ILLINOIS POLLUTION CONTROL BOARD
August 24, 2000

IN THE MATTER OF:	)	
	)	
SAFE DRINKING WATER UPDATE, USEPA	)	R00-10
REGULATIONS	)	(Identical-in-Substance Rulemaking -
(July 1, 1999, through December 31, 1999)	)	Public Water Supplies)

Adopted Rule. Final Order.

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

BACKGROUND

Under Section 17.5 of the Environmental Protection Act (Act) (415 ILCS 5/17.5 (1998)), the Board today adopts amendments to the Illinois regulations that are "identical in substance" (IIS) to the National Primary Drinking Water regulations (NPDWRs) adopted by the United States Environmental Protection Agency (USEPA). These regulations implement sections 1412(b), 1414(c), 1417(a), and 1445(a) of the Safe Drinking Water Act (SDWA), 42 U.S.C. §§ 300g-1(b), 300g-3(c), 300g-6(a), and 300j-4(a)(1996). The nominal timeframe of this docket includes SDWA amendments that the USEPA adopted in the period from July 1, 1999, through December 31, 1999. The federal SDWA regulations are found at 40 C.F.R. §§ 141 and 142. The USEPA took two actions during the nominal timeframe period that could necessitate Board action, but, as explained below, in response to public comment the Board is incorporating only one federal action into the Board's rules. The final rule adopted today includes the addition of analytical methods approved for determining compliance with the drinking water regulations.

Section 17.5 of the Act (415 ILCS 5/17.5 (1998)) provides for quick adoption of regulations that are "identical in substance" to federal regulations that the USEPA adopts to implement sections 1412(b), 1414(c), 1417(a), and 1445(a) of the SDWA. Section 17.5 of the Act also provides that Title VII of the Act (415 ILCS 5/1 *et seq*. (1998)) and Section 5 of the Administrative Procedure Act (APA) (5 ILCS 100/5-35 & 5-40 (1998)) do not apply to the Board's adoption of IIS regulations. Accordingly, this rulemaking is not subject to first or second-notice review by the Joint Committee on Administrative Rules (JCAR). However, to facilitate receipt of public comments, the Board's June 8, 2000 proposal for public comment was published in the *Illinois Register*. 24 Ill. Reg. 8728 (June 30, 2000).

Section 7.2(b) of the Act (415 ILCS 5/7.2 (1998)) requires the Board to complete its IIS rulemaking actions within one year of the date of the earliest federal amendments involved in a docket. In this docket, the earliest federal action requiring Board action occurred on September 17, 1999. Thus, the Board must complete its rulemaking activity in this docket prior to September 17, 2000.

FEDERAL ACTIONS CONSIDERED IN THIS RULEMAKING

This rulemaking incorporates certain federal amendments that occurred during the period of July 1, 1999, through December 31, 1999. The SDWA regulations are found at 40 C.F.R. §§ 141-142. The USEPA amended the federal SDWA regulations two times during that period: September 17, 1999, and December 1, 1999. This rulemaking considers both of these actions. As explained below, only the December 1, 1999 action requires corresponding Board action.

The federal amendments incorporated into this rulemaking are summarized as follows:

Federal Action	Summary
64 Fed. Reg. 50556 (September 17, 1999)	Revisions to the Unregulated Contaminant Monitoring Regulation for Public Water. The USEPA adopted amendments requiring public water supplies to monitor for unregulated drinking water contaminants. The USEPA adopted the amendments under section 1445(a) of SDWA.
64 Fed. Reg. 67450 (December 1, 1999)	National Primary and Secondary Drinking Water Regulations: Analytical Methods for Chemical and Microbiological Contaminants and Revisions to Laboratory Certification Requirements. The USEPA amended the rules setting forth the analytical methods approved for use in demonstrating compliance with the SDWA requirements.

Public Comments Received

The Board adopted a proposal for public comment in this matter by order dated June 8, 2000. The "Notices of Proposed Amendments" appeared in the June 30, 2000 issue of the *Illinois Register* at 24 Ill. Reg. 8728. The Board accepted public comments on the proposal for a 45-day period following publication in the *Illinois Register*. The comment period expired on August 15, 2000.

The Board received four comments during the public comment (PC) period. Those comments are as follows:

PC 1 Identical First Notice Line Numbered Version of proposed amendments from JCAR (received June 29, 2000).

PC 2 July 24, 2000 memo from Deborah Connelly, JCAR (received July 25, 2000).

PC 3 August 9, 2000 letter from David S. Horak, Safe Drinking Water Branch, USEPA, Region 5 (received August 15, 2000).

PC 4 August 14, 2000 letter from Lou Allyn Byus, Assistant Manager - Field Operations, Division of Water Supplies, Illinois EPA (received August 18, 2000).

These public comments are discussed in more detail later in this opinion.

Response to JCAR Additional Questions

In addition to PC 1, the Board received public comment from JCAR in PC 2, which included two inquiries from JCAR. It is more efficient to address these questions here, rather than later. The first question addressed incorporating by reference certain sections of the unregulated contaminant monitoring regulations, as proposed by the Board. As the Board is not adopting the proposed program in response to Illinois Environmental Protection Agency (Agency) and USEPA comments that the proposed rules were not federally required to be adopted as IIS rules, the issue is no longer relevant.

The second question in PC 2 addressed a section of the Board's June 8, 2000 proposal for public comment, appearing at page 4. The section reads as follows:

> Board Amendments not Directly Federally Driven
>
> The Board is updating all C.F.R. citations in the affected sections of this rulemaking to the 1999 version. The Board is also amending Section 611.310(a) and the Section 611.310(c) Board Note to correct any ambiguity in the regulations for the purpose of avoiding confusion to the regulated community. Section 611.310 is applicable to all public water systems. The Board is also making numerous technical changes suggested by JCAR, the USEPA, and the Agency.

JCAR questioned the Board's authority to make such changes. JCAR's inquiry points out that the Board's caption of this portion of the opinion is not precisely accurate, and is in need of revision.

In every IIS rulemaking, the Board makes various necessary changes to any Section of the Administrative Code that may be open as a result of USEPA actions taken during the update period. The Board updates references to the most recent version of the C.F.R. and various statutes and ensures that the regulations are consistent with the requirements of the C.F.R. The Board also corrects any spelling or punctuation errors that may be present. The Board performs these functions to provide the regulated community with cost effective and accurate regulations. JCAR also suggests changes to the regulations that are not a result of the most recent federal amendments.

Section 17.5 of the Act mandates that the Board adopt regulations that are "identical in substance" to the Primary Drinking Water regulations. 415 ILCS 5/17.5 (1998). If the Board could not make corrections to the regulations of the type described above to correct any observed error, omission, or lack of conformity with rules of the Secretary of State, the Illinois regulations would not become or remain "identical in substance" to the federal regulations.

Section 7.2(a) of the Act contemplates the necessity of such changes in the third sentence, in which it directs that "the only changes that may be made by the Board to the federal regulations are those changes that in no way change the scope or meaning of any portion of the regulations."

415 ILCS 5/7.2(a) (1998). The Board finds that the changes described in the quoted passage of the opinion above are well within its statutory authority, and the Board will continue to make them in its IIS rulemakings. However, acknowledging the misnomer, *i.e.*, "Board Amendments not Federally Driven" identified by JCAR, the Board will discontinue use of the inaccurate descriptor. Beginning with this opinion, and in those hereafter, the Board will label the portion of the opinion describing such changes as "Additional Technical Changes Authorized by Section 7.2(a)."

DISCUSSION

September 17, 1999: Revisions to the Unregulated Contaminant Monitoring Regulation for Public Water

Federal Action

The Safe Drinking Water Act (SDWA)(42 USC §§ 300f *et seq*. (1998)), as amended in 1996, requires the USEPA to establish criteria for a program to monitor for unregulated contaminants and, by August, 1999 to publish a list of contaminants to be monitored. The USEPA promulgated the Unregulated Contaminant Monitoring Regulation (UMCR) for Public Water Systems (PWSs), which significantly revises the existing regulations for unregulated contaminant monitoring. The amendments include a list of contaminants to monitor for, procedures for selecting a nationwide representative sample of small systems that will be required to monitor, and the frequency and schedule for monitoring, the sampling points, and the approved analytical methods for testing. The USEPA adopted the amendments under Section 1445(a) of SDWA (42 USC §§ 300j-4 (1998)).

Amendments to Board Rules

The Board proposed incorporating the bulk of these amendments into its rules by adding Sections 611.511, 611.512, and 611.Appendix I. However, as a result of the public comments of the USEPA and the Agency, the Board is not including these amendments into this final rulemaking. The adoption of the unregulated contaminant monitoring program is not necessary for State primacy. For a more detailed discussion on the reasoning behind the omission of the unregulated contaminant monitoring program, see the "Public Comments" section below.

December 1, 1999: Revisions to National Primary and Secondary Drinking Water Regulations: Analytical Methods for Chemical and Microbiological Contaminants and Revisions to Laboratory Certification Requirements.

Federal Action

The USEPA approved the use of updated versions of 25 American Society for Testing and Materials (ASTM), 54 Standard Methods for Examination of Water and Wastewater Methods (Standard Methods), and 13 USEPA analytical methods (USEPA Methods) for compliance determinations of chemical contaminants in drinking water. At the same time, the USEPA withdrew approval of 13 previous versions of the USEPA Methods. The USEPA also approved the use of a new medium and 2 new methods for simultaneous determination of total coliforms and *E. coli*. The USEPA also approved new methods of determination for lead, magnesium, and acid herbicides. The USEPA made several technical corrections to existing regulations.

Amendments to Board Rules

The Board is amending its regulations for coliform sampling in Section 611.526, and methods incorporated by reference in Section 611.102. In Section 611.526 microbiological monitoring analytical methods, the Board adds tests set forth under the Standard Methods 19th edition. The Board also adds the E*Colite® Test (Charm Sciences, Inc.) and the m-ColiBlue24® Test (Hatch Company).

The Board is amending regulations incorporated by reference for inorganic chemical sampling and analytical requirements in Section 611.102. The Board is amending its regulations for analytical methods or organic chemical contaminants in Section 611.645 and regulations incorporated by reference in Section 611.102. In Section 611.645 the Board is adding analytical methods that the USEPA added. The Board is also amending its regulations for volatile organic chemicals in Section 611.646 and regulations incorporated by reference in Section 611.102. The Board amends Section 611.531 to include the Standard Methods 19th edition.

The Board amends Section 611.490 to require measurements for alkalinity, calcium, conductivity, disinfectant residual, orthophosphate, and silica to be performed by a certified operator under 35 Ill. Adm. Code 603.103.

Additional Technical Changes Authorized by Section 7.2(a)

The Board is updating all C.F.R. citations in the affected sections of this rulemaking to the 1999 version. The Board is also amending Section 611.310(a) and the Section 611.310(c) Board Note to correct any ambiguity in the regulations for the purpose of avoiding confusion to the regulated community. Section 611.310 is applicable to all public water systems. The Board is also making numerous technical changes suggested by JCAR, the USEPA, and the Agency.

In PC 1, JCAR submitted a line numbered version of the proposed rule, as it appeared in the Illinois Register. Changes in the proposed rule that were made by JCAR prior to publication in the Illinois Register were indicated in an accompanying green cover sheet. JCAR highlighted various minor technicalities, formatting discrepancies, and misspellings that were corrected by JCAR prior to publication. Also, JCAR indicated that it had struck “µg” and had added “mg” four times in Section 611.526(f). These changes to the regulations were made in error. The Board does not strike the four instances of “µg” currently on file in this final rule.

In PC 2, JCAR submitted additional suggested changes in a line numbered version of the proposed rule. The Board made numerous minor technical changes suggested by JCAR in this final rule. The changes include adding and removing punctuation, spacing, capitalization, and spelling. The more substantive changes are indicated in the following table of revisions.

In PC 3, the USEPA submitted comments concerning monitoring and analytical requirements. The Board has incorporated these suggestions. The USEPA also stated that since revisions to the unregulated contaminant monitoring regulations are not required for primacy, it did not review the related proposed amendments.

In PC 4, the Agency requested that the proposed amendments implementing the unregulated contaminant monitoring program be omitted from the final rule. The Agency stated that Illinois is not required to adopt these rules in order to maintain primary enforcement authority for the SDWA. The Board proposed implementing the unregulated contaminant monitoring program by adding Sections 611.511, 611.512, and 611.Appendix I. The Board has omitted these sections in this final rule at the request of the Agency. The Agency also noted inconsistencies with respect to certain analytical methods. The Board has corrected any inconsistencies.

Revisions to the Text of the Proposed Amendments in Final Adoption

Section Revised	Source(s) of Revision(s)	Revision(s)
611.102(b)	JCAR	Deleted "(See Environetics, Inc.)"
611.102(b)	JCAR	Changed "Water Works" to "Waterworks"
611.102(b)	JCAR	Added parenthesis to "(ATI Orion)"
611.102(b)	JCAR	Capitalized "Complexometric"
611.102(b)	JCAR	Deleted "ASTM Method D2459-72, "Standard Test Method for Gamma Spectrometry in Water," approved July 28, 1972, discontinued 1988."
611.102(b)	JCAR	Did not amend "1995" in the Board Note to "Technical Notes on Drinking Water Methods", EPA-600/R-94-173
611.310	JCAR, Board	Changed "Section 611.641 et seq." to "Subpart O of this Part"
611.511	Agency	Removed proposed Section
611.512	Agency	Removed proposed Section
611.526(c)(1)	JCAR	Changed "false negative" to "false-negative"
611.526(f)	Board	Did not strike "µg" and add "mg" (four times)
611.531(a)(1)	JCAR	Changed "analysis" to "analyses"
611.531(a)(2)(iii)	JCAR	Capitalized "Autoanalysis Colilert System"
611.531(b)	JCAR	Added "19th ed."
611.611(a)(13)	JCAR	Deleted redundant "Method"

611.611(a)(16)	Agency, USEPA	Changed “D3559-90 D” to “D3559-95D”
611.611(a)(17)	Agency, USEPA	Changed “D1688-90 C” to “D1688-95 C”
611.611(a)(19)	Agency, USEPA	Changed “D1125-91 A” to “D1125-95 A”
611.611(a)(22)	Agency, USEPA	Changed “4110” to “4110 B”
611.611(a)(23)	Agency, USEPA	Changed “D859-88” to “D859-95”
611.611(b)(2)	Agency, USEPA	Added (C): “Samples must be analyzed as soon after collection as possible, but in any event within 6 months.”
611.611(b)(11)	Agency, USEPA	Changed “28 days” to “14 days”
611.611(c)(1)	JCAR, Board	Changed “35 Ill. Adm. Code 183.125(c)”, which has been repealed, to “35 Ill. Adm. Code Part 186”
611.611 Board Note	JCAR, Board	Deleted the Board Note
611.645	USEPA	Changed TTHM Method “551” to “551.1”
611.646(d)	JCAR, Board	Deleted redundant “compliance period starting in the”
611.646(k)(2)	JCAR	Added “shall be required”
611.646(k)(2)(A)	JCAR	Changed “annual” to “annually”
611.Appendix I	Agency	Removed proposed Section

ORDER

The Board will cause the amendments to be published in the *Illinois Register.*

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD

PART 611

PRIMARY DRINKING WATER STANDARDS

SUBPART A: GENERAL

SUBPART B: FILTRATION AND DISINFECTION

SUBPART C: USE OF NON-CENTRALIZED TREATMENT DEVICES

SUBPART D: TREATMENT TECHNIQUES

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

SUBPART G: LEAD AND COPPER

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

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART R: ENHANCED FILTRATION AND DISINFECTION

Section

SUBPART T: REPORTING, PUBLIC NOTIFICATION AND RECORDKEEPING

SUBPART U: CONSUMER CONFIDENCE REPORTS

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. ______, effective_______.

SUBPART A: GENERAL

Section 611.102 Incorporations by Reference

a) Abbreviations and short-name listing of references. The following names and abbreviated names, presented in alphabetical order, are used in this Part to refer to materials incorporated by reference:

“Amco-AEPA-1 Polymer” is available from Advanced Polymer Systems.

“ASTM Method” means a method published by and available from the American Society for Testing and Materials (ASTM).

“Colisure Test” means “Colisure Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia Coli in Drinking Water”, available from Millipore Corporation, Technical Services Department.

“Dioxin and Furan Method 1613” means “Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope-Dilution HRGC/HRMS”, available from NTIS.

“GLI Method 2” means GLI Method 2, “Turbidity”, Nov. 2, 1992, available from Great Lakes Instruments, Inc.

“Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources”, available from USEPA Science and Technology Branch.

“HASL Procedure Manual” means HASL Procedure Manual, HASL 300, available from ERDA Health and Safety Laboratory.

“Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure”, NCRP Report Number 22, available from NCRP.

“NCRP” means “National Council on Radiation Protection”.

“NTIS” means “National Technical Information Service”.

“New Jersey Radium Method” means “Determination of Radium 228 in Drinking Water”, available from the New Jersey Department of Environmental Protection.

“New York Radium Method” means “Determination of Ra-226 and Ra-228 (Ra-02)”, available from the New York Department of Public Health.

“ONGP-MUG Test” (meaning “minimal medium ortho-nitrophenyl-beta-d-galactopyranoside-4-methyl-umbelliferyl-beta-d-glucuronide test”), also called the “Autoanalysis Colilert System”, is Method 9223, available in “Standard Methods for the Examination of Water and Wastewater”, 18th ed., from American Public Health Association.

“Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions”, available from NTIS.

“Radiochemical Methods” means “Interim Radiochemical Methodology for Drinking Water”, available from NTIS.

“Standard Methods”, means “Standard Methods for the Examination of Water and Wastewater”, available from the American Public Health Association or the American Waterworks Association.

“Technical Bulletin 601” means “Technical Bulletin 601, Standard Method of Testing for Nitrate in Drinking Water”, July 1994, available from Analytical Technology, Inc.

“Technicon Methods” means “Fluoride in Water and Wastewater”, available from Technicon.

“USDOE Manual” means “EML Procedures Manual”, available from the United State Department of Energy.

“USEPA Asbestos Methods-100.1” means Method 100.1, “Analytical Method for Determination of Asbestos Fibers in Water”, available from NTIS.

“USEPA Asbestos Methods-100.2” means Method 100.2, “Determination of Asbestos Structures over 10-mm in Length in Drinking Water”, available from NTIS.

“USEPA Environmental Inorganics Methods” means “Methods for the Determination of Inorganic Substances in Environmental Samples”, available from NTIS; “Methods for the Determination of Inorganic Substances in Environmental Samples”, August 1993, for Method 300.0; “Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0”, 1997, for Method 300.1.

“USEPA Environmental Metals Methods” means “Methods for the Determination of Metals in Environmental Samples”, available from NTIS.

“USEPA Organic Methods” means “Methods for the Determination of Organic Compounds in Drinking Water”, July 1991, for Methods 502.2, 505, 507, 508, 508A, 515.1, and 531.1; “Methods for the Determination of Organic Compounds in Drinking Water--Supplement I”, July 1990, for Methods 506, 547, 550, 550.1, and 551; and “Methods for the Determination of Organic Compounds in Drinking Water--Supplement II”, August 1992, for Methods 515.2, 524.2, 548.1, 549.1, 552.1, and 555, available from NTIS. Methods 504.1, 508.1, and 525.2 are available from EPA EMSL; “Methods for the Determination of Organic Compounds” in Drinking Water-Supplement II, August 1992, for Method 552.1; “Methods for the Determination of Organic Compounds in Drinking Water-Supplement III”, August 1995, for Methods 502.2, 524.2, 551.1, and 552.2.

“USEPA Interim Radiochemical Methods” means “Interim Radiochemical Methodology for Drinking Water”, EPA 600/4-75-008 (revised), March 1976. Available from NTIS.

“USEPA Radioactivity Methods” means “Prescribed Procedures for Measurement of Radioactivity in Drinking Water”, EPA 600/4-80-032, August 1980. Available from NTIS.

“USEPA Radiochemical Analyses” means “Radiochemical Analytical Procedures for Analysis of Environmental Samples”, March 1979. Available from NTIS.

“USEPA Radiochemistry Methods” means “Radiochemistry Procedures Manual”, EPA 520/5-84-006, December 1987. Available from NTIS.

“USEPA Technical Notes” means “Technical Notes on Drinking Water Methods”, available from NTIS.

"USGS Methods" means "Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments", available from NTIS and USGS.

"Waters Method B-1011" means "Waters Test Method for the Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography", available from Millipore Corporation, Waters Chromatography Division.

b) The Board incorporates the following publications by reference:

Access Analytical Systems, Inc.~~ (See Environetics, Inc.)~~

Advanced Polymer Systems, 3696 Haven Avenue, Redwood City, CA 94063 415-366-2626:

Amco-AEPA-1 Polymer. See 40 CFR 141.22(a) (~~1998~~1999). Also, as referenced in ASTM D1889.

American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005 800-645-5476:

"Standard Methods for the Examination of Water and Wastewater", 17th Edition, 1989 (referred to as "Standard Methods, 17th ed.").

"Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, including "Supplement to the 18th Edition of Standard Methods for the Examination of Water and Wastewater", 1994 (collectively referred to as "Standard Methods, 18th ed."). See the methods listed separately for the same references under American ~~Water Works~~Waterworks Association.

"Standard Methods for the Examination of Water and Wastewater", 19th Edition, 1995 (referred to as "Standard Methods, 19th ed.").

American Waterworks Association et al., 6666 West Quincy Ave., Denver, CO 80235 303-794-7711:

Standard Methods for the Examination of Water and Wastewater, 13th Edition, 1971 (referred to as "Standard Methods, 13th ed.").

Method 302, Gross Alpha and Gross Beta Radioactivity in Water (Total, Suspended and Dissolved).

Method 303, Total Radioactive Strontium and Strontium 90 in Water.

Method 304, Radium in Water by Precipitation.

Method 305, Radium 226 by Radon in Water (Soluble, Suspended and Total).

Method 306, Tritium in Water.

Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992 (referred to as “Standard Methods, 18th ed.”):

Method 2130 B, Turbidity, Nephelometric Method.

Method 2320 B, Alkalinity, Titration Method.

Method 2510 B, Conductivity, Laboratory Method.

Method 2550, Temperature, Laboratory and Field Methods.

Method 3111 B, Metals by Flame Atomic Absorption Spectrometry, Direct Air-Acetylene Flame Method.

Method 3111 D, Metals by Flame Atomic Absorption Spectrometry, Direct Nitrous Oxide-Acetylene Flame Method.

Method 3112 B, Metals by Cold-Vapor Atomic Absorption Spectrometry, Cold-Vapor Atomic Absorption Spectrometric Method.

Method 3113 B, Metals by Electrothermal Atomic Absorption Spectrometry, Electrothermal Atomic Absorption Spectrometric Method.

Method 3114 B, Metals by Hydride Generation/Atomic Absorption Spectrometry, Manual Hydride Generation/Atomic Absorption Spectrometric Method.

Method 3120 B, Metals by Plasma Emission Spectroscopy, Inductively Coupled Plasma (ICP) Method.

Method 3500-Ca D, Calcium, EDTA Titrimetric Method.

Method 4110 B, Determination of Anions by Ion Chromatography, Ion Chromatography with Chemical Suppression of Eluent Conductivity.

Method 4500-CN^- C, Cyanide, Total Cyanide after Distillation.

Method 4500-CN^- E, Cyanide, Colorimetric Method.

Method 4500-CN^- F, Cyanide, Cyanide-Selective Electrode Method.

Method 4500-CN^- G, Cyanide, Cyanides Amenable to Chlorination after Distillation.

Method 4500-ClO_2 C, Chlorine Dioxide, Amperometric Method I.

Method 4500-F^- B, Fluoride, Preliminary Distillation Step.

Method 4500-F^- C, Fluoride, Ion-Selective Electrode Method.

Method 4500-F^- D, Fluoride, SPADNS Method.

Method 4500-F^- E, Fluoride, Complexone Method.

Method 4500-H^+ B, pH Value, Electrometric Method.

Method 4500-NO_2^- B, Nitrogen (Nitrite), Colorimetric Method.

Method 4500-NO_3^- D, Nitrogen (Nitrate), Nitrate Electrode Method.

Method 4500-NO_3^- E, Nitrogen (Nitrate), Cadmium Reduction Method.

Method 4500-NO_3^- F, Nitrogen (Nitrate), Automated Cadmium Reduction Method.

Method 4500-O_3 B, Ozone (Residual) (Proposed), Indigo Colorimetric Method.

Method 4500-P E, Phosphorus, Ascorbic Acid Method.

Method 4500-P F, Phosphorus, Automated Ascorbic Acid Reduction Method.

Method 4500-Si D, Silica, Molybdosilicate Method.

Method 4500-Si E, Silica, Heteropoly Blue Method.

Method 4500-Si F, Silica, Automated Method for Molybdate-Reactive Silica.

Method 4500-SO_4^{2-} C, Sulfate, Gravimetric Method with Ignition of Residue.

Method 4500-SO_4^{2-} D, Sulfate, Gravimetric Method with Drying of Residue.

Method 4500-SO_4^{2-} F, Sulfate, Automated Methylthymol Blue Method.

Method 6610, Carbamate Pesticide Method.

Method 6651, Glyphosate Herbicide (Proposed).

Method 7110 B, Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved), Evaporation Method for Gross Alpha-Beta.

Method 7110 C, Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved), Coprecipitation Method for Gross Alpha Radioactivity in Drinking Water (Proposed).

Method 7500-Cs B, Radioactive Cesium, Precipitation Method.

Method 7500-3H, B, Tritium, Liquid Scintillation Spectrometric Method.

Method 7500-I B, Radioactive Iodine, Precipitation Method.

Method 7500-I C, Radioactive Iodine, Ion-Exchange Method.

Method 7500-I D, Radioactive Iodine, Distillation Method.

Method 7500-Ra B, Radium, Precipitation Method.

Method 7500-Ra C, Radium, Emanation Method.

Method 7500-Ra D, Radium, Sequential Precipitation Method (Proposed).

Method 7500-U B, Uranium, Radiochemical Method (Proposed).

Method 7500-U C, Uranium, Isotopic Method (Proposed).

Method 9215 B, Heterotrophic Plate Count, Pour Plate Method.

Method 9221 A, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Introduction.

Method 9221 B, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Standard Total Coliform Fermentation Technique.

Method 9221 C, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Estimation of Bacterial Density.

Method 9221 D, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Presence-Absence (P-A) Coliform Test.

Method 9222 A, Membrane Filter Technique for Members of the Coliform Group, Introduction.

Method 9222 B, Membrane Filter Technique for Members of the Coliform Group, Standard Total Coliform Membrane Filter Procedure.

Method 9222 C, Membrane Filter Technique for Members of the Coliform Group, Delayed-Incubation Total Coliform Procedure.

Method 9223, Chromogenic Substrate Coliform Test (Proposed).

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995 (referred to as “Standard Methods, 19th ed.”):

Method 7120-B, Gamma Spectrometric Method.

Method 7500-U C, Uranium, Isotopic Method.

Method 4500-Cl D, Chlorine (Residual), Amperometric Titration Method.

Method 4500-Cl E, Chlorine (Residual), Low-Level Amperometric Titration Method.

Method 4500-Cl F, Chlorine (Residual), DPD Ferrous Titrimetric Method.

Method 4500-Cl G, Chlorine (Residual), DPD Colorimetric Method.

Method 4500-Cl H, Chlorine (Residual), Syringaldazine (FACTS) Method.

Method 4500-Cl I, Chlorine (Residual), Iodometric Electrode Technique.

Method 4500-ClO_2 D, Chlorine Dioxide, DPD Method.

Method 4500-ClO_2 E, Chlorine Dioxide, Amperometric Method II.

Method 6251 B, Disinfection Byproducts: Haloacetic Acids and Trichlorophenol, Micro Liquid-Liquid Extraction Gas Chromatographic Method.

Method 5910 B, UV Absorbing Organic Constituents, Ultraviolet Absorption Method.

Supplement to the 19th Edition of Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 1996:

Method 5310 B, TOC, Combustion-Infrared Method.

Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation Method.

Method 5310 D, TOC, Wet-Oxidation Method.

Analytical Technology, Inc. (ATI Orion), 529 Main Street, Boston, MA 02129:

Technical Bulletin 601, “Standard Method of Testing for Nitrate in Drinking Water”, July, 1994, PN 221890-001 (referred to as “Technical Bulletin 601”).

ASTM. American Society for Testing and Materials, 1976 Race Street, Philadelphia, PA 19103 215-299-5585:

ASTM Method D511-93 A and B, “Standard Test Methods for Calcium and Magnesium in Water”, “Test Method A--C~~c~~omplexometric Titration” & “Test Method B--Atomic Absorption Spectrophotometric”, approved 1993.

ASTM Method D515-88 A, “Standard Test Methods for Phosphorus in Water”, “Test Method A--Colorimetric Ascorbic Acid Reduction”, approved August 19, 1988.

ASTM Method D859-88, “Standard Test Method for Silica in Water”, approved August 19, 1988.

ASTM Method D1067-92 B, “Standard Test Methods for Acidity or Alkalinity in Water”, “Test Method B--Electrometric or Color-Change Titration”, approved May 15, 1992.

ASTM Method D1125-91 A, “Standard Test Methods for Electrical Conductivity and Resistivity of Water”, “Test Method A--Field and Routine Laboratory Measurement of Static (Non-Flowing) Samples”, approved June 15, 1991.

ASTM Method D1179-93 B, “Standard Test Methods for Fluoride in Water”, “Test Method B--Ion Selective Electrode”, approved 1993.

ASTM Method D1293-84, “Standard Test Methods for pH of Water”, “Test Method A--Precise Laboratory Measurement” & “Test Method B--Routine or Continuous Measurement”, approved October 26, 1984.

ASTM Method D1688-90 A or C, “Standard Test Methods for Copper in Water”, “Test Method A--Atomic Absorption, Direct” & “Test Method C--Atomic Absorption, Graphite Furnace”, approved March 15, 1990.

ASTM Method D2036-91 A or B, “Standard Test Methods for Cyanide in Water”, “Test Method A--Total Cyanides after

Distillation” & “Test Method B--Cyanides Amenable to Chlorination by Difference”, approved September 15, 1991.

~~ASTM Method D2459-72, “Standard Test Method for Gamma Spectrometry in Water,” approved July 28, 1972, discontinued 1988.~~

ASTM Method D2460-90, “Standard Test Method for Radionuclides of Radium in Water”, approved 1990.

ASTM Method D2907-91, “Standard Test Methods for Microquantities of Uranium in Water by Fluorometry”, “Test Method A--Direct Fluorometric” & “Test Method B—Extraction”, approved June 15, 1991.

ASTM Method D2972-93 B or C, “Standard Test Methods for Arsenic in Water”, “Test Method B--Atomic Absorption, Hydride Generation” & “Test Method C--Atomic Absorption, Graphite Furnace”, approved 1993.

ASTM Method D3223-91, “Standard Test Method for Total Mercury in Water”, approved September 23, 1991.

ASTM Method D3454-91, “Standard Test Method for Radium-226 in Water”, approved 1991.

ASTM Method D3559-90 D, “Standard Test Methods for Lead in Water”, “Test Method D--Atomic Absorption, Graphite Furnace”, approved August 6, 1990.

ASTM Method D3645-93 B, “Standard Test Methods for Beryllium in Water”, “Method B--Atomic Absorption, Graphite Furnace”, approved 1993.

ASTM Method D3649-91, “Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water”, approved 1991.

ASTM Method D3697-92, “Standard Test Method for Antimony in Water”, approved June 15, 1992.

ASTM Method D3859-93 A, “Standard Test Methods for Selenium in Water”, “Method A--Atomic Absorption, Hydride Method”, approved 1993.

ASTM Method D3867-90 A and B, “Standard Test Methods for Nitrite-Nitrate in Water”, “Test Method A--Automated Cadmium

Reduction” & “Test Method B--Manual Cadmium Reduction”, approved January 10, 1990.

ASTM Method D3972-90, “Standard Test Method for Isotopic Uranium in Water by Radiochemistry”, approved 1990.

ASTM Method D4107-91, “Standard Test Method for Tritium in Drinking Water”, approved 1991.

ASTM Method D4327-91, “Standard Test Method for Anions in Water by Ion Chromatography”, approved October 15, 1991.

ASTM Method D4785-88, “Standard Test Method for Low-Level Iodine-131 in Water”, approved 1988.

ASTM Method D5174-91, “Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry”, approved 1991.

ASTM Method D 1253-86, “Standard Test Method for Residual Chlorine in Water~~,~~”, reapproved 1992.

ERDA Health and Safety Laboratory, New York, NY:

HASL Procedure Manual, HASL 300, 1973. See 40 CFR 141.25(b)(2) (~~1998~~1999).

Great Lakes Instruments, Inc., 8855 North 55th Street, Milwaukee, WI 53223:

GLI Method 2, “Turbidity”, Nov. 2, 1992.

Millipore Corporation, Technical Services Department, 80 Ashby Road, Milford, MA 01730 800-654-5476:

Colisure Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia Coli in Drinking Water, February 28, 1994 (referred to as “Colisure Test”).

Millipore Corporation, Waters Chromatography Division, 34 Maple St., Milford, MA 01757 800-252-4752:

Waters Test Method for the Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography, Method B-1011 (referred to as “Waters Method B-1011”).

NCRP. National Council on Radiation Protection, 7910 Woodmont Ave., Bethesda, MD 301-657-2652:

> "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure", NCRP Report Number 22, June 5, 1959.

NSF. National Sanitation Foundation International, 3475 Plymouth Road, PO Box 130140, Ann Arbor, Michigan 48113-0140, 734-769-8010:

> NSF Standard 61, section 9, November 1998.

NTIS. National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161, 703- 487-4600 or 800-553-6847:

> "Interim Radiochemical Methodology for Drinking Water", EPA 600/4-75-008 (revised), March 1976 (referred to as "USEPA Interim Radiochemical Methods"). (Pages 1, 4, 6, 9, 13, 16, 24, 29, 34)
>
> Method 100.1, "Analytical Method for Determination of Asbestos Fibers in Water", EPA-600/4-83-043, September~~,~~ 1983, Doc. No. PB83-260471 (referred to as "USEPA Asbestos Methods-100.1").
>
> Method 100.2, "Determination of Asbestos Structures over 10-mm in Length in Drinking Water", EPA-600/4-83-043, June~~,~~ 1994, Doc. No. PB94-201902 (~~R~~referred to as "USEPA Asbestos Methods-100.2").
>
> "Methods for Chemical Analysis of Water and Wastes", March~~,~~ 1983, Doc. No. PB84-128677 (referred to as "USEPA Inorganic Methods"). (Methods 150.1, 150.2, and 245.2, which formerly appeared in this reference, are available from USEPA EMSL.)
>
> "Methods for the Determination of Metals in Environmental Samples", June~~,~~ 1991, Doc. No. PB91-231498 (referred to as "USEPA Environmental Metals Methods").
>
> "Methods for the Determination of Organic Compounds in Drinking Water", December, 1988, revised July~~,~~ 1991, EPA-600/4-88/039 (referred to as "USEPA Organic Methods"). (For methods 502.2, 505, 507, 508, 508A, 515.1, and 531.1.)
>
> "Methods for the Determination of Organic Compounds in Drinking Water--Supplement I", July~~,~~ 1990, EPA-600-4-90-020 (referred to

as “USEPA Organic Methods”). (For methods 506, 547, 550, 550.1, and 551.)

“Methods for the Determination of Organic Compounds in Drinking Water--Supplement II”, August~~,~~ 1992, EPA-600/R-92-129 (referred to as “USEPA Organic Methods”). (For methods 515.2, 524.2, 548.1, 549.1, 552.1, and 555.)

“Prescribed Procedures for Measurement of Radioactivity in Drinking Water”, EPA 600/4-80-032, August 1980 (referred to as “USEPA Radioactivity Methods”). (Methods 900, 901, 901.1, 902, 903, 903.1, 904, 905, 906, 908, 908.1)

“Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions”, H.L. Krieger and S. Gold, EPA-R4-73-014, May~~,~~ 1973, Doc. No. PB222-154/7BA.

“Radiochemical Analytical Procedures for Analysis of Environmental Samples”, March~~,~~ 1979, Doc. No. EMSL LV 053917 (referred to as “USEPA Radiochemical Analyses”). (Pages 1, 19, 33, 65, 87, 92)

“Radiochemistry Procedures Manual”, EPA-520/5-84-006, December~~,~~ 1987, Doc. No. PB-84-215581 (referred to as “USEPA Radiochemistry Methods”). (Methods 00-01, 00-02, 00-07, H-02, Ra-03, Ra-04, Ra-05, Sr-04)

“Technical Notes on Drinking Water Methods”, EPA-600/R-94-173, October~~,~~ 1994, Doc. No. PB-104766 (referred to as “USEPA Technical Notes”).

BOARD NOTE: USEPA made the following assertion with regard to this reference at 40 CFR 141.23(k)(1) and 141.24(e) and (n)(11) (1995): “This document contains other analytical test procedures and approved analytical methods that remain available for compliance monitoring until July 1, 1996.”

“Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS”, October~~,~~ 1994, EPA-821-B-94-005 (referred to as “Dioxin and Furan Method 1613”).

New Jersey Department of Environment, Division of Environmental Quality, Bureau of Radiation and Inorganic Analytical Services, 9 Ewing Street, Trenton, NJ 08625:

“Determination of Radium 228 in Drinking Water”, August 1990.

New York Department of Health, Radiological Sciences Institute, Center for Laboratories and Research, Empire State Plaza, Albany, NY 12201:

> "Determination of Ra-226 and Ra-228 (Ra-02)", January 1980, Revised June 1982.

Technicon Industrial Systems, Tarrytown, NY 10591:

> "Fluoride in Water and Wastewater", Industrial Method #129-71W, December~~,~~ 1972 (referred to as "Technicon Methods: Method #129-71W"). See 40 CFR 141.23(k)(1), footnote 11 (~~1995~~1999).

> "Fluoride in Water and Wastewater", #380-75WE, February~~,~~ 1976 (referred to as "Technicon Methods: Method #380-75WE"). See 40 CFR 141.23(k)(1), footnote 11 (~~1995~~1999).

United States Department of Energy, available at the Environmental Measurements Laboratory, U.S. Department of Energy, 376 Hudson Street, New York, NY 10014-3621:

> "EML Procedures Manual", 27th Edition, Volume 1, 1990.

United States Environmental Protection Agency, EMSL, Cincinnati, OH 45268 513-569-7586:

> "Interim Radiochemical Methodology for Drinking Water", EPA-600/4-75-008 (referred to as "Radiochemical Methods"). (Revised) March~~,~~ 1976.

> "Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water" (referred to as "USEPA Organic Methods"). (For methods 504.1, 508.1, and 525.2 only.)~~.~~ See NTIS.

> "Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions". See NTIS.

USEPA, Science and Technology Branch, Criteria and Standards Division, Office of Drinking Water, Washington, D.C. 20460:

> "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems using Surface Water Sources", October~~,~~ 1989.

USGS. Books and Open-File Reports Section, United States Geological Survey, Federal Center, Box 25425, Denver, CO 80225-0425:

Methods available upon request by method number from “Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments”, Open File Report 93-125 or Book 5, Chapter A-1, “Methods for Determination of Inorganic Substances in Water and Fluvial Sediments”, ~~3d~~3rd ed., Open-File Report 85-495, 1989, as appropriate (referred to as “USGS Methods”).

I-1030-85

I-1062-85

I-1601-85

I-1700-85

I-2598-85

I-2601-90

I-2700-85

I-3300-85

Methods available upon request by method number from “Methods for Determination of Radioactive Substances in Water and Fluvial Sediments”, Chapter A5 in Book 5 of “Techniques of Water-Resources Investigations of the United States Geological Survey”, 1997.

R-1110-76

R-1111-76

R-1120-76

R-1140-76

R-1141-76

R-1142-76

R-1160-76

R-1171-76

R-1180-76

R-1181-76

R-1182-76

c) The Board incorporates the following federal regulations by reference:

40 CFR 136, Appendix B and C (~~1998~~1999).

40 CFR 141.40(a)(3) Table 1, Lists 1, 2, and 3 (1999).

40 CFR 141.40(a)(4) Table 2 (1999).

40 CFR 141.40(a)(5) Table 3 (1999).

d) This Part incorporates no later amendments or editions.

(Source: Amended at 24 Ill. Reg. ________, effective ________)

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

Section 611.310 Old Maximum Contaminant Levels (MCLs) for Organic Chemicals

The following are the MCLs for organic chemicals. The MCLs for organic chemicals in ~~subsections (a) and (b)~~this Section apply to all CWSs. Compliance with the MCLs in subsections (a) and (b) is calculated pursuant to ~~Section 611.641 et seq.~~Subpart O of this Part. Compliance with the MCL ~~for TTHM~~in subsection (c) is calculated pursuant to Subpart P of this Part.

Contaminant	Level mg/L	Additional State Requirement (*)
a) Chlorinated hydrocarbons		
Aldrin	0.001	*
DDT	0.05	*
Dieldrin	0.001	*
Heptachlor	0.0001	*
Heptachlor epoxide	0.0001	*

BOARD NOTE: Originally derived from 40 CFR 141.12(a)(1994), USEPA removed the last entry in this subsection and marked it reserved at 57 Fed. Reg.

31838 (July 17, 1992). USEPA added another listing of organic MCLs at 40 CFR 141.61 (1994). Heptachlor, heptachlor epoxide, and 2,4-D 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 their federally-derived revised Section 611.311 MCLs imposes more stringent monitoring, reporting, and notice requirements.

b) Chlorophenoxys~~:~~

	2,4-D	0.01	*

BOARD NOTE: Originally derived from 40 CFR 141.12(b) (1994), USEPA removed the last entry in this subsection and marked it reserved at 56 Fed. Reg. 3578 (Jan. 30, 1991). See the preceding Board Note regarding the dual listing of MCLs for 2,4-D.

c)	TTHM	0.10	*

1) The MCL of 0.10 mg/L for TTHM applies to a Subpart B community water system that serves 10,000 or more persons, until December 31, 2001.

2) The MCL of 0.10 mg/L for TTHM applies to community water systems that use only groundwater not under the direct influence of surface water and serve 10,000 or more persons, until December 31, 2003.

3) After December 31, 2003, the MCL for TTHM in this Section is no longer applicable.

BOARD NOTE: Derived~~ in part~~ from 40 CFR 141.12~~(c)~~ (~~1998~~1999). This is an additional State requirement to the extent that it applies to supplies other than CWSs that add a disinfectant at any part of treatment and which provide water to 10,000 or more persons. ~~Also derived from 40 CFR 141.12 (1998).~~ The new MCL for TTHM is listed in Section 611.312.

(Source: Amended at 24 Ill. Reg. ________, effective __________)

SUBPART G: LEAD AND COPPER

Section 611.359 Analytical Methods

Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature shall be conducted using the methods set forth in Section 611.611(a).

a) Analyses for lead and copper performed for the purposes of compliance with this Subpart shall only be conducted by laboratories that have been certified by USEPA or the Agency. To obtain certification to conduct analyses for lead and copper, laboratories must:

1) Analyze performance evaluation samples that include lead and copper provided by USEPA Environmental Monitoring and Support Laboratory or equivalent samples provided by the Agency; and

2) Achieve quantitative acceptance limits as follows:

   A) For lead: ±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: ±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);

   C) Achieve the method detection limits (MDLs) defined in Section 611.350(a) according to the procedures in 35 Ill. Adm. Code 183 and 40 CFR 136, Appendix B: "Definition and Procedure for the Determination of the Method Detection Limit--Revision 1.11" (1999); and

   D) Be currently certified by USEPA or the Agency to perform analyses to the specifications described in subsection (a)(2) of this Section~~below~~.

b) The Agency shall, by a SEP issued pursuant to Section 611.110, allow a supplier to use previously collected monitoring data for the purposes of monitoring under this Subpart if the data were collected and analyzed in accordance with the requirements of this Subpart.

c) Reporting lead and copper levels.

1) All lead and copper levels greater than or equal to the lead and copper PQL (Pb ≥ 0.005 mg/L and Cu ≥ 0.050 mg/L) must be reported as measured.

2) All lead and copper levels measured less than the PQL 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) of this Section~~above~~ (i.e., reported as 0.0025 mg/L for lead or 0.025 mg/L for copper).

3) All lead and copper levels below the lead and copper MDL (MDL > Pb) must be reported as zero.

BOARD NOTE: Derived from 40 CFR 141.89 (~~ 1994~~1999~~), as amended at 59 Fed. Reg. 62470 (December 5, 1994)~~.

(Source: Amended at 24 Ill. Reg. ________, effective _________)

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.490 Certified Laboratories

a) For the purpose of determining compliance with Subparts L through Q, samples will be considered only if they have been analyzed:

1) By a laboratory certified pursuant to Section 4(o) of the Act; or,

2) By a laboratory certified by ~~U.S. EPA~~USEPA; or,

3) Measurements for alkalinity, calcium, conductivity, disinfectant residual, orthophosphate, silica, turbidity, free chlorine residual, temperature, and pH may be performed under the supervision of a certified operator (35 Ill. Adm. Code 603.103).

b) Nothing in this Part shall be construed to preclude the Agency or any duly designated representative of the Agency from taking samples or from using the results from such samples to determine compliance by a supplier of water with the applicable requirements of this Part.

BOARD NOTE: Derived from 40 CFR 141.28 (~~1994~~1999).

c) The CWS supplier shall have required analyses performed either at an Agency laboratory or a certified laboratory. The Agency may require that some or all of the required samples be submitted to its laboratories.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 24 Ill. Reg. _______, effective _________)

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.526 Analytical Methodology

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

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

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

1) ~~Multiple-Tube~~Total Coliform Fermentation ~~(MTF)~~ Technique, as set forth in Standard Methods, 18th or 19th ed.: Methods 9221 A and B:

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

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

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

2) Total Coliform Membrane Filter ~~(MF)~~ Technique, as set forth in Standard Methods, 18th or 19th ed.: Methods 9222 A, B, and C.

3) Presence-Absence (P-A) Coliform Test, as set forth in: Standard Methods, 18th or 19th ed.: Method 9221 ~~D~~:

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

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

4) ONPG-MUG test: Standard Methods, 18th or 19th ed.: Method 9223. (The ONPG-MUG test is also known as the A~~a~~utoanalysis C~~c~~olilert S~~s~~ystem~~.~~).

5) Colisure Test (Autoanalysis Colilert System)~~from Millipore Corporation, incorporated by reference in Section 611.102~~. (The Colisure Test ~~must be incubated for 28 hours before examining results. If an examination of the results at 28 hours is not convenient, then results may be examined at any time between 28 hours and 48 hours~~may be read after an incubation time of 24 hours.)

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

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

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

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

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

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

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

3) EC medium is described in Standard Methods, 18th ed. and 19th ed.: Method 9221 E.

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

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

1) EC medium supplemented with 50 µg/L of MUG (final concentration). EC medium is as described in subsection (e) of this Section. MUG may be added to EC medium before autoclaving. EC medium supplemented with 50 µg/L MUG is commercially available. At least 10 mL of EC medium supplemented with MUG must be used. The inner inverted fermentation tube may be omitted. The procedure for transferring a total coliform-positive culture to EC medium supplemented with MUG is as in subsection (e) of this Section for transferring a total coliform-positive culture to EC medium. Observe fluorescence with an ultraviolet light (366 nm) in the dark after incubating tube at 44.5±2° C for 24±2 hours; or

2) Nutrient agar supplemented with 100 µg/L MUG (final concentration). Nutrient agar is described in Standard Methods, 18th ed. or 19th ed.: Method 9221 B~~, at pages 9-47 to 9-48~~. This test is used to determine if a total coliform-positive sample, as determined by the MF technique or any other method in which a membrane filter is used, contains E. coli. Transfer the membrane filter containing a total coliform colony or colonies to nutrient agar supplemented with 100 µg/L MUG (final concentration). After incubating the agar plate at 35° Celsius for 4 hours, observe the colony or colonies under ultraviolet light (366-nm) in the dark for fluorescence. If fluorescence is visible, E. coli are present.

3) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in Section 611.Appendix D. (The Autoanalysis ~~Coliert~~Colilert System is a MMO-MUG test.) If the MMO-MUG test is total coliform positive after a 24-hour incubation, test the medium for fluorescence with a 366-nm ultraviolet light (preferably with a 6-watt lamp) in the dark. If fluorescence is observed, the sample is E. coli-positive. If fluorescence is questionable (cannot be definitively read) after 24 hours incubation, incubate the culture for an additional four hours (but not to exceed 28 hours total), and again test the medium for fluorescence. The MMO-MUG test with hepes buffer is the only approved formulation for the detection of E. coli.

4) The Colisure Test (Autoanalysis Colilert System)~~, from Millipore Corporation, incorporated by reference in Section 611.102~~.

5) The membrane filter method with MI agar.

6) The E*Colite® Test.

7) The m-ColiBlue24® Test.

g) As an option to the method set forth in subsection (f)(3) of this Section, a supplier with a total coliform-positive, MUG-negative, MMO-MUG test may further analyze the culture for the presence of E. coli by transferring a 0.1 mL, 28-hour MMO-

MUG culture to EC medium + MUG with a pipet. The formulation and incubation conditions of the EC medium + MUG, and observation of the results, are described in subsection (f)(1) of this Section.

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

BOARD NOTE: Derived from 40 CFR 141.21(f) (~~1995~~1999).

(Source: Amended at 24 Ill. Reg. ________, effective _________)

Section 611.531 Analytical Requirements

The analytical method(s) specified in this Section must be used to demonstrate compliance with the requirements of only 611.Subpart B; they do not apply to analyses performed for the purposes of Sections 611.521 through 611.527 of this Subpart. Measurements for pH, temperature, turbidity, and RDCs must be conducted under the supervision of a certified operator. Measurements for total coliforms, fecal coliforms and HPC must be conducted by a laboratory certified by the Agency to do such analysis. The following procedures must be performed by the following methods, incorporated by reference in Section 611.102:

a) A supplier shall:

1) Conduct ~~analysis~~analyses of pH in accordance with one of the methods listed at Section 611.611; and

2) Conduct analyses of total coliforms, fecal coliforms, heterotrophic bacteria, and turbidity 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:

A) Total Coliforms:

BOARD NOTE: The time from sample collection to initiation of analysis for source (raw) water samples required by Sections 611.521 and 611.532 and 611.Subpart B only must not exceed 8 hours. The supplier is encouraged but not required to hold samples below 10° C during transit.

i) Total coliform fermentation technique: Standard Methods, 18th ed. or 19th ed.: Method 9221 A, B, and C.

BOARD NOTE: Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth if the supplier conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested and this comparison demonstrates that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent. If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added. No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.

ii) Total coliform membrane filter technique: Standard Methods, 18th ed. or 19th ed.: Method 9222 A, B, and C.

iii) ONPG-MUG test (also known as the ~~a~~Autoanalysis ~~c~~Colilert ~~s~~System): Standard Methods, 18th ed. or 19th ed.: Method 9223.

BOARD NOTE: USEPA included the P-A Coliform and Colisure Tests for testing finished water under the coliform rule, under Section 611.526, but did not include them for the purposes of the surface water treatment rule, under this Section, for which quantitation of total coliforms is necessary. For these reasons, USEPA included Standard Methods: Method 9221 C for the surface water treatment rule, but did not include it for the purposes of the total coliform rule, under Section 611.526.

B) Fecal Coliforms:

BOARD NOTE: The time from sample collection to initiation of analysis for source (raw) water samples required by Sections 611.521 and 611.532 and 611.Subpart B only must not exceed 8 hours. The supplier is encouraged but not required to hold samples below 10° C during transit.

i) Fecal coliform procedure: Standard Methods, 18th ed. or 19th ed.: Method 9221 E.

BOARD NOTE: A-1 broth may be held up to three months in a tightly closed screwcap tube at 4° C (39° F).

ii) Fecal Coliform Membrane Filter Procedure: Standard Methods, 18th ed. or 19th ed.: Method 9222 D.

C) Heterotrophic bacteria: Pour plate method: Standard Methods, 18th ed. or 19th ed.: Method 9215 B.

BOARD NOTE: The time from sample collection to initiation of analysis must not exceed 8 hours. The supplier is encouraged but not required to hold samples below 10° C during transit.

D) Turbidity:

i) Nephelometric method: Standard Methods, 18th ed. or 19th ed.: Method 2130 B.

ii) Nephelometric method: USEPA Environmental Inorganic Methods: Method 180.1

ii) GLI Method 2.

E) Temperature: Standard Methods, 18th ed. or 19th ed.: Method 2550.

b) A supplier shall measure residual disinfectant concentrations with one of the following analytical methods from Standard Methods, 18th ed. or 19th ed., and by using analytical test procedures contained in USEPA Technical Notes, incorporated by reference in Section 611.102:

1) Free chlorine:

A) Amperometric Titration: Method 4500-Cl D.

B) DPD Ferrous Titrimetric: Method 4500-Cl F.

C) DPD Colimetric: Method 4500-Cl G.

D) Syringaldazine (FACTS): Method 4500-Cl H.

2) Total chlorine:

A) Amperometric Titration: Method 4500-Cl D.

B) Amperometric Titration (low level measurement): Method 4500-Cl E.

C) DPD Ferrous Titrimetric: Method 4500-Cl F.

D) DPD Colimetric: Method 4500-Cl G.

E) Iodometric Electrode: Method 4500-Cl I.

3) Chlorine dioxide:

A) Amperometric Titration: Method 4500-ClO_2 C or E.

B) DPD Method: Method 4500-ClO_2 D.

4) Ozone: Indigo Method: Method 4500-O_3 B.

5) Alternative test methods: The Agency may grant a SEP pursuant to Section 611.110 that allows a supplier to use alternative chlorine test methods as follows:

A) DPD colorimetric test kits: Residual disinfectant concentrations for free chlorine and combined chlorine may also be measured by using DPD colorimetric test kits.

B) Continuous monitoring for free and total chlorine: 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. Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five days or as otherwise provided by the Agency.

BOARD NOTE: Suppliers may use a five-tube test or a ten-tube test.

BOARD NOTE: Derived from 40 CFR 141.74(a) (~~1995~~1999).

(Source: Amended at 24 Ill. Reg. _______, effective _________)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.611 Inorganic Analysis

Analytical methods are from documents incorporated by reference in Section 611.102. These are mostly referenced by a short name defined by Section 611.102(a). Other abbreviations are defined in Section 611.101.

a) Analysis for the following contaminants must be conducted using the following methods or an alternative approved pursuant to Section 611.480. Criteria for analyzing arsenic, 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. (This document also contains approved analytical test methods that remain available for compliance monitoring until July 1, 1996. These methods will not be available for use after July 1, 1996.)

1) Antimony:

   A) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

   B) Atomic absorption, hydride technique: ASTM Method D3697-92.

   C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

   D) Atomic absorption, furnace technique: Standard Methods, 18th ed.: Method 3113 B.

2) Arsenic:

   A) Inductively-coupled ~~P~~plasma:

      i) USEPA Environmental Metals Methods: Method 200.7, or

      ii) Standard Methods, 18th ed.: Method 3120 B.

   B) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

   C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

   D) Atomic Absorption, furnace technique:

      i) ASTM Method D2972-93 C, or

      ii) Standard Methods, 18th ed.: Method 3113 B.

   E) Atomic absorption, hydride technique:

      i) ASTM Method D2972-93 B, or

      ii) Standard Methods, 18th ed.: Method 3114 B.

3) Asbestos: Transmission electron microscopy: USEPA Asbestos Methods-100.1 and USEPA Asbestos Methods-100.2.

4) Barium:

A) Inductively-coupled plasma:

  i) USEPA Environmental Metals Methods: Method 200.7, or

  ii) Standard Methods, 18th ed.: Method 3120 B.

B) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, direct aspiration technique: Standard Methods, 18th ed.: Method 3111 D.

D) Atomic absorption, furnace technique: Standard Methods, 18th ed.: Method 3113 B.

5) Beryllium:

A) Inductively-coupled plasma:

  i) USEPA Environmental Metals Methods: Method 200.7, or

  ii) Standard Methods, 18th ed.: Method 3120 B.

B) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique:

  i) ASTM Method D3645-93 B, or

  ii) Standard Methods, 18th ed.: Method 3113 B.

6) Cadmium:

A) Inductively-coupled plasma arc furnace: USEPA Environmental Metals Methods: Method 200.7.

B) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique: Standard Methods, 18th ed.: Method 3113 B.

7) Chromium:

A) Inductively-coupled plasma arc furnace:

i) USEPA Environmental Metals Methods: Method 200.7, or

ii) Standard Methods, 18th ed.: Method 3120 B.

B) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique: Standard Methods, 18th ed.: Method 3113 B.

8) Cyanide:

A) Manual distillation (Standard Methods, 18th ed.: Method 4500-CN^- C), followed by spectrophotometric, amenable:

i) ASTM Method D2036-91 B, or

ii) Standard Methods, 18th ed.: Method 4500-CN^- G.

B) Manual distillation (Standard Methods, 18th ed.: Method 4500-CN^- C), followed by spectrophotometric, manual:

i) ASTM Method D2036-91 A,

ii) Standard Methods, 18th ed.: Method 4500-CN^- E, or

iii) USGS Methods: Method I-3300-85.

C) Manual distillation (Standard Methods, 18th ed.: Method 4500-CN^- C), followed by semiautomated spectrophotometric: USEPA Environmental Inorganic Methods: Method 335.4.

D) Selective electrode: Standard Methods, 18th ed.: Method 4500-CN^- F.

9) Fluoride:

    A) Ion Chromatography:

        i) USEPA Environmental Inorganic Methods: Method 300.0,

        ii) ASTM Method D4327-91, or

        iii) Standard Methods, 18th ed.: Method 4110 B.

    B) Manual distillation, colorimetric SPADNS: Standard Methods, 18th ed.: Method 4500-F^- B and D.

    C) Manual electrode:

        i) ASTM Method D1179-93B, or

        ii) Standard Methods, 18th ed.: Method 4500-F^- C.

    D) Automated electrode: Technicon Methods: Method 380-75WE.

    E) Automated alizarin:

        i) Standard Methods, 18th ed.: Method 4500-F^- E, or

        ii) Technicon Methods: Method 129-71W.

10) Mercury:

    A) Manual cold vapor technique:

        i) USEPA Environmental Metals Methods: Method 245.1,

        ii) ASTM Method D3223-91, or

        iii) Standard Methods, 18th ed.: Method 3112 B.

    B) Automated cold vapor technique: USEPA Inorganic Methods: Method 245.2.

    C) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

11) Nickel:

    A) Inductively-coupled plasma:

i) USEPA Environmental Metals Methods: Method 200.7, or

ii) Standard Methods, 18th ed.: Method 3120 B.

B) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9~~;~~.

D) Atomic absorption, direct aspiration technique: Standard Methods, 18th ed.: Method 3111 B~~;~~.

E) Atomic absorption, furnace technique: Standard Methods, 18th ed.: Method 3113 B~~;~~.

12) Nitrate:

A) Ion chromatography:

i) USEPA Environmental Inorganic Methods: Method 300.0,

ii) ASTM Method D4327-91,

iii) Standard Methods, 18th ed.: Method 4110 B, or

iv) Waters Test Method B-1011, available from Millipore Corporation.

B) Automated cadmium reduction:

i) USEPA Environmental Inorganic Methods: Method 353.2,

ii) ASTM Method D3867-90 A, or

iii) Standard Methods, 18th ed.: Method 4500-NO_3^- F.

C) Ion selective electrode:

i) Standard Methods, 18th ed.: Method 4500-NO_3^- D, or

ii) Technical Bulletin 601.

D) Manual cadmium reduction:

        - i) ASTM Method D3867-90 B, or
        - ii) Standard Methods, 18th ed.: Method 4500-NO_3^- E.

13) Nitrite:

    A) Ion chromatography:

        - i) USEPA Environmental Inorganic Methods: Method 300.0,
        - ii) ASTM Method D4327-91,
        - iii) Standard Methods, 18th ed.: Method 4110 B, or
        - iv) Waters Test Method ~~Method~~ B-1011, available from Millipore Corporation.

    B) Automated cadmium reduction:

        - i) USEPA Environmental Inorganic Methods: Method 353.2,
        - ii) ASTM Method D3867-90 A, or
        - iii) Standard Methods, 18th ed.: Method 4500-NO_3^- F.

    C) Manual cadmium reduction:

        - i) ASTM Method D3867-90 B, or
        - ii) Standard Methods, 18th ed.: Method 4500-NO_3^- E.

    D) Spectrophotometric: Standard Methods, 18th ed.: Method 4500-NO_2^- B.

14) Selenium:

    A) Atomic absorption, hydride:

        - i) ASTM Method D3859-93 A, or
        - ii) Standard Methods, 18th ed.: Method 3114 B.

    B) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique:

i) ASTM Method D3859-93 B, or

ii) Standard Methods, 18th ed.: Method 3113 B.

15) Thallium:

A) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

B) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

16) Lead:

A) Atomic absorption, furnace technique:

i) ASTM Method ~~D3559-90 D~~D3559-95 D, or

ii) Standard Methods, 18th ed.: Method 3113 B.

B) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

17) Copper:

A) Atomic absorption, furnace technique:

i) ASTM Method ~~D1688-90 C~~D1688-95 C, or

ii) Standard Methods, 18th ed.: Method 3113 B.

B) Atomic absorption, direct aspiration:

i) ASTM Method D1688-90 A, or

ii) Standard Methods, 18th ed.: Method 3111 B.

C) Inductively-coupled plasma:

i) USEPA Environmental Metals Methods: Method 200.7, or

ii) Standard Methods, 18th ed.: Method 3120 B.

D) Inductively-coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

E) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

18) pH:

A) Electrometric:

i) USEPA Inorganic Methods: Method 150.1,

ii) ASTM Method D1293-84, or

iii) Standard Methods, 18th ed.: Method 4500-H^+ B.

B) USEPA Inorganic Methods: Method 150.2.

19) Conductivity,~~:~~ Conductance:

A) ASTM Method ~~D1125-91 A~~D1125-95 A, or

B) Standard Methods, 18th ed.: Method 2510 B.

20) Calcium:

A) EDTA titrimetric:

i) ASTM Method D511-93 A, or

ii) Standard Methods, 18th ed.: Method 3500-Ca D.

B) Atomic absorption, direct aspiration:

i) ASTM Method D511-93 B, or

ii) Standard Methods, 18th ed.: Method 3111 B.

C) Inductively-coupled plasma:

i) USEPA Environmental Metals Methods: Method 200.7, or

ii) Standard Methods, 18th ed.: Method 3120 B.

21) Alkalinity:

A) Titrimetric:

i) ASTM Method D1067-92 B, or

ii) Standard Methods, 18th ed.: Method 2320 B.

B) Electrometric titration: USGS Methods: Method I-1030-85.

22) Orthophosphate (unfiltered, without digestion or hydrolysis):

A) Automated colorimetric, ascorbic acid:

i) USEPA Environmental Inorganic Methods: Method 365.1, or

ii) Standard Methods, 18th ed.: Method 4500-P F.

B) Single reagent colorimetric, ascorbic acid:

i) ASTM Method D515-88 A, or

ii) Standard Methods, 18th ed.: Method 4500-P E.

C) Colorimetric, phosphomolybdate: USGS Methods: Method I-1601-85.

D) Colorimetric, phosphomolybdate, automated-segmented flow: USGS Methods: Method I-2601-90.

E) Colorimetric, phosphomolybdate, automated discrete: USGS Methods: Method I-2598-85.

F) Ion Chromatography:

i) USEPA Environmental Inorganic Methods: Method 300.0,

ii) ASTM Method D4327-91, or

iii) Standard Methods, 18th ed.: Method ~~4110~~4110 B.

23) Silica:

A) Colorimetric, molybdate blue: USGS Methods: Method I-1700-85.

B) Colorimetric, molybdate blue, automated-segmented flow: USGS Methods: Method I-2700-85.

C) Colorimetric: ASTM Method ~~D859-88~~D859-95.

D) Molybdosilicate: Standard Methods, 18th ed.: Method 4500-Si D.

E) Heteropoly blue: Standard Methods, 18th ed.: Method 4500-Si E.

F) Automated method for molybdate-reactive silica: Standard Methods, 18th ed.: Method 4500-Si F.

G) Inductively-coupled plasma:

i) USEPA Environmental Metals Methods: Method 200.7, or

ii) Standard Methods, 18th ed.: Method 3120 B.

24) Temperature~~:~~; thermometric: Standard Methods, 18th ed.: Method 2550.

25) Sodium:

A) Inductively-coupled plasma: USEPA Environmental Metals Methods: Method 200.7.

B) Atomic absorption, direct aspiration: Standard Methods, 18th ed.: Method 3111 B.

b) Sample collection for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium pursuant to Sections 611.600 through 611.604 must be conducted using the following sample preservation, container, and maximum holding time procedures:

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 6 months.

2) 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.

3) 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 6 months.

4) 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 6 months.

5) 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 6 months.

6) 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 6 months.

7) Cyanide:

  - A) Preservative: Cool to 4°C. Add sodium hydroxide to pH > 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.

8) 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 1 month.

9) 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.

10) Nickel:

  - 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 6 months.

11) 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 ~~28~~14 days.

12) 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.

13) 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.

14) Selenium:

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 6 months.

15) 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 6 months.

c) Analyses under this Subpart must be conducted by laboratories that received approval from USEPA or the Agency. Laboratories may conduct sample analyses for antimony, beryllium, cyanide, nickel, and thallium under provisional certification granted by the Agency until January 1, 1996. The Agency shall certify laboratories to conduct analyses for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium if the laboratory:

1) Analyzes performance evaluation samples, provided by the Agency pursuant to ~~35 Ill. Adm. Code 183.125(c)~~35 Ill. Adm. Code Part 186, that include those substances at levels not in excess of levels expected in drinking water; and

2) Achieves quantitative results on the analyses within the following acceptance limits:

A) Antimony: ± 30% at greater than or equal to 0.006 mg/L.

B) Asbestos: 2 standard deviations based on study statistics.

C) Barium: ± 15% at greater than or equal to 0.15 mg/L.

D) Beryllium: ± 15% at greater than or equal to 0.001 mg/L.

E) Cadmium: ± 20% at greater than or equal to 0.002 mg/L.

F) Chromium: ± 15% at greater than or equal to 0.01 mg/L.

G) Cyanide: ± 25% at greater than or equal to 0.1 mg/L.

H) Fluoride: ± 10% at 1 to 10 mg/L.

I) Mercury: ± 30% at greater than or equal to 0.0005 mg/L.

J) Nickel: ± 15% at greater than or equal to 0.01 mg/L.

K) Nitrate: ± 10% at greater than or equal to 0.4 mg/L.

L) Nitrite: ± 15% at greater than or equal to 0.4 mg/L.

M) Selenium: ± 20% at greater than or equal to 0.01 mg/L.

N) Thallium: ± 30% at greater than or equal to 0.002 mg/L.

~~BOARD NOTE: Subsection (e) is derived from the table to 40 CFR 141.23(k)(2) (1995) and the discussion at 57 Fed. Reg. 31809 (July 17, 1992). Section 611.609 is derived from 40 CFR 141.23(k) (1995).~~

(Source: Amended at 24 Ill. Reg. _______, effective ________)

Section 611.612 Monitoring Requirements for Old Inorganic MCLs

a) Analyses for the purpose of determining compliance with the old inorganic MCLs of Section 611.300 are required as follows:

1) Analyses for all CWSs utilizing surface water sources must be repeated at yearly intervals.

2) Analyses for all CWSs utilizing only groundwater sources must be repeated at three-year intervals.

3) This subsection (a)(3) corresponds with 40 CFR 141.23(1)(3) (~~1994~~1999), which requires monitoring for the repealed old MCL for nitrate at a frequency specified by the state. The Board has followed the ~~U.S. EPA~~USEPA lead and repealed that old MCL. This statement maintains structural consistency with ~~U.S. EPA~~USEPA rules.

4) This subsection (a)(4) corresponds with 40 CFR 141.23(1)(4) (~~1994~~1999), which authorizes the state to determine compliance and initiate enforcement action. This authority exists through the authorization of the Act, not through federal rules. This statement maintains structural consistency with ~~U.S. EPA~~USEPA rules.

b) If the result of an analysis made under subsection (a) of this Section ~~above~~ indicates that the level of any contaminant listed in Section 611.300 exceeds the old MCL, the supplier shall report to the Agency within 7 days and initiate three additional analyses at the same sampling point within one month.

c) When the average of four analyses made pursuant to subsection (b) of this Section ~~above~~, rounded to the same number of significant figures as the old MCL for the substance in question, exceeds the old MCL, the supplier shall notify the Agency and give notice to the public pursuant to Subpart T of this Part. Monitoring after public notification must be at a frequency designated by the Agency by a SEP granted pursuant to Section 611.110 and must continue until the old MCL has not been exceeded in two successive samples or until a different monitoring schedule becomes effective as a condition to a variance, an adjusted standard, a site specific rule, an enforcement action, or another SEP granted pursuant to Section 611.110.

d) This subsection corresponds with 40 CFR 141.23(o) (~~1994~~1999), which pertains to monitoring for the repealed old MCL for nitrate. The Board has followed the ~~U.S. EPA~~USEPA action and repealed that old MCL. This statement maintains structural consistency with ~~U.S. EPA~~USEPA rules.

e) This subsection corresponds with 40 CFR 141.23(p) (~~1994~~1999), which pertains to the use of existing data up until a date long since expired. The Board did not adopt the original provision in R88-26. This statement maintains structural consistency with ~~U.S. EPA~~USEPA rules.

f) Except for arsenic, for which analyses must be made in accordance with Section 611.611, analyses conducted to determine compliance with the old MCLs of Section 611.300 must be made in accordance with the following methods, incorporated by reference in Section 611.102.

1) Fluoride: The methods specified in Section 611.611(c) shall apply for the purposes of this Section.

2) Iron:

   A) Standard Methods, 18th ed.:

      i) Method 3111 B, or

      ii) Method 3113 B, or

      iii) Method 3120 B.

   B) USEPA~~U.S. EPA~~ Environmental Metals Methods:

      i) Method 200.7, or

      ii) Method 200.9.

3) Manganese:

   A) Standard Methods, 18th ed.:

      i) Method 3111 B,

      ii) Method 3113 B, or

      iii) Method 3120 B.

   B) USEPA~~U.S. EPA~~ Environmental Metals Methods:

      i) Method 200.7,

      ii) Method 200.8, or

      iii) Method 200.9.

4) Zinc:

   A) Standard Methods, 18th ed.:

      i) Method 3111 B, or

      ii) Method 3120 B.

   B) USEPA~~U.S. EPA~~ Environmental Metals Methods:

i) Method 200.7, or

ii) Method 200.8.

BOARD NOTE: The provisions of subsections (a) through (f) of this Section ~~above~~ derive from 40 CFR 141.23(l) through (p) (~~1994~~1999), as amended at 59 Fed. Reg. 62466 (Dec. 5, 1994). USEPA~~U.S. EPA~~ removed and reserved 40 CFR 141.23(q) (formerly 40 CFR 141.23(f)) at 59 Fed. Reg. 62466 (Dec. 5, 1994). Subsection (f)(2) of this Section ~~above~~ relates to a contaminant for which USEPA~~U.S. EPA~~ specifies an MCL, but for which it repealed the analytical method. Subsections (f)(2) through (f)(4) of this Section~~above~~ relate exclusively to additional state requirements. The Board retained subsections (f)(1), (f)(3), and (f)(4) of this Section to set forth methods for the inorganic contaminants for which there is a state-only MCL. The methods specified are those set forth in 40 CFR 143.4(b) (1999)~~, as amended at 59 Fed. Reg. 62471 (Dec. 5, 1994),~~ for secondary MCLs. The predecessor to subsections (a) through (e) of this Section~~above~~ were formerly codified as Section 611.601. The predecessor to subsection (f) of this Section~~above~~ was formerly codified as Section 611.606.

(Source: Amended at 24 Ill. Reg. _______, effective _______)

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.645 Analytical Methods for Organic Chemical Contaminants

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 old organic MCLs under Section 611.641; and for THMs, TTHMs, and TTHM potential shall be conducted using the methods listed in this Section or by equivalent methods as approved by the Agency pursuant to Section 611.480. All methods are from USEPA Organic Methods unless otherwise indicated.

Volatile Organic Chemical Contaminants (VOCs):

Contaminant	Analytical Methods
Benzene	502.2, 524.2
Carbon tetrachloride	502.2, 524.2, 551.1
Chlorobenzene	502.2, 524.2
1,2-Dichlorobenzene	502.2, 524.2
1,4-Dichlorobenzene	502.2, 524.2

1,2-Dichloroethane	502.2, 524.2
cis-Dichloroethylene	502.2, 524.2
trans-Dichloroethylene	502.2, 524.2
Dichloromethane	502.2, 524.2
1,2-Dichloropropane	502.2, 524.2
Ethylbenzene	502.2, 524.2
Styrene	502.2, 524.2
Tetrachloroethylene	502.2, 524.2, 551.1
1,1,1-Trichloroethane	502.2, 524.2, 551.1
Trichloroethylene	502.2, 524.2, 551.1
Toluene	502.2, 524.2
1,2,4-Trichlorobenzene	502.2, 524.2
1,1-Dichloroethylene	502.2, 524.2
1,1,2-Trichloroethane	502.2, 524.2
Vinyl chloride	502.2, 524.2
Xylenes (total)	502.2, 524.2

Synthetic Organic Chemical Contaminants (SOCs):

Contaminant	Analytical Methods
2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD or dioxin)	~~Dioxin and Furan~~ Method 1613
2,4-D	~~515.1,~~ 515.2, 555, 515.1, 515.3, D5317-93
2,4,5-TP (Silvex)	~~515.1,~~ 515.2, 555, 515.1, 515.3, D5317-93
Alachlor	505*, 507, 508.1, 525.2, 551.1
Atrazine	505*, 507, 508.1, 525.2, 551.1
Benzo(a)pyrene	525.2, 550, 550.1
Carbofuran	531.1, ~~Standard Methods, 18th ed.:~~ Method 6610
Chlordane	505, 508, 508.1, 525.2
Dalapon	515.1, 552.1, 552.2, 515.3
Di(2-ethylhexyl)adipate	506, 525.2
Di(2-ethylhexyl)phthalate	506, 525.2
Dibromochloropropane (DBCP)	504.1, 551.1
Dinoseb	515.1, 515.2, 515.3, 555
Diquat	549.1
Endothall	548.1
Endrin	505, 508, 508.1, 525.2, 551.1
Ethylene Dibromide (EDB)	504.1, 551.1

Glyphosate	547, ~~Standard Methods, 18th ed.:~~ Method 6651
Heptachlor	505, 508, 508.1, 525.2, 551.1
Heptachlor Epoxide	505, 508, 508.1, 525.2, 551.1
Hexachlorobenzene	505, 508, 508.1, 525.2, 551.1
Hexachlorocyclopentadiene	505, 508, 508.1, 525.2, 551.1
Lindane	505, 508, 508.1, 525.2, 551.1
Methoxychlor	505, 508, 508.1, 525.2, 551.1
Oxamyl	531.1, ~~Standard Methods, 18th ed.:~~ Method 6610
PCBs (measured for compliance purposes as decchlorobiphenyl)	508A
PCBs (qualitatively identified as Araclors)	505, 508, 508.1, 525.2
Pentachlorophenol	515.1, 515.2, 525.2, 555, 515.3, D5317-93
Picloram	515.1, 515.2, 555, 515.3, D5317-93
Simazine	505*, 507, 508.1, 525.2, 551.2
Toxaphene	505, 508, 525.2, 508.1

Total Trihalomethanes (TTHMs):

Contaminant	Analytical Methods

Total Trihalomethanes (TTHMs), Trihalomethanes (THMs), and Maximum Total Trihalomethane Potential	502.2, 524.2, ~~551~~551.1

State-Only MCLs (for which a method is not listed above):

Contaminant	Analytical Methods
Aldrin	505, 508, 508.1, 525.2
DDT	505, 508
Dieldrin	505, 508, 508.1, 525.2

* denotes that~~,~~ for the particular contaminant, a nitrogen-phosphorus detector should be substituted for the electron capture detector in method 505 (or another approved method should be used) to determine alachlor, atrazine, and simazine if lower detection limits are required.

BOARD NOTE: Derived from 40 CFR 141.24(e) (~~1995~~1999).

(Source: Amended at 24 Ill. Reg. ______, effective _______)

Section 611.646 Phase I, Phase II, and Phase V Volatile Organic Contaminants

Monitoring of the Phase I, Phase II, and Phase V VOCs for the purpose of determining compliance with the MCL must be conducted as follows:

a) Definitions. As used in this Section:

"Detect" and "detection" mean~~s~~ that the contaminant of interest is present at a level greater than or equal to the "detection limit".

"Detection limit" means 0.0005 mg/L.

BOARD NOTE: Derived from 40 CFR 141.24(f)(7), (f)(11), (f)(14)(i), and (f)(20) (~~1994~~1999). This is a "trigger level" for Phase I, Phase II, and Phase V VOCs inasmuch as it prompts further action. The use of the term "detect" in this ~~section~~Section is not intended to include any analytical capability of quantifying lower levels of any contaminant, or the "method detection limit". Note, however~~,~~ that certain language at the end of federal paragraph (f)(20) is capable of meaning that the "method detection limit" is used to derive the "detection limit". The Board has chosen to disregard that language at the end of paragraph (f)(20) in favor of the more direct language of paragraphs (f)(7) and (f)(11).

"Method detection limit", as used in subsections (q) and (t) of this Section~~below~~ means the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

BOARD NOTE: Derived from 40 CFR 136, Appendix B (~~1994~~1999). The method detection limit is determined by the procedure set forth in 40 CFR 136, Appendix B. See subsection (t) of this Section~~below~~.

b) Required sampling. Each supplier shall take a minimum of one sample at each sampling point at the times required in subsection (u) of this Section~~below~~.

c) Sampling points.

1) Sampling points for GWSs. Unless otherwise provided by SEP, a GWS supplier shall 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 SWSs and mixed systems. Unless otherwise provided by SEP, a SWS or mixed system supplier shall 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 shall take each sample at the same sampling point unless the Agency has granted a SEP that designates another location as more representative of each source~~,~~ or 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 shall 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) of this Section~~above~~ derived from 40 CFR 141.24(f)(1) through (f)(3) (~~1994~~1999).

d) Each CWS and NTNCWS supplier shall take four consecutive quarterly samples for each of the Phase I VOCs, excluding vinyl chloride, and Phase II VOCs during each compliance period, beginning in the ~~compliance period starting in the~~ initial compliance period.

e) Reduction to annual monitoring frequency. If the initial monitoring for the Phase I, Phase II, and Phase V VOCs as allowed in subsection (r)(1) of this Section~~below~~ has been completed by December 31, 1992, and the supplier did not detect any of the Phase I VOCs, including vinyl chloride, Phase II, or Phase V VOCs, then the supplier shall take one sample annually beginning in the initial compliance period.

f) GWS reduction to triennial monitoring frequency. After a minimum of three years of annual sampling, GWS suppliers that have not previously detected any of the Phase I VOCs, including vinyl chloride, Phase II, or Phase V VOCs, shall take one sample during each three-year compliance period.

g) A CWS or NTNCWS supplier that has completed the initial round of monitoring required by subsection (d) of this Section~~above~~ and which did not detect any of the Phase I VOCs, including vinyl chloride, Phase II, and Phase V VOCs, may apply to the Agency for a SEP pursuant to Section 611.110 that releases it from the requirements of subsection (e) or (f) of this Section~~above~~. A supplier that serves fewer than 3300 service connections may apply to the Agency for a SEP pursuant to Section 611.110 that releases it from the requirements of subsection (d) of this Section~~above~~ as to 1,2,4-trichlorobenzene.

BOARD NOTE: Derived from 40 CFR 141.24(f)(7) and (f)(10) (~~1994~~1999), and the discussion at 57 Fed. Reg. 31825 (July 17, 1992). Provisions concerning the term of the waiver appear below in subsections (i) and (j) of this Section~~below~~. The definition of "detect", parenthetically added to the federal counterpart paragraph, is in subsection (a) of this Section~~above~~.

h) Vulnerability Assessment. The Agency shall consider the factors of Section 611.110(e) in granting a SEP from the requirements of subsections (d), (e), or (f) of this Section~~above~~ sought pursuant to subsection (g) of this Section~~above~~.

i) A SEP issued to a GWS pursuant to subsection (g) of this Section~~above~~ is for a maximum of six years, except that a SEP as to the subsection (d) of this Section~~above~~ monitoring for 1,2,4-trichlorobenzene shall apply only to the initial round of monitoring. As a condition of a SEP, except as to a SEP from the initial round of subsection (d) of this Section~~above~~ monitoring for 1,2,4-trichlorobenzene, the supplier shall, within 30 months after the beginning of the period for which the waiver was issued, reconfirm its vulnerability assessment required by subsection (h) of this Section~~above~~ and submitted pursuant to subsection (g) of this Section~~above~~, by taking one sample at each sampling point and reapplying for a SEP pursuant to subsection (g) of this Section~~above~~. Based on this application, the Agency shall either:

1) If it determines that the PWS meets the standard of Section 611.610(e), issue a SEP that reconfirms the prior SEP for the remaining three-year compliance period of the six-year maximum term; or~~,~~

2) Issue a new SEP requiring the supplier to sample annually.

BOARD NOTE: This provision does not apply to SWSs and mixed systems.

j) Special considerations for SEPs for SWSs and mixed systems.

1) The Agency must determine that a SWS is not vulnerable before issuing a SEP pursuant to a SWS supplier. A SEP issued to a SWS or mixed system supplier pursuant to subsection (g) of this Section~~above~~ is for a maximum of one compliance period; and

2) The Agency may require, as a condition to a SEP issued to a SWS or mixed supplier, that the supplier take such samples for Phase I, Phase II, and Phase V VOCs at such a frequency as the Agency determines are necessary, based on the vulnerability assessment.

BOARD NOTE: There is a great degree of similarity between 40 CFR 141.24(f)(7), the provision applicable to GWSs, and 40 CFR 141.24(f)(10), the provision for SWSs. The Board has consolidated the common requirements of both paragraphs into subsection (g) of this Section~~above~~. Subsection (j) of this Section~~above~~ represents the elements unique to SWSs and mixed systems, and subsection (i) of this Section~~above~~ relates to GWSs. Although 40 CFR 141.24(f)(7) and (f)(10) are silent as to mixed systems, the Board has included mixed systems with SWSs because this best follows the federal scheme for all other contaminants.

k) If one of the Phase I VOCs, excluding vinyl chloride, Phase II, or Phase V VOCs is detected in any sample, then:

1) The supplier shall monitor quarterly for that contaminant at each sampling point that resulted in a detection.

2) Annual monitoring shall be required.

A) The Agency shall grant a SEP pursuant to Section 611.110 that allows a supplier to reduce the monitoring frequency to annually at a sampling point if it determines that the sampling point is reliably and consistently below the MCL.

B) A request for a SEP must include the following minimal information:

i) For a GWS, two quarterly samples.

ii) For a SWS or mixed system, four quarterly samples.

C) In issuing a SEP, the Agency shall specify the level of the contaminant upon which the "reliably and consistently" determination was based. All SEPs that allow less frequent monitoring based on an Agency "reliably and consistently" determination shall include a condition requiring the supplier to resume quarterly monitoring pursuant to subsection (k)(1) of this Section~~above~~ if it violates the MCL specified by Section 611.311.

3) Suppliers that monitor annually shall monitor during the quarter(s) that previously yielded the highest analytical result.

4) Suppliers that do not detect a contaminant at a sampling point in three consecutive annual samples may apply to the Agency for a SEP pursuant to Section 611.110 that allows it to discontinue monitoring for that contaminant at that point, as specified in subsection (g) of this Section~~above~~.

5) A GWS supplier that has detected one or more of the two-carbon contaminants listed in subsection (k)(5)(A) of this Section~~below~~ shall monitor quarterly for vinyl chloride as described in subsection (k)(5)(B) of this Section~~below~~, subject to the limitation of subsection (k)(5)(C) of this Section~~below~~.

A) Two-carbon contaminants (Phase I or II VOC):

1,2-Dichloroethane (Phase I)
1,1-Dichloroethylene (Phase I)
cis-1,2-Dichloroethylene (Phase II)
trans-1,2-Dichloroethylene (Phase II)
Tetrachloroethylene (Phase II)
1,1,1-Trichloroethylene (Phase I)
Trichloroethylene (Phase I)

B) The supplier shall sample quarterly for vinyl chloride at each sampling point at which it detected one or more of the two-carbon contaminants listed in subsection (k)(5)(A) of this Section~~above~~.

C) The Agency shall grant a SEP pursuant to Section 611.110 that allows the supplier to reduce the monitoring frequency for vinyl chloride at any sampling point to once in each three-year compliance period if it determines that the supplier has not detected vinyl chloride in the first sample required by subsection (k)(5)(B) of this Section~~above~~.

l) Quarterly monitoring following MCL violations.

1) Suppliers that violate an MCL for one of the Phase I VOCs, including vinyl chloride, Phase II, or Phase V VOCs, as determined by subsection (o) of this Section~~below~~, shall monitor quarterly for that contaminant, at the

sampling point where the violation occurred, beginning the next quarter after the violation.

2) Annual monitoring.

A) The Agency shall grant a SEP pursuant to Section 611.110 that allows a supplier to reduce the monitoring frequency to annually if it determines that the sampling point is reliably and consistently below the MCL.

B) A request for a SEP must include the following minimal information: four quarterly samples.

C) In issuing a SEP, the Agency shall specify the level of the contaminant upon which the "reliably and consistently" determination was based. All SEPs that allow less frequent monitoring based on an Agency "reliably and consistently" determination shall include a condition requiring the supplier to resume quarterly monitoring pursuant to subsection (l)(1) of this Section~~above~~ if it violates the MCL specified by Section 611.311.

D) The supplier shall monitor during the quarter(s) that previously yielded the highest analytical result.

m) Confirmation samples. The Agency may issue a SEP pursuant to Section 610.110 to require a supplier to use a confirmation sample for results that it finds dubious for whatever reason. The Agency must state its reasons for issuing the SEP if the SEP is Agency-initiated.

1) If a supplier detects any of the Phase I, Phase II, or Phase V VOCs in a sample, the supplier shall 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 (o) of this Section~~below~~.

3) The Agency shall 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.

n) This subsection corresponds with 40 CFR 141.24(f)(14), 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.

o) Compliance with the MCLs for the Phase I, Phase II, and Phase V VOCs must be determined based on the analytical results obtained at each sampling point.

1) For suppliers that conduct monitoring at a frequency greater than annual, compliance is determined by a running annual average of all samples taken at each sampling point.

A) If the annual average of any sampling point is greater than the MCL, then the supplier is out of compliance.

B) If the initial sample or a subsequent sample would cause the annual average to exceed the MCL, then the supplier is out of compliance immediately.

C) Any samples below the detection limit shall be deemed as zero for purposes of determining the annual average.

2) If monitoring is conducted annually, or less frequently, the supplier is out of compliance if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is taken, the determination of compliance is based on the average of two samples.

3) When the portion of the distribution system that is out of compliance is separable from other parts of the distribution system and has no interconnections, the supplier may issue the public notice required by Subpart T of this Part only to persons served by that portion of the distribution system that is not in compliance.

p) This provision corresponds with 40 CFR 141.24(f)(16) (~~1994~~1999), which USEPA removed and reserved at 59 Fed. Reg. 62468 (Dec. 5, 1994). This statement maintains structural consistency with the federal regulations.

q) Analysis under this Section must only be conducted by laboratories that have received certification by USEPA or the Agency according to the following conditions:

1) To receive certification to conduct analyses for the Phase I VOCs, excluding vinyl chloride, Phase II VOCs, and Phase V VOCs, the laboratory must:

A) Analyze performance evaluation samples that include these substances provided by the Agency pursuant ~~to 35 Ill. Adm. Code 183.125(c)~~35 Ill. Adm. Code Part 186;

B) Achieve the quantitative acceptance limits under subsections (q)(1)(C) and (q)(1)(D) of this Section~~below~~ for at least 80 percent of the Phase I VOCs, excluding vinyl chloride, Phase II VOCs, except vinyl chloride, or Phase V VOCs;

C) Achieve quantitative results on the analyses performed under subsection (q)(1)(A) of this Section~~above~~ that are within ± 20 percent of the actual amount of the substances in the performance evaluation sample when the actual amount is greater than or equal to 0.010 mg/L;

D) Achieve quantitative results on the analyses performed under subsection (q)(1)(A) of this Section~~above~~ that are within ± 40 percent of the actual amount of the substances in the performance evaluation sample when the actual amount is less than 0.010 mg/L; and

E) Achieve a method detection limit of 0.0005 mg/L, according to the procedures in 40 CFR 136, appendix B, incorporated by reference in Section 611.102.

2) To receive certification to conduct analyses for vinyl chloride the laboratory must:

A) Analyze performance evaluation samples provided by the Agency pursuant to ~~35 Ill. Adm. Code 183.125(c)~~35 Ill. Adm. Code Part 186;

B) Achieve quantitative results on the analyses performed under subsection (q)(2)(A) of this Section~~above~~ that are within ± 40 percent of the actual amount of vinyl chloride in the performance evaluation sample;

C) Achieve a method detection limit of 0.0005 mg/L, according to the procedures in 40 CFR 136, appendix B, incorporated by reference in Section 611.102; and

D) Obtain certification pursuant to subsection (q)(1) of this Section~~above~~ for Phase I VOCs, excluding vinyl chloride, Phase II VOCs, and Phase V VOCs.

r) Use of existing data.

1) The Agency shall allow the use of data collected after January 1, 1988 but prior to the effective date of this Section, pursuant to Agency sample request letters, if it determines that the data are generally consistent with the requirements of this Section.

2) The Agency shall grant a SEP pursuant to Section 611.110 that allows a supplier to monitor annually beginning in the initial compliance period if it determines that the supplier did not detect any Phase I, Phase II, or Phase V

VOCs using existing data allowed pursuant to subsection (r)(1) of this Section~~above~~.

s) The Agency shall, by SEP, increase the number of sampling points or the frequency of monitoring if it determines that it is necessary to detect variations within the PWS.

t) Each laboratory certified for the analysis of Phase I, Phase II, or Phase V VOCs pursuant to subsection (q)(1) or (q)(2) of this Section~~above~~ shall:

1) Determine the method detection limit (MDL), as defined in 40 CFR 136, Appendix B, incorporated by reference in Section 611.102, at which it is capable of detecting the Phase I, Phase II, and Phase V VOCs; and,

2) Achieve an MDL for each Phase I, Phase II, and Phase V VOC that is less than or equal to 0.0005 mg/L.

u) Each supplier shall monitor, within each compliance period, at the time designated by the Agency by SEP pursuant to Section 611.110.

BOARD NOTE: Derived from 40 CFR 141.24(f) (~~1994~~1999).

(Source: Amended at 24 Ill. Reg. _______, effective _________)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 24th day of August 2000 by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board