in addition to what this Subpart G requires must report those sampling data to the Agency within the first ten days following the end of the applicable sampling periods Sections 611.1356 through 611.1358 specify during which the supplier collected the samples.



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- h) Reporting 90th Percentile Lead and Copper Concentrations If the Agency Calculates a System's 90th Percentile Concentrations. A water supplier needs not report its 90th percentile lead and copper concentrations during each monitoring period, as subsection (a)(1)(D) requires, under certain circumstances:
- 1) The Agency previously notified the supplier that the Agency will calculate the water system's 90th percentile lead and copper concentrations based on the lead and copper tap results the supplier submitted under subsection (h)(2)(A), and the Agency specifies a date before the end of the applicable monitoring period when the supplier must provide the results from lead and copper tap water samples;
  - 2) The supplier provides the specific information to the Agency before the date subsection (h)(1) specifies:
    - A) The results from of all tap water samples for lead and copper, including the location of each site and the Section 611.1356(a)(3), (a)(4), (a)(5), (a)(6), or (a)(7) criteria under which the supplier selected the site for its sampling pool under subsection (a)(1)(A); and
    - B) The supplier must identify sampling sites it used during the current monitoring period that it did not sample during previous monitoring periods, explaining why the supplier changed sampling sites; and
  - 3) The Agency provides the written results of the 90th percentile lead and copper calculations to the supplier before the end of the monitoring period.

BOARD NOTE: This Section corresponds with Section 611.360 and derives from 40 CFR 141.90 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### Section 611.1361 Recordkeeping

Any supplier subject to this Subpart G must retain original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, Agency determinations, and any other

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information Sections 611.1351 through Section 611.1360 require. Each supplier must retain the records this Section requires on its premises for at least 12 years.

BOARD NOTE: This Section corresponds with Section 611.361 and derives from 40 CFR 141.91 (2020).

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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**Section 611.APPENDIX G NPDWR Violations and Situations Requiring Public Notice**

See note 1 at the end of this Appendix G for an explanation of the Agency's authority to alter the magnitude of a violation from that set forth in the following table.

Contaminant	MCL/MRDL/TT violations <sup>2</sup>		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation

I. Violations of National Primary Drinking Water Regulations (NPDWR):<sup>3</sup>

## A. Microbiological Contaminants

1a. Corresponding row 1a in appendix A to subpart Q to 40 CFR 141 no longer applies by its own terms. This statement maintains structural consistency with the federal regulations.				
1b. Total coliform (TT violations resulting from failure to perform assessments or corrective actions, monitoring violations, and reporting violations)	2	611.1060(b)(1)	3	611.1060(c)(1) 611.1060(d)(1)
1c. Seasonal system failure to follow State-approved start-up plan prior to serving water to the public or failure to provide certification to the Agency	2	611.1060(b)(2)	3	611.1060(d)(3)

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2a. Corresponding row 2a in appendix A to subpart Q to 40 CFR 141 no longer applies by its own terms. This statement maintains structural consistency with the federal regulations.				
2b. E. coli (MCL, monitoring, and reporting violations)	1	611.1060(a)	3	611.1060(c), 611.1060(d)(2)
2c. E. coli (TT violations resulting from failure to perform Level 2 assessments or corrective action)	2	611.1060(b)(1)		
<u>3. This entry relates to the obsolete MCL for turbidity in 40 CFR 141.13 that does not apply to any supplier in Illinois. This statement maintains structural consistency with the corresponding USEPA rule.</u>				
<del>3. Turbidity MCL</del>	<del>2</del>	<del>611.320(a)</del>	<del>3</del>	<del>611.560</del>
<u>4. This entry relates to the obsolete MCL for turbidity in 40 CFR 141.13 that does not apply to any supplier in Illinois. This statement maintains structural consistency with the corresponding USEPA rule.</u>				
<del>4. Turbidity MCL (average of two days' samples greater than 5 NTU)</del>	<del><sup>5</sup>2, 1</del>	<del>611.320(b)</del>	<del>3</del>	<del>611.560</del>
5. Turbidity (for TT violations resulting from a single exceedance of maximum allowable turbidity level)	<sup>6</sup> 2, 1	611.231(b), 611.233(b)(1), 611.250(a)(2), 611.250(b)(2), 611.250(c)(2), 611.250(d), 611.743(a)(2), 611.743(b), 611.955(b)(2)	3	611.531(a), 611.532(b), 611.533(a), 611.744, 611.956(a)(1)- (a)(3), 611.956(b)

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6. Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. allowable turbidity level (TT)	2	611.211, 611.213, 611.220, 611.230- 611.233, 611.240- 611.242, 611.250	3	611.531- 611.533
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. turbidity level (TT)	2	<sup>7</sup> 611.740- 611.743, 611.950- 611.955	3	611.742, 611.744, 611.953, 611.954, 611.956
8. Filter Backwash Recycling Rule violations	2	611.276(c)	3	611.276(b), (d)
9. Long Term 1 Enhanced Surface Water Treatment Rule violations	2	611.950- 611.955	3	611.953, 611.954, 611.956
10. LT2ESWTR violations	2	611.1010- 611.1020	<sup>19</sup> 2, 3	611.1001- 611.1005 and 611.1008- 611.1009
11. Groundwater Rule violations	2	611.804	3	611.802(h)

## B. Inorganic Chemicals (IOCs)

1. Antimony	2	611.301(b)	3	611.600, 611.601, 611.603
2. Arsenic	2	611.301(b)	3	611.601, 611.603
3. Asbestos (fibers greater than 10 µm)	2	611.301(b)	3	611.600, 611.601, 611.602
4. Barium	2	611.301(b)	3	611.600, 611.601, 611.603

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5. Beryllium	2	611.301(b)	3	611.600, 611.601, 611.603
6. Cadmium	2	611.301(b)	3	611.600, 611.601, 611.603
7. Chromium (total)	2	611.301(b)	3	611.600, 611.601, 611.603
8. Cyanide	2	611.301(b)	3	611.600, 611.601, 611.603
9. Fluoride	2	611.301(b)	3	611.600, 611.601, 611.603
10. Mercury (inorganic)	2	611.301(b)	3	611.600, 611.601, 611.603
11. Nitrate	1	611.301(b)	<sup>8</sup> 1, 3	611.600, 611.601, 611.604, 611.606
12. Nitrite	1	611.301(b)	<sup>8</sup> 1, 3	611.600, 611.601, 611.605, 611.606
13. Total Nitrate and Nitrite	1	611.301(b)	3	611.600, 611.601
14. Selenium	2	611.301(b)	3	611.600, 611.601, 611.603
15. Thallium	2	611.301(b)	3	611.600, 611.601, 611.603

C. Lead and Copper Rule (Action Level for lead is 0.015 mg/ℓ, for copper is 1.3 mg/ℓ)

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1. Lead and Copper Rule (TT)	2	611.350 <u>(except 611.350(c))-611.354, 611.355(a)-(c) and (h), and 611.363-611.355</u>	3	611.356- <del>611.360</del> <del>611.359</del>
2. <u>Exceeding the lead action level</u>	<u>1</u>	<u>611.350(c)</u>		

## D. Synthetic Organic Chemicals (SOCs)

1. 2,4-D	2	611.311(c)	3	611.648
2. 2,4,5-TP (silvex)	2	611.311(c)	3	611.648
3. Alachlor	2	611.311(c)	3	611.648
4. Atrazine	2	611.311(c)	3	611.648
5. Benzo(a)pyrene (PAHs)	2	611.311(c)	3	611.648
6. Carbofuran	2	611.311(c)	3	611.648
7. Chlordane	2	611.311(c)	3	611.648
8. Dalapon	2	611.311(c)	3	611.648
9. Di(2-ethylhexyl)adipate	2	611.311(c)	3	611.648
10. Di(2-ethylhexyl)phthalate	2	611.311(c)	3	611.648
11. Dibromochloropropane (DBCP)	2	611.311(c)	3	611.648
12. Dinoseb	2	611.311(c)	3	611.648
13. Dioxin (2,3,7,8-TCDD)	2	611.311(c)	3	611.648
14. Diquat	2	611.311(c)	3	611.648
15. Endothall	2	611.311(c)	3	611.648
16. Endrin	2	611.311(c)	3	611.648
17. Ethylene dibromide	2	611.311(c)	3	611.648
18. Glyphosate	2	611.311(c)	3	611.648
19. Heptachlor	2	611.311(c)	3	611.648
20. Heptachlor epoxide	2	611.311(c)	3	611.648
21. Hexachlorobenzene	2	611.311(c)	3	611.648
22. Hexachlorocyclopentadiene	2	611.311(c)	3	611.648
23. Lindane	2	611.311(c)	3	611.648
24. Methoxychlor	2	611.311(c)	3	611.648
25. Oxamyl (Vydate)	2	611.311(c)	3	611.648
26. Pentachlorophenol	2	611.311(c)	3	611.648

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27. Picloram	2	611.311(c)	3	611.648
28. Polychlorinated biphenyls (PCBs)	2	611.311(c)	3	611.648
29. Simazine	2	611.311(c)	3	611.648
30. Toxaphene	2	611.311(c)	3	611.648

## E. Volatile Organic Chemicals (VOCs)

1. Benzene	2	611.311(a)	3	611.646
2. Carbon tetrachloride	2	611.311(a)	3	611.646
3. Chlorobenzene (monochlorobenzene)	2	611.311(a)	3	611.646
4. o-Dichlorobenzene	2	611.311(a)	3	611.646
5. p-Dichlorobenzene	2	611.311(a)	3	611.646
6. 1,2-Dichloroethane	2	611.311(a)	3	611.646
7. 1,1-Dichloroethylene	2	611.311(a)	3	611.646
8. cis-1,2-Dichloroethylene	2	611.311(a)	3	611.646
9. trans-1,2-Dichloroethylene	2	611.311(a)	3	611.646
10. Dichloromethane	2	611.311(a)	3	611.646
11. 1,2-Dichloropropane	2	611.311(a)	3	611.646
12. Ethylbenzene	2	611.311(a)	3	611.646
13. Styrene	2	611.311(a)	3	611.646
14. Tetrachloroethylene	2	611.311(a)	3	611.646
15. Toluene	2	611.311(a)	3	611.646
16. 1,2,4-Trichlorobenzene	2	611.311(a)	3	611.646
17. 1,1,1-Trichloroethane	2	611.311(a)	3	611.646
18. 1,1,2-Trichloroethane	2	611.311(a)	3	611.646
19. Trichloroethylene	2	611.311(a)	3	611.646
20. Vinyl chloride	2	611.311(a)	3	611.646
21. Xylenes (total)	2	611.311(a)	3	611.646

## F. Radioactive Contaminants

1. Beta/photon emitters	2	611.330(d)	3	611.720(a), 611.732
2. Alpha emitters	2	611.330(c)	3	611.720(a), 611.731
3. Combined radium (226 and 228)	2	611.330(b)	3	611.720(a), 611.731



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4. Uranium	2	611.330(e)	3	611.720(a), 611.731
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- G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. If ~~Where~~ disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).<sup>13</sup>

1. Total trihalomethanes (TTHMs)	2	<sup>11</sup> 611.312(b)	3	Subparts W and Y
2. Haloacetic Acids (HAA5)	2	611.312(b)	3	Subpart Y
3. Bromate	2	611.312(a)	3	611.382(a)-(b)
4. Chlorite	2	611.312(a)	3	611.382(a)-(b)
5. Chlorine (MRDL)	2	611.313(a)	3	611.382(a), (c)
6. Chloramine (MRDL)	2	611.313(a)	3	611.382(a), (c)
7. Chlorine dioxide (MRDL), <u>if where</u> any two consecutive daily samples at entrance to distribution system only are above MRDL	2	611.313(a), 611.383(c)(3)	2 <sup>12</sup> , 3	611.382(a), (c), 611.383(c)(2)
8. Chlorine dioxide (MRDL), <u>if where</u> samples in distribution system the next day are also above MRDL	<sup>13</sup> 1	611.313(a), 611.383(c)(3)	1	611.382(a), (c), 611.383(c)(2)
9. Control of DBP precursors – TOC (TT)	2	611.385(a)-(b)	3	611.382(a), (d)
10. Benchmarking and disinfection profiling	N/A	N/A	3	611.742, 611.953, 611.954
11. Development of monitoring plan	N/A	N/A	3	611.382(f)

## H. Other Treatment Techniques

1. Acrylamide (TT)	2	611.296	N/A	N/A
2. Epichlorohydrin (TT)	2	611.296	N/A	N/A

II. Unregulated Contaminant Monitoring:<sup>14</sup>

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A. Unregulated contaminants	N/A	N/A	3	as required by USEPA under 40 CFR 141.40
B. Nickel	N/A	N/A	3	611.603, 611.611

III. Public Notification for Relief Equivalent to a SDWA section 1415 Variance or a section 1416 Exemption.

A. Operation under relief equivalent to a SDWA section 1415 variance or a section 1416 exemption	3	<sup>15</sup> 1415, 1416	N/A	N/A
B. Violation of conditions of relief equivalent to a SDWA section 1415 variance or a section 1416 exemption	2	1415, 1416, <sup>16</sup> 611.111, 611.112	N/A	N/A

IV. Other Situations Requiring Public Notification.

A. Fluoride secondary maximum contaminant level (SMCL) exceedance	3	611.858	N/A	N/A
B. Exceedance of nitrate MCL for a non-CWS supplier, as allowed by the Agency	1	611.300(d)	N/A	N/A
C. Availability of unregulated contaminant monitoring data	3	as required by USEPA under 40 CFR 141.40	N/A	N/A
D. Waterborne disease outbreak	1	611.101, 611.233(b)(2)	N/A	N/A
E. Other waterborne emergency <sup>17</sup>	1	N/A	N/A	N/A
F. Source water sample positive for Groundwater Rule fecal indicators: E. coli, enterococci, or coliphage	1	611.802(g)	N/A	N/A

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G. Other situations as determined by the Agency <del>in by a SEP issued</del> under Section 611.110	<sup>18</sup> 1, 2, 3	N/A	N/A	N/A
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## Appendix G – Endnotes

1. Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports) do not require notice, unless ~~otherwise determined by the Agency issues by a SEP requiring otherwise~~. The Agency may ~~issue, by a SEP, further requiring require~~ a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under Sections 611.902(a) and 611.903(a).
2. Definition of the abbreviations used: "MCL" means maximum contaminant level, "MRDL" means maximum residual disinfectant level, and "TT" means treatment technique.
3. The term "violations of National Primary Drinking Water Regulations (NPDWR)" is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.
4. Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3 violations.
5. ~~In the corresponding USEPA rule, this note relates to an entry for the obsolete MCL for turbidity that does not apply to any supplier in Illinois. This statement maintains structural consistency with the corresponding USEPA rule. A supplier that violates the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue a SEP that elevates the violation to a Tier 1 violation. If a supplier is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.~~
6. A supplier with a treatment technique violation involving a single exceedance of a maximum turbidity limit under the Surface Water Treatment Rule (SWTR), the Interim Enhanced Surface Water Treatment Rule (IESWTR), or the Long Term 1 Enhanced Surface Water Treatment Rule are required to consult with the Agency within 24 hours

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after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue a SEP ~~elevating that elevates~~ the violation to a Tier 1 violation. If a supplier is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.

7. The Surface Water Treatment Rule (SWTR) remains in effect for a supplier ~~servicing that serves~~ at least 10,000 persons; the Interim Enhanced Surface Water Treatment Rule adds additional requirements and does not in many cases supersede the SWTR.
8. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.
9. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.
10. A Subpart B community or non-transient non-community system supplier must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements. A Subpart B transient non-community system supplier ~~servicing that serves~~ 10,000 or more persons ~~using that uses~~ chlorine dioxide as a disinfectant or oxidant or a Subpart B transient non-community system supplier ~~servicing that serves~~ fewer than 10,000 persons, ~~that which~~ uses only groundwater not under the direct influence of surface water, and ~~that which~~ uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL.
11. Sections 611.312(b)(1) and 611.382(a) and (b) apply until Subpart Y takes effect under the schedule set forth in Section 611.970(c).
12. Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system is a Tier 2 violation.
13. If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. A failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers Tier 1 notification.
14. Some water suppliers must monitor for certain unregulated contaminants as required by

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USEPA under 40 CFR 141.40.

15. This citation refers to sections 1415 and 1416 of the federal Safe Drinking Water Act. sections 1415 and 1416 require that "a schedule prescribed...for a public water system granted relief equivalent to a SDWA section 1415 variance or a section 1416 exemption must require compliance by the system...."
16. In addition to sections 1415 and 1416 of the federal Safe Drinking Water Act, 40 CFR 142.307 specifies the items and schedule milestones that must be included in relief equivalent to a SDWA section 1415 small system variance. In granting any form of relief from an NPDWR, the Board will consider all applicable federal requirements for and limitations on the State's ability to grant relief consistent with federal law.
17. Other waterborne emergencies require a Tier 1 public notice under Section 611.902(a) for situations that do not meet the definition of a waterborne disease outbreak given in Section 611.101, but ~~that which~~ still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.
18. The Agency may place any other situation in any tier it deems appropriate in writing, based on the prospective threat which it determines that the situation poses to public health, and subject to Board review under Section 40 of the Act.
19. A failure to collect three or more samples for Cryptosporidium analysis is a Tier 2 violation requiring special notice, as specified in Section 611.911. All other monitoring and testing procedure violations are Tier 3.

BOARD NOTE: [This Appendix G derives](#) ~~Derived~~ from appendix A to subpart Q of 40 CFR 141.

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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**Section 611.APPENDIX H Standard Health Effects Language for Public Notification**

Contaminant	MCLG <sup>1</sup> mg/ℓ	MCL <sup>2</sup> mg/ℓ	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR):			
A. Microbiological Contaminants			
1a. Corresponding row 1a in appendix B to subpart Q to 40 CFR 141 no longer applies by its own terms. This statement maintains structural consistency with the federal regulations.			
1b. Corresponding row 1b in appendix B to subpart Q to 40 CFR 141 no longer applies by its own terms. This statement maintains structural consistency with the federal regulations.			
1c. Fecal indicators (GWR): i. E. coli ii. enterococci iii. coliphage	Zero None None	TT TT TT	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1d. Groundwater Rule TT Violations	None	TT	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

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1e. Subpart Y Coliform Assessment and/or Corrective Action Violations	N/A	TT	<p>Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found. (The system must use the following applicable sentences:)</p> <p>We failed to conduct the required assessment.</p> <p>We failed to correct all identified sanitary defects that were found during the assessment(s).</p>
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1f. Subpart Y E. coli Assessment and/or Corrective Action Violations	N/A	TT	<p>E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for E. coli, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found. (The system must use the following applicable sentences:)</p> <p>We failed to conduct the required assessment.</p> <p>We failed to correct all identified sanitary defects that were found during the assessment that we conducted.</p>
1g. E. coli	Zero	See footnote 22	<p>E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.</p>



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1h. Subpart Y Seasonal System TT Violations	N/A	TT	When this violation includes the failure to monitor for total coliforms or E. coli prior to serving water to the public, the mandatory language found at Section 611.905(d)(2) must be used. When this violation includes failure to complete other actions, the appropriate elements found in Section 611.905(a) to describe the violation must be used.
<u>2a. This entry relates to the obsolete MCL for turbidity in 40 CFR 141.13 that does not apply to any supplier in Illinois. This statement maintains structural consistency with the corresponding USEPA rule.</u>			
2a. Turbidity (MCL) <sup>4</sup>	None	1 NTU <sup>5/5</sup> NTU	<del>Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.</del>
2b. Turbidity (SWTR TT)	None	TT <sup>7</sup>	Turbidity has no health effects. However, <sup>6</sup> turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

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2c. Turbidity (IESWTR TT and LT1ESWTR TT)	None	TT	Turbidity has no health effects. However, <sup>8</sup> turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
B. Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), and Filter Backwash Recycling Rule (FBRR) violations:			
3. Giardia lamblia (SWTR/IESWTR/LT1ESWTR)	Zero	TT <sup>10</sup>	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
4. Viruses (SWTR/IESWTR/LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
5. Heterotrophic plate count (HPC) bacteria <sup>9</sup> (SWTR/IESWTR/LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
6. Legionella (SWTR/IESWTR/LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

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7. Cryptosporidium (IESWTR/FBRR/LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
C. Inorganic Chemicals (IOCs)			
8. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
9. Arsenic	0	0.010	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
10. Asbestos (10 µm)	7 MFL <sup>11</sup>	7 MFL	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
11. Barium	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
12. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
13. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

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14. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
15. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
16. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
17. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
18. Nitrate	10	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

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19. Nitrite	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
20. Total Nitrate and Nitrite	10	10	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
21. Selenium	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
22. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
D. Lead and Copper Rule			

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23. Lead	Zero	TT <sup>12</sup>	<p><u>Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Children could show slight deficits in attention span and learning abilities. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems who drink this water over many years could develop kidney problems or high blood pressure.</u></p>
24. Copper	1.3	TT <sup>13</sup>	<p>Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.</p>
E. Synthetic Organic Chemicals (SOCs)			

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25. 2,4-D	0.07	0.07	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
26. 2,4,5-TP (silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
27. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
28. Atrazine	0.003	0.003	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
29. Benzo(a)pyrene (PAHs).	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
30. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.

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31. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
32. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
33. Di(2-ethylhexyl)adipate	0.4	0.4	Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience toxic effects, such as weight loss, liver enlargement, or possible reproductive difficulties.
34. Di(2-ethylhexyl)-phthalate	Zero	0.006	Some people who drink water containing di(2-ethylhexyl)-phthalate well in excess of the MCL over many years may have problems with their liver or experience reproductive difficulties, and they may have an increased risk of getting cancer.
35. Dibromochloropropane (DBCP)	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
36. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.



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37. Dioxin (2,3,7,8-TCDD)	Zero	$3 \times 10^{-8}$	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
38. Diquat	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
39. Endothall	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
40. Endrin	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
41. Ethylene dibromide	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
42. Glyphosate	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
43. Heptachlor	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

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44. Heptachlor epoxide	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
45. Hexachlorobenzene	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
46. Hexachlorocyclopentadiene	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
47. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
48. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
49. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

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50. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
51. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
52. Polychlorinated biphenyls (PCBs)	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
53. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
54. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
F. Volatile Organic Chemicals (VOCs)			
55. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

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56. Carbon tetrachloride	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
57. Chlorobenzene (monochlorobenzene)	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
58. o-Dichlorobenzene	0.6	0.6	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
59. p-Dichlorobenzene	0.075	0.075	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
60. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
61. 1,1-Dichloroethylene	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
62. cis-1,2-Dichloroethylene	0.07	0.07	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

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63. trans-1,2-Dichloroethylene	0.1	0.1	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
64. Dichloromethane	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
65. 1,2-Dichloropropane	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
66. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
67. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
68. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
69. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

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70. 1,2,4-Trichlorobenzene	0.07	0.07	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
71. 1,1,1-Trichloroethane	0.2	0.2	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
72. 1,1,2-Trichloroethane	0.003	0.005	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
73. Trichloroethylene	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
74. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
75. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
G. Radioactive Contaminants			

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76. Beta/photon emitters	Zero	4 mrem/yr <sup>14</sup>	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
77. Alpha emitters	Zero	15 pCi/ℓ <sup>15</sup>	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
78. Combined radium (226 and 228)	Zero	5 pCi/ℓ	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
79. Uranium	Zero	30 µg/ℓ	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals: <u>If</u> <del>Where</del> disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAA5) <sup>16</sup>			
80. Total trihalomethanes (TTHMs)	N/A	0.080 <sup>17,18</sup>	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

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81. Haloacetic Acids (HAA5)	N/A	0.060 <sup>19</sup>	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
82. Bromate	Zero	0.010	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
83. Chlorite	0.08	1.0	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
84. Chlorine	4 (MRDLG) <sup>20</sup>	4.0 (MRDL) <sup>21</sup>	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
85. Chloramines	4 (MRDLG)	4.0 (MRDL)	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.



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<p>85a. Chlorine dioxide, <u>if</u> <del>where</del> any two consecutive daily samples taken at the entrance to the distribution system are above the MRDL</p>	<p>0.8 (MRDLG)</p>	<p>0.8 (MRDL)</p>	<p>Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.</p> <p>Add for public notification only: The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system that delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.</p>
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<p>86a. Chlorine dioxide, <u>if</u> <del>where</del> one or more distribution system samples are above the MRDL</p>	<p>0.8 (MRDLG)</p>	<p>0.8 (MRDL)</p>	<p>Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.</p> <p>Add for public notification only: The chlorine dioxide violations reported today include exceedances of the USEPA standard within the distribution system that delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.</p>
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87. Control of DBP precursors (TOC)	None	TT	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
I. Other Treatment Techniques:			
88. Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
89. Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

## Appendix H – Endnotes

1. "MCLG" means maximum contaminant level goal.
2. "MCL" means maximum contaminant level.
3. This endnote corresponds with endnote 3 to appendix B to subpart Q to 40 CFR 14, which applied only to paragraph 1a in the table, which no longer has operative effect. This statement maintains structural consistency with the corresponding federal rules.

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4. In the corresponding USEPA rule, this note relates to an entry for the obsolete MCL for turbidity that does not apply to any supplier in Illinois. This statement maintains structural consistency with the corresponding USEPA rule.~~There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 Surface Water Treatment Rule (SWTR), the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR), and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR). The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for a supplier that is required to filter but has not yet installed filtration (Section 611.320).~~
5. In the corresponding USEPA rule, this note relates to an entry for the obsolete MCL for turbidity that does not apply to any supplier in Illinois. This statement maintains structural consistency with the corresponding USEPA rule.~~"NTU" means nephelometric turbidity unit.~~
6. There are various regulations that set turbidity standards for different types of systems, including ~~Section 611.320~~, the 1989 SWTR, the 1998 IESWTR, and the 2002 LT1ESWTR. A supplier subject to the SWTR (both filtered and unfiltered) may not exceed 5 NTU. In addition, in filtered systems, 95 percent of samples each month must not exceed 0.5 NTU in systems using conventional or direct filtration and must not exceed 1 NTU in systems using slow sand or diatomaceous earth filtration or other filtration technologies approved by the Agency.
7. "TT" means treatment technique.
8. There are various regulations that set turbidity standards for different types of systems, including ~~Section 611.320~~, the 1989 SWTR, the 1998 IESWTR, and the 2002 LT1ESWTR. For a supplier subject to the IESWTR (a supplier ~~servicing that serves~~ at least 10,000 people, using surface water or groundwater under the direct influence of surface water), that use conventional filtration or direct filtration, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. A supplier subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the Agency. For a supplier subject to the LT1ESWTR (a supplier ~~servicing that serves~~ fewer than 10,000 people, using surface water or groundwater under the direct influence of surface water) ~~using that uses~~ conventional filtration or direct filtration, the turbidity level of the supplier's combined filter effluent may not exceed 0.3

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NTU in at least 95 percent of monthly measurements, and the turbidity level of the supplier's combined filter effluent must not exceed 1 NTU at any time. A supplier subject to the LT1ESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the Agency.

9. The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.
10. SWTR, IESWTR, and LT1ESWTR treatment technique violations that involve turbidity exceedances may use the health effects language for turbidity instead.
11. Millions of fibers per liter.
12. Action Level = 0.015 mg/ℓ.
13. Action Level = 1.3 mg/ℓ.
14. Millirems per year.
15. Picocuries per liter.
16. A surface water system supplier or a groundwater system supplier under the direct influence of surface water is regulated under Subpart B. A Subpart B community water system supplier or a non-transient non-community system supplier must comply with Subpart I DBP MCLs and disinfectant maximum residual disinfectant levels (MRDLs). A Subpart B transient non-community system supplier using that uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL.
17. Community and non-transient non-community systems must comply with Subpart Y TTHM and HAA5 MCLs of 0.080 mg/ℓ and 0.060 mg/ℓ, respectively (with compliance calculated as a locational running annual average) on the schedule in Section 611.970.
18. The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.
19. The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic acids.

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20. "MRDLG" means maximum residual disinfectant level goal.
21. "MRDL" means maximum residual disinfectant level.
22. The supplier is in compliance unless one of the following conditions occurs: (1) the supplier's system has an E. coli-positive repeat sample following a total coliform-positive routine sample; (2) the supplier's system 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; or (4) the supplier fails to test for E. coli when any repeat sample tests positive for total coliform.

BOARD NOTE: [This Appendix H derives](#) ~~Derived~~ from appendix B to subpart Q to 40 CFR 141 (2016).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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**Section 611.TABLE F Number of Water Quality Parameter Sampling Sites**

System Size ( <u>Number of</u> Persons Served)	<u>Minimum</u> Number of Sites	
	(Standard Monitoring)	(Reduced Monitoring)
more than 100,000	25	10
10,001 to 100,000	10	7
3,301 to 10,000	3	3
501 to 3,300	2	2
101 to 500	1	1
100 or fewer	1	1

BOARD NOTE: This Table F derives ~~Derived~~ from 40 CFR 141.87(a)(2)(i) and (e)(1)-(2012).

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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**Section 611. TABLE G Summary of Section 611.357 Monitoring Requirements for Water Quality Parameters (Repealed)**

See end note 1 below.

Monitoring Period	Parameters <sup>2</sup>	Location	Frequency
Initial Monitoring	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium, conductivity, temperature	Taps and at entry points to the distribution system	Every six months
After installation of corrosion control	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium <sup>4</sup>	Taps	Every six months
	pH, alkalinity dosage rate and concentration (if alkalinity is adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual <sup>5</sup>	Entry points to the distribution system <sup>6</sup>	No less frequently than every two weeks
After the Agency specifies parameter values for optimal corrosion control	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium <sup>4</sup>	Taps	Every six months
	pH, alkalinity dosage rate and concentration (if alkalinity is adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual <sup>5</sup>	Entry points to the distribution system <sup>6</sup>	No less frequently than every two weeks



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<del>Reduced monitoring</del>	<del>pH, alkalinity, orthophosphate or silica<sup>3</sup>, calcium<sup>4</sup></del>	<del>Taps</del>	<del>Every six months, annually<sup>7</sup> or every three years<sup>8</sup>; reduced number of sites</del>
	<del>pH, alkalinity dosage rate and concentration (if alkalinity is adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual<sup>5</sup></del>	<del>Entry points to the distribution system<sup>6</sup></del>	<del>No less frequently than every two weeks</del>

<sup>1</sup> ~~This Table G is for illustrative purposes; consult the text of Section 611.357 for precise regulatory requirements.~~

<sup>2</sup> ~~Small and medium sized systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.~~

<sup>3</sup> ~~Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.~~

<sup>4</sup> ~~Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.~~

<sup>5</sup> ~~Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.~~

<sup>6</sup> ~~A groundwater system supplier may limit monitoring to representative locations throughout the system.~~

<sup>7</sup> ~~A water supplier may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if it has maintained the range of values for water quality parameters reflecting optimal corrosion control during three consecutive years of monitoring.~~

<sup>8</sup> ~~A water supplier may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every three years if it has maintained the range of values for water quality parameters reflecting optimal corrosion control during three consecutive years~~

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~~of annual monitoring. A water supplier may accelerate to triennial monitoring for water quality parameters at the tap if it has maintained 90<sup>th</sup> percentile lead levels less than or equal to 0.005 mg/l, 90<sup>th</sup> percentile copper levels less than or equal to 0.65 mg/l, and the range of water quality parameters designated by the Agency under Section 611.352(f) as representing optimal corrosion control during two consecutive six-month monitoring periods.~~

~~BOARD NOTE: Derived from the table to 40 CFR 141.87 (2012).~~

(Source: Repealed at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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**Section 611.TABLE R Radionuclide Conversion Factors**

Derived Concentrations (pCi•ℓ<sup>-1</sup>) of Beta and Photon Emitters in Drinking Water Yielding a Dose of 4 mrem•y<sup>-1</sup> to the Total Body or to Any Critical Organ as Defined in NBS Handbook 69

<u>Radionuclide (Isotopic Symbol)</u>	<u>Conversion Factor (pCi•ℓ<sup>-1</sup>/4 mrem•y<sup>-1</sup>)</u>
<u>Antimony-122 (<sup>122</sup><sub>51</sub>Sb)</u>	<u>90</u>
<u>Antimony-124 (<sup>124</sup><sub>51</sub>Sb)</u>	<u>60</u>
<u>Antimony-125 (<sup>125</sup><sub>51</sub>Sb)</u>	<u>300</u>
<u>Arsenic-73 (<sup>73</sup><sub>33</sub>As)</u>	<u>1,000</u>
<u>Arsenic-74 (<sup>74</sup><sub>33</sub>As)</u>	<u>100</u>
<u>Arsenic-76 (<sup>76</sup><sub>33</sub>As)</u>	<u>60</u>
<u>Arsenic-77 (<sup>77</sup><sub>33</sub>As)</u>	<u>200</u>
<u>Barium-131 (<sup>131</sup><sub>56</sub>Ba)</u>	<u>600</u>
<u>Barium-140 (<sup>140</sup><sub>56</sub>Ba)</u>	<u>90</u>
<u>Berkelium-249 (<sup>249</sup><sub>97</sub>Bk)</u>	<u>2,000</u>
<u>Beryllium-7 (<sup>7</sup><sub>4</sub>Be)</u>	<u>6,000</u>
<u>Bismuth-206 (<sup>206</sup><sub>83</sub>Bi)</u>	<u>100</u>
<u>Bismuth-207 (<sup>207</sup><sub>83</sub>Bi)</u>	<u>200</u>
<u>Bromine-82 (<sup>82</sup><sub>35</sub>Br)</u>	<u>100</u>
<u>Cadmium-109 (<sup>109</sup><sub>48</sub>Cd)</u>	<u>600</u>
<u>Cadmium-115 (<sup>115</sup><sub>48</sub>Cd)</u>	<u>90</u>
<u>Cadmium-115m (<sup>115m</sup><sub>48</sub>Cd)</u>	<u>90</u>
<u>Calcium-45 (<sup>45</sup><sub>20</sub>Ca)</u>	<u>10</u>
<u>Calcium-47 (<sup>47</sup><sub>20</sub>Ca)</u>	<u>80</u>
<u>Carbon-14 (<sup>14</sup><sub>6</sub>C) (<sup>14</sup>C)</u>	<u>2,000</u>
<u>Cerium-141 (<sup>141</sup><sub>58</sub>Ce)</u>	<u>300</u>
<u>Cerium-143 (<sup>143</sup><sub>58</sub>Ce)</u>	<u>100</u>
<u>Cerium-144 (<sup>144</sup><sub>58</sub>Ce)</u>	<u>30</u>
<u>Cesium-131 (<sup>131</sup><sub>55</sub>Cs)</u>	<u>20,000</u>
<u>Cesium-134 (<sup>134</sup><sub>55</sub>Cs)</u>	<u>80</u>
<u>Cesium-134m (<sup>134m</sup><sub>55</sub>Cs)</u>	<u>20,000</u>
<u>Cesium-135 (<sup>135</sup><sub>55</sub>Cs)</u>	<u>900</u>
<u>Cesium-136 (<sup>136</sup><sub>55</sub>Cs)</u>	<u>800</u>
<u>Cesium-137 (<sup>137</sup><sub>55</sub>Cs)</u>	<u>200</u>
<u>Chlorine-36 (<sup>36</sup><sub>17</sub>Cl)</u>	<u>700</u>

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<u>Chlorine-38</u> ( $^{38}_{17}\text{Cl}$ )	<u>1,000</u>
<u>Chromium-51</u> ( $^{51}_{24}\text{Cr}$ )	<u>6,000</u>
<u>Cobalt-57</u> ( $^{57}_{27}\text{Co}$ )	<u>1,000</u>
<u>Cobalt-58</u> ( $^{58}_{27}\text{Co}$ )	<u>300</u>
<u>Cobalt-58m</u> ( $^{58\text{m}}_{27}\text{Co}$ )	<u>9,000</u>
<u>Cobalt-60</u> ( $^{60}_{27}\text{Co}$ )	<u>100</u>
<u>Copper-64</u> ( $^{64}_{29}\text{Cu}$ )	<u>900</u>
<u>Dysprosium-165</u> ( $^{165}_{66}\text{Dy}$ )	<u>1,000</u>
<u>Dysprosium-166</u> ( $^{166}_{66}\text{Dy}$ )	<u>100</u>
<u>Erbium-169</u> ( $^{169}_{68}\text{Er}$ )	<u>300</u>
<u>Erbium-171</u> ( $^{171}_{68}\text{Er}$ )	<u>300</u>
<u>Europium-152</u> ( $^{152}_{63}\text{Eu}$ )	<u>200</u>
<u>Europium-154</u> ( $^{154}_{63}\text{Eu}$ )	<u>60</u>
<u>Europium-155</u> ( $^{155}_{63}\text{Eu}$ )	<u>600</u>
<u>Fluorine-18</u> ( $^{18}_{9}\text{F}$ )	<u>2,000</u>
<u>Gadolinium-153</u> ( $^{153}_{63}\text{Gd}$ )	<u>600</u>
<u>Gadolinium-159</u> ( $^{159}_{63}\text{Gd}$ )	<u>200</u>
<u>Gallium-72</u> ( $^{72}_{31}\text{Ga}$ )	<u>100</u>
<u>Germanium-71</u> ( $^{71}_{32}\text{Ge}$ )	<u>6,000</u>
<u>Gold-196</u> ( $^{196}_{79}\text{Au}$ ) ( $^{196}_{79}\text{Au}$ )	<u>600</u>
<u>Gold-198</u> ( $^{198}_{79}\text{Au}$ ) ( $^{198}_{79}\text{Au}$ )	<u>100</u>
<u>Gold-199</u> ( $^{199}_{79}\text{Au}$ ) ( $^{199}_{79}\text{Au}$ )	<u>600</u>
<u>Hafmium-181</u> ( $^{181}_{72}\text{Hf}$ )	<u>200</u>
<u>Holmium-166</u> ( $^{166}_{67}\text{Ho}$ )	<u>90</u>
<u>Hydrogen-3 (Tritium)</u> ( $^3_1\text{H}$ )	<u>20,000</u>
<u>Indium-113m</u> ( $^{113\text{m}}_{49}\text{In}$ )	<u>3,000</u>
<u>Indium-114m</u> ( $^{114\text{m}}_{49}\text{In}$ )	<u>60</u>
<u>Indium-115</u> ( $^{115}_{49}\text{In}$ )	<u>300</u>
<u>Indium-115 m</u> ( $^{115\text{m}}_{49}\text{In}$ )	<u>1,000</u>
<u>Iodine-126</u> ( $^{126}_{53}\text{I}$ )	<u>3</u>
<u>Iodine-129</u> ( $^{129}_{53}\text{I}$ )	<u>1</u>
<u>Iodine-131</u> ( $^{131}_{53}\text{I}$ )	<u>3</u>
<u>Iodine-132</u> ( $^{132}_{53}\text{I}$ )	<u>90</u>
<u>Iodine-133</u> ( $^{133}_{53}\text{I}$ )	<u>10</u>
<u>Iodine-134</u> ( $^{134}_{53}\text{I}$ )	<u>100</u>
<u>Iodine-135</u> ( $^{135}_{53}\text{I}$ )	<u>30</u>
<u>Iridium-190</u> ( $^{190}_{77}\text{Ir}$ )	<u>600</u>

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<u>Iridium-192</u> ( $^{192}_{77}\text{Ir}$ )	<u>100</u>
<u>Iridium-194</u> ( $^{194}_{77}\text{Ir}$ )	<u>90</u>
<u>Iron-55</u> ( $^{55}_{26}\text{Fe}$ )	<u>2,000</u>
<u>Iron-59</u> ( $^{59}_{26}\text{Fe}$ )	<u>200</u>
<u>Lanthanum-140</u> ( $^{140}_{57}\text{La}$ )	<u>60</u>
<u>Lead-203</u> ( $^{203}_{82}\text{Pb}$ )	<u>1,000</u>
<u>Lutetium-177</u> ( $^{177}_{71}\text{Lu}$ )	<u>300</u>
<u>Manganese-52</u> ( $^{52}_{25}\text{Mn}$ )	<u>90</u>
<u>Manganese-54</u> ( $^{54}_{25}\text{Mn}$ )	<u>300</u>
<u>Manganese-56</u> ( $^{56}_{25}\text{Mn}$ )	<u>300</u>
<u>Mercury-197</u> ( $^{197}_{80}\text{Hg}$ )	<u>900</u>
<u>Mercury-197m</u> ( $^{197\text{m}}_{80}\text{Hg}$ )	<u>600</u>
<u>Mercury-203</u> ( $^{203}_{80}\text{Hg}$ )	<u>60</u>
<u>Molybdenum-99</u> ( $^{99}_{42}\text{Mo}$ )	<u>600</u>
<u>Neodymium-147</u> ( $^{147}_{60}\text{Nd}$ )	<u>200</u>
<u>Neodymium-149</u> ( $^{149}_{60}\text{Nd}$ )	<u>900</u>
<u>Neptunium-239</u> ( $^{239}_{93}\text{Np}$ )	<u>300</u>
<u>Nickel-59</u> ( $^{59}_{28}\text{Ni}$ )	<u>300</u>
<u>Nickel-63</u> ( $^{63}_{28}\text{Ni}$ )	<u>50</u>
<u>Nickel-65</u> ( $^{65}_{28}\text{Ni}$ )	<u>300</u>
<u>Niobium-93m</u> ( $^{93\text{m}}_{41}\text{Nb}$ )	<u>1,000</u>
<u>Niobium-95</u> ( $^{95}_{41}\text{Nb}$ )	<u>300</u>
<u>Niobium-97</u> ( $^{97}_{41}\text{Nb}$ )	<u>3,000</u>
<u>Osmium-185</u> ( $^{185}_{76}\text{Os}$ )	<u>200</u>
<u>Osmium-191</u> ( $^{191}_{76}\text{Os}$ )	<u>600</u>
<u>Osmium-191m</u> ( $^{191\text{m}}_{76}\text{Os}$ )	<u>9,000</u>
<u>Osmium-193</u> ( $^{193}_{76}\text{Os}$ )	<u>200</u>
<u>Palladium-103</u> ( $^{103}_{46}\text{Pd}$ )	<u>900</u>
<u>Palladium-109</u> ( $^{109}_{46}\text{Pd}$ )	<u>300</u>
<u>Phosphorus-32</u> ( $^{32}_{15}\text{P}$ )	<u>30</u>
<u>Platinum-191</u> ( $^{191}_{78}\text{Pt}$ )	<u>300</u>
<u>Platinum-193</u> ( $^{193}_{78}\text{Pt}$ )	<u>3,000</u>
<u>Platinum-193m</u> ( $^{193\text{m}}_{78}\text{Pt}$ )	<u>3,000</u>
<u>Platinum-197</u> ( $^{197}_{78}\text{Pt}$ )	<u>300</u>
<u>Platinum-197m</u> ( $^{197\text{m}}_{78}\text{Pt}$ )	<u>3,000</u>
<u>Plutonium-241</u> ( $^{241}_{94}\text{Pu}$ )	<u>300</u>
<u>Potassium-42</u> ( $^{42}_{19}\text{K}$ )	<u>900</u>
<u>Praseodymium-142</u> ( $^{142}_{59}\text{Pr}$ )	<u>90</u>

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<u>Praseodymium-143</u> ( $^{143}_{59}\text{Pr}$ )	<u>100</u>
<u>Promethium-147</u> ( $^{147}_{61}\text{Pm}$ )	<u>600</u>
<u>Promethium-149</u> ( $^{149}_{61}\text{Pm}$ )	<u>100</u>
<u>Protactinium-230</u> ( $^{230}_{91}\text{Pa}$ )	<u>600</u>
<u>Protactinium-233</u> ( $^{233}_{91}\text{Pa}$ )	<u>300</u>
<u>Rhenium-183</u> ( $^{186}_{75}\text{Re}$ )	<u>2,000</u>
<u>Rhenium-186</u> ( $^{186}_{75}\text{Re}$ )	<u>300</u>
<u>Rhenium-187</u> ( $^{187}_{75}\text{Re}$ )	<u>9,000</u>
<u>Rhenium-188</u> ( $^{188}_{75}\text{Re}$ )	<u>200</u>
<u>Rhodium-103m</u> ( $^{103\text{m}}_{45}\text{Rh}$ )	<u>30,000</u>
<u>Rhodium-105</u> ( $^{105}_{45}\text{Rh}$ )	<u>300</u>
<u>Rubidium-86</u> ( $^{86}_{37}\text{Rb}$ )	<u>600</u>
<u>Rubidium-87</u> ( $^{87}_{37}\text{Rb}$ )	<u>300</u>
<u>Ruthenium-97</u> ( $^{97}_{44}\text{Ru}$ )	<u>1,000</u>
<u>Ruthenium-103</u> ( $^{103}_{44}\text{Ru}$ )	<u>200</u>
<u>Ruthenium-105</u> ( $^{105}_{44}\text{Ru}$ )	<u>200</u>
<u>Ruthenium-106</u> ( $^{106}_{44}\text{Ru}$ )	<u>30</u>
<u>Samarium-151</u> ( $^{151}_{62}\text{Sm}$ )	<u>1,000</u>
<u>Samarium-153</u> ( $^{153}_{62}\text{Sm}$ )	<u>200</u>
<u>Scandium-46</u> ( $^{46}_{21}\text{Sc}$ )	<u>100</u>
<u>Scandium-47</u> ( $^{47}_{21}\text{Sc}$ )	<u>300</u>
<u>Scandium-48</u> ( $^{48}_{21}\text{Sc}$ )	<u>80</u>
<u>Selenium-75</u> ( $^{75}_{34}\text{Se}$ )	<u>900</u>
<u>Silicon-31</u> ( $^{31}_{14}\text{Si}$ )	<u>3,000</u>
<u>Silver-105</u> ( $^{105}_{47}\text{Ag}$ )	<u>300</u>
<u>Silver-110m</u> ( $^{110\text{m}}_{47}\text{Ag}$ )	<u>90</u>
<u>Silver-111</u> ( $^{111}_{47}\text{Ag}$ )	<u>100</u>
<u>Sodium-22</u> ( $^{22}_{11}\text{Na}$ )	<u>400</u>
<u>Sodium-24</u> ( $^{24}_{11}\text{Na}$ )	<u>600</u>
<u>Strontium-85</u> ( $^{85}_{38}\text{Sr}$ )	<u>900</u>
<u>Strontium-85m</u> ( $^{85\text{m}}_{38}\text{Sr}$ )	<u>20,000</u>
<u>Strontium-89</u> ( $^{89}_{38}\text{Sr}$ ) Bone	<u>20</u>
<u>Strontium-90</u> ( $^{90}_{38}\text{Sr}$ )	<u>8</u>
<u>Strontium-91</u> ( $^{91}_{38}\text{Sr}$ )	<u>200</u>
<u>Strontium-92</u> ( $^{92}_{38}\text{Sr}$ )	<u>200</u>
<u>Sulfur-35 (inorganic)</u> ( $^{35}_{16}\text{S}$ )	<u>500</u>
<u>Tantalum-182</u> ( $^{182}_{73}\text{Ta}$ )	<u>100</u>
<u>Technetium-96</u> ( $^{96}_{43}\text{Tc}$ )	<u>300</u>

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<u>Technetium-96m</u> ( $^{96m}_{43}\text{Tc}$ )	<u>30,000</u>
<u>Technetium-97</u> ( $^{97}_{43}\text{Tc}$ )	<u>6,000</u>
<u>Technetium-97m</u> ( $^{97m}_{43}\text{Tc}$ )	<u>1,000</u>
<u>Technetium-99</u> ( $^{99}_{43}\text{Tc}$ )	<u>900</u>
<u>Technetium-99m</u> ( $^{99m}_{43}\text{Tc}$ )	<u>20,000</u>
<u>Tellurium-125m</u> ( $^{125m}_{52}\text{Te}$ )	<u>600</u>
<u>Tellurium-127</u> ( $^{127}_{52}\text{Te}$ )	<u>900</u>
<u>Tellurium-127m</u> ( $^{127m}_{52}\text{Te}$ )	<u>200</u>
<u>Tellurium-129</u> ( $^{129}_{52}\text{Te}$ )	<u>2,000</u>
<u>Tellurium-129m</u> ( $^{129m}_{52}\text{Te}$ )	<u>90</u>
<u>Tellurium-131m</u> ( $^{131m}_{52}\text{Te}$ )	<u>200</u>
<u>Tellurium-132</u> ( $^{132}_{52}\text{Te}$ )	<u>90</u>
<u>Terbium-160</u> ( $^{160}_{65}\text{Te}$ )	<u>100</u>
<u>Thallium-200</u> ( $^{200}_{81}\text{Tl}$ )	<u>1,000</u>
<u>Thallium-201</u> ( $^{201}_{81}\text{Tl}$ )	<u>900</u>
<u>Thallium-202</u> ( $^{202}_{81}\text{Tl}$ )	<u>300</u>
<u>Thallium-204</u> ( $^{204}_{81}\text{Tl}$ )	<u>300</u>
<u>Thulium-170</u> ( $^{170}_{69}\text{Tm}$ )	<u>100</u>
<u>Thulium-171</u> ( $^{171}_{69}\text{Tm}$ )	<u>1,000</u>
<u>Tin-113</u> ( $^{113}_{50}\text{Sn}$ )	<u>300</u>
<u>Tin-125</u> ( $^{125}_{50}\text{Sn}$ )	<u>60</u>
<u>Tungsten-181</u> ( $^{181}_{74}\text{W}$ )	<u>1,000</u>
<u>Tungsten-185</u> ( $^{185}_{74}\text{W}$ )	<u>300</u>
<u>Tungsten-187</u> ( $^{187}_{74}\text{W}$ )	<u>200</u>
<u>Vanadium-48</u> ( $^{48}_{23}\text{V}$ )	<u>90</u>
<u>Ytterbium-175</u> ( $^{175}_{70}\text{Yb}$ )	<u>300</u>
<u>Yttrium-90</u> ( $^{90}_{39}\text{Y}$ )	<u>60</u>
<u>Yttrium-91</u> ( $^{91}_{39}\text{Y}$ )	<u>90</u>
<u>Yttrium-91m</u> ( $^{91m}_{39}\text{Y}$ )	<u>9,000</u>
<u>Yttrium-92</u> ( $^{92}_{39}\text{Y}$ )	<u>200</u>
<u>Yttrium-93</u> ( $^{93}_{39}\text{Y}$ )	<u>90</u>
<u>Zinc-65</u> ( $^{65}_{30}\text{Zn}$ )	<u>300</u>
<u>Zinc-69</u> ( $^{69}_{30}\text{Zn}$ )	<u>6,000</u>
<u>Zinc-69m</u> ( $^{69m}_{30}\text{Zn}$ )	<u>200</u>
<u>Zirconium-93</u> ( $^{93}_{40}\text{Zr}$ )	<u>2,000</u>
<u>Zirconium-95</u> ( $^{95}_{40}\text{Zr}$ )	<u>200</u>
<u>Zirconium-97</u> ( $^{97}_{40}\text{Zr}$ )	<u>60</u>

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BOARD NOTE: This Table R derives from Table VI-2 (Annual Average Concentrations Yielding 4 Millirem per Year for a Two Liter Daily Intake), Statement of Basis and Purpose for the National Primary Drinking Water Regulations – Radionuclides, USEPA, Office of Radiation Protection (July 9, 1976), at 87-94, and Appendix I (Comparison of Derived Values of Beta and Photon Emitters), Implementation Guidance for Radionuclides, USEPA, Office of Ground Water and Drinking Water, EPA 816-F-00-002 (March 2002). USEPA based these values on NBS Handbook 69 (63), incorporated by reference in Section 611.102.

Calculating compliance with Section 611.330(d) under Section 611.742 requires dividing the measured concentration for each radionuclide by the appropriate conversion factor to determine its calculated fractional contribution to the total annual exposure limit of 4 mrem/yr:

$$\frac{\text{Fraction of Maximum Exposure Limit (4 mrem}\cdot\text{yr}^{-1}\text{)}}{\text{Sample Concentration (pCi}\cdot\ell^{-1}\text{)}} \\ \frac{\text{Conversion Factor (pCi}\cdot\ell^{-1}/4\text{ mrem}\cdot\text{yr}^{-1}\text{)}}{\text{Conversion Factor (pCi}\cdot\ell^{-1}/4\text{ mrem}\cdot\text{yr}^{-1}\text{)}}$$

The supplier then sums the fractional contributions for all radionuclides to determine the total fraction of the maximum exposure limit:

$$\text{Total Fraction of Maximum Exposure Limit for All Radionuclides Present} \\ = \sum_{\text{Isotope 1}}^{\text{Isotope n}} \text{Fraction of Maximum Exposure Limit for Each Radionuclide}$$

A sum of fractions result exceeding 1.00 exceeds the 4 mrem/yr standard in Section 611.330(d).

The total exposure is this sum of fractions (i.e., the total fraction of maximum exposure limit) times 4 mrem $\cdot$ yr $^{-1}$ .

See Statement of Basis and Purpose for the National Primary Drinking Water Regulations – Radionuclides, USEPA, Office of Radiation Protection (July 9, 1976), at 80-86, and Implementation Guidance for Radionuclides, USEPA, Office of Ground Water and Drinking Water, EPA 816-F-00-002 (March 2002), pp. II-5 and II-6.

(Source: Added at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)



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**Section 611.TABLE Z Federal Effective Dates**

The following are the effective dates of the various federal NPDWRs:

Fluoride (40 CFR 141.62(b)(1)) (corresponding with Section 611.301(b))	October 2, 1987
Phase I VOCs (40 CFR 141.61(a)(1) through (a)(8)) (corresponding with Section 611.311(a)) (benzene, carbon tetrachloride, p-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,1-trichloroethane, trichloroethylene, and vinyl chloride)	January 9, 1989
Total Coliforms Rule (40 CFR 141.21 and 141.63) (corresponding with Sections 611.521-611.527 and 611.325) (total coliforms, fecal coliforms, and E. coli) Replaced by the Revised Total Coliforms Rule (40 CFR 141, subpart Y)	December 31, 1990
Surface Water Treatment Rule (40 CFR 141, subpart H) (corresponding with Subpart B) (filtration, disinfection, and turbidity)	Effective: December 31, 1990 Compliance: December 31, 1991
Lead and Copper (40 CFR 141, subpart I) (corresponding with Subpart G) (lead and copper monitoring, reporting, and recordkeeping requirements of 40 CFR 141.86 through 141.91)	July 7, 1991
Phase II IOCs (40 CFR 141.62(b)(2) and (b)(4) through (b)(10)) (corresponding with Section 611.301(b)) (asbestos, cadmium, chromium, mercury, nitrate, nitrite, and selenium)	July 30, 1992
Phase II VOCs (40 CFR 141.61(a)(9) through (a)(18)) (corresponding with Section 611.311(a)) (o-dichlorobenzene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, 1,2-dichloropropane, ethylbenzene, monochlorobenzene, styrene, tetrachloroethylene, toluene, and xylenes (total))	July 30, 1992

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- Phase II SOCs (40 CFR 141.61(c)(1) through (c)(18)) July 30, 1992  
(corresponding with Section 611.311(c))  
(alachlor, atrazine, carbofuran, chlordane,  
dibromochloropropane, ethylene dibromide, heptachlor,  
heptachlor epoxide, lindane, methoxychlor, polychlorinated  
biphenyls, toxaphene, 2,4-D, and 2,4,5-TP (silvex))
- Phase V SOC (40 CFR 141.61(c)(3)) August 17, 1992  
(corresponding with Section 611.311(c))  
(endrin)
- Lead and Copper (40 CFR 141, subpart I) December 7, 1992  
(corresponding with Subpart G of this Part)  
(lead and copper corrosion control, water treatment, public  
education, and lead service line replacement requirements of  
40 CFR 141.81 through 141.85)
- Phase IIB IOC (40 CFR 141.62(b)(3)) January 1, 1993  
(corresponding with Section 611.301(b))  
(barium)
- Phase IIB SOCs (40 CFR 141.61(a)(9) through (a)(18)) January 1, 1993  
(corresponding with Section 611.311(c))  
(aldicarb, aldicarb sulfone, aldicarb sulfoxide, and  
pentachlorophenol. See the Board note appended to Section  
611.311(c) for information relating to implementation of  
requirements relating to aldicarb, aldicarb sulfone, and  
aldicarb sulfoxide.)
- Phase V IOCs (40 CFR 141.62(b)(11) through (b)(15)) January 17, 1994  
(corresponding with Section 611.301(b))  
(antimony, beryllium, cyanide, nickel, and thallium)
- Phase V VOCs (40 CFR 141.61(b)(19) through (b)(21)) January 17, 1994  
(corresponding with Section 611.311(a))  
(dichloromethane, 1,2,4-trichlorobenzene, and 1,1,2-  
trichloroethane)

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Phase V SOCs (40 CFR 141.61(c)(19) through (c)(25)) (corresponding with Section 611.311(c)) (benzo(a)pyrene, dalapon, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate dinoseb, diquat, endothall, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram, simazine, and 2,3,7,8-TCDD)	January 17, 1994
Consumer Confidence Report Rule (40 CFR 141, subpart Q) (corresponding with Subpart O) (notification to public of drinking water quality)	September 18, 1998
Interim Enhanced Surface Water Treatment Rule (40 CFR 141, subpart P) (corresponding with Subpart R) (applicable to suppliers providing water to fewer than 10,000 persons) (Giardia lamblia, viruses, heterotrophic plate count bacteria, Legionella, Cryptosporidium, and turbidity)	February 16, 1999
Public Notification Rule (40 CFR 141, subpart Q) (corresponding with Subpart V) (notification to public of NPDWR violations, variances or exemptions, or other situations that could bear on public health)	June 5, 2000
Filter Backwash Rule (40 CFR 141.76) (corresponding with Section 611.276) (reuse of spent filter backwash water, thickener supernatant, or liquids from dewatering processes)	August 7, 2001
Disinfection/Disinfectant Byproducts Rule (40 CFR 141.64, 141.65 and 141, subpart L) Smaller Systems (serving 10,000 or fewer persons) Larger Systems (serving more than 10,000 persons) (corresponding with Sections 611.312 and 611.313) (total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide)	December 16, 2001 December 16, 2003

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Long Term 1 Enhanced Surface Water Treatment Rule (40 CFR 141, subpart T) (corresponding with subpart X) (applicable to suppliers providing water to 10,000 or more persons) (Giardia lamblia, viruses, heterotrophic plate count bacteria, Legionella, Cryptosporidium, and turbidity)	February 13, 2002
Radionuclides (40 CFR 141.66) (corresponding with Section 611.330) (combined radium (Ra-226 + Ra-228), gross alpha particle activity, beta particle and photon activity, and uranium)	December 8, 2003
Arsenic (40 CFR 141.62(b)(16)) (corresponding with Section 611.301(b)) (arsenic)	January 23, 2006
Stage 2 Disinfection/Disinfectant Byproducts Rule (40 CFR 141, subparts U and V) Systems that serve fewer than 10,000 persons)	
Submit plan	April 1, 2008
Complete monitoring or study	March 31, 2010
Submit IDSE report	July 1, 2010
Compliance with monitoring requirements	
If no Cryptosporidium monitoring is required	October 1, 2013
If Cryptosporidium monitoring is required	October 1, 2014
Systems that serve 10,000 to 49,999 persons)	
Submit plan	October 1, 2007
Complete monitoring or study	September 30, 2009
Submit IDSE report	January 1, 2010
Compliance with monitoring requirements	October 1, 2013
Systems that serve 50,000 to 99,999 persons)	
Submit plan	April 1, 2007
Complete monitoring or study	March 31, 2009
Submit IDSE report	July 1, 2009
Compliance with monitoring requirements	October 1, 2012
Systems that serve 100,000 or more persons)	
Submit plan	October 1, 2006
Complete monitoring or study	September 30, 2008
Submit IDSE report	January 1, 2009
Compliance with monitoring requirements	April 1, 2012

## POLLUTION CONTROL BOARD

## NOTICE OF PROPOSED AMENDMENTS

(corresponding with Subparts W and Y)  
 (total trihalomethanes and haloacetic acids (five))

Long Term 2 Enhanced Surface Water Treatment Rule (40 CFR  
 141, subpart W)

Systems that serve fewer than 10,000 persons

And which monitor for E. coli

Begin first round of monitoring	October 1, 2008
Begin treatment for Cryptosporidium	October 1, 2014
Begin second round of monitoring	October 1, 2017

And which monitor for cryptosporidium

Begin first round of monitoring	April 1, 2010
Begin treatment for Cryptosporidium	October 1, 2014
Begin second round of monitoring	April 1, 2019

Systems that serve 10,000 to 49,999 persons

Begin first round of monitoring	April 1, 2008
Begin treatment for Cryptosporidium	October 1, 2013
Begin second round of monitoring	October 1, 2016

Systems that serve 50,000 to 99,999 persons

Begin first round of monitoring	April 1, 2007
Begin treatment for Cryptosporidium	October 1, 2012
Begin second round of monitoring	October 1, 2015

Systems that serve 100,000 or more persons

Begin first round of monitoring	October 1, 2006
Begin treatment for Cryptosporidium	April 1, 2012
Begin second round of monitoring	April 1, 2015

(corresponding with Subpart Z)

(E. coli, Cryptosporidium, Giardia lamblia, viruses, and  
 turbidity)

Groundwater Rule (40 CFR 141, subpart S)

December 1, 2009

(corresponding with Subpart S)

(E. coli, enterococci, and coliphage)

Revised Total Coliforms Rule (40 CFR 141, Subpart Y)

Effective: April 15, 2013

(corresponding with subpart AA)

Compliance: April 1, 2016

(total coliforms (indicator), E. coli)

Lead-Free Fixtures Rule (40 CFR 143, subpart B)

Effective: October 1, 2020

(corresponding with Section 611.126)

Compliance: September 1,

(lead in plumbing fixtures)

2023

Lead and Copper Rule Revisions (40 CFR 141, subpart I)

Effective: December 16, 2021

(corresponding with Subpart G)

Compliance: October 16, 2024

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

(lead and copper (indicator))

(Source: Amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)