ILLINOIS POLLUTION CONTROL BOARD
July 14, 1993

IN THE MATTER OF:	)	
	)	R93-1
SAFE DRINKING WATER ACT	)	(Identical in Substance Rules)
UPDATE, PHASE V RULES	)	
(7/1/92 - 12/31/92)	)	

Adopted Rule. Final Order.

ORDER OF THE BOARD (by J. Anderson):

Pursuant to Sections 17.5 of the Environmental Protection Act (Act), the Board is amending the Safe Drinking Water Act (SDWA) regulations.

Section 17.5 provides for quick adoption of regulations that are "identical in substance" to federal regulations and that Title VII of the Act and Section 5 of the Administrative Procedure Act (APA) shall not apply. Because this rulemaking is not subject to Section 5 of the APA, it is not subject to first notice or to second notice review by the Joint Committee on Administrative Rules (JCAR). The federal SDWA regulations are found at 40 CFR 141 and 142. This rulemaking updates SDWA rules to correspond with major federal amendments more fully outlined in the accompanying opinion.

This order is supported by an opinion adopted on the same day. The complete text of the rules follows.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, do hereby certify that the above order was adopted by the Board on the first day of July, 1992, by a vote of 7-0.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

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

PART 604
FINISHED WATER AND RAW WATER QUALITY AND QUANTITY (REPEALED)

~~SUBPART A: BACTERIOLOGICAL QUALITY~~

~~Section~~
~~604.101 Standard Sample~~
~~604.102 Total Coliform Limits~~
~~604.103 Total Coliform Check-Samples~~
~~604.104 Bacterial Plate Count Sample~~
~~604.105 Bacterial Plate Count Limits~~

~~SUBPART B: CHEMICAL AND PHYSICAL QUALITY~~

~~Section~~
~~604.201 Finished Water Quality (Repealed)~~
~~604.202 Contaminants and Maximum Allowable Concentrations (Repealed)~~
~~604.203 Exceptions to Maximum Allowable Concentrations (Repealed)~~
~~604.204 Action Pursuant to Exceedance of Maximum Allowable Concentration (Repealed)~~

~~SUBPART C: RADIOLOGICAL QUALITY~~

~~Section~~
~~604.301 Radium-226, -228, and Gross Alpha Particle Activity (Repealed)~~
~~604.302 Man-Made Radioactivity (Repealed)~~
~~604.303 Determining Maximum Allowable Concentrations (Repealed)~~

~~SUBPART D: CHLORINATION AND FLUORIDATION~~

~~Section~~
~~604.401 Chlorination Requirement~~
~~604.402 Chlorination Exemption Requirements (Repealed)~~
~~604.403 Conditions for Obtaining a Written Chlorination Exemption (Repealed)~~
~~604.404 Loss of Chlorination Exemption (Repealed)~~
~~604.405 Fluoridation Requirement (Repealed)~~

~~SUBPART E: RAW WATER~~

~~Section~~
~~604.501 Raw Water Quality (Repealed)~~
~~604.502 Raw Water Quantity (Repealed)~~

~~APPENDIX A References to Former Rules~~

~~AUTHORITY: Implementing Section 17 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat., 1987,~~

~~ch. 111 1/2, pars. 1017 and 1027).~~

SOURCE: ~~Filed with Secretary of State January 1, 1978; amended at 2 Ill. Reg. 36, p. 72, effective August 29, 1978; amended at 3 Ill. Reg. 13, p. 236, effective March 30, 1979; amended and codified at 6 Ill. Reg. 11497, effective September 14, 1982; amended at 6 Ill. Reg. 14344, effective November 3, 1982; amended in R84-12 at 14 Ill. Reg. 689, effective January 2, 1990; amended in R88-26 at 14 Ill. Reg. 16435, effective September 20, 1990~~Repealed in R93-1 at 17 Ill. Reg. __________, effective ____________________.

~~SUBPART A: BACTERIOLOGICAL QUALITY~~

~~Section 604.101 Standard Sample~~

~~This Section applies until the effective date for the filtration and disinfection requirements of 35 Ill. Adm. Code 611.Subpart B as applicable to each supply.~~

~~a) For the membrane filter technique, not less than 100 milliliters.~~

~~b) For the fermentation tube method, five standard portions of either ten milliliters or 100 milliliters.~~

~~(Source: Amended at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.102 Total Coliform Limits~~

~~This Section applies until the effective date for the filtration and disinfection requirements of 35 Ill. Adm. Code 611, Subpart B as applicable to each supply. The number of organisms of the coliform group present in potable water, as indicated by representative samples examined, shall not exceed the following limits:~~

~~a) When the membrane filter technique is used, arithmetic mean coliform density of all standard samples examined per month shall not exceed one per 100 milliliters. Coliform colonies per standard sample shall not exceed four per 100 milliliters in:~~

~~1) more than one standard sample when less than~~

~~twenty are examined per month; or~~

~~2) more than five percent of the standard samples when twenty or more are examined per month.~~

~~b) When ten-milliliter standard portions are examined by the fermentation tube method, not more than ten percent in any month shall show the presence of the coliform group. The presence of the coliform group in three or more ten-milliliter portions of a standard sample shall not be allowable if this occurs in:~~

~~1) more than one sample per month when less than twenty are examined per month; or~~

~~2) more than five percent of the samples when twenty or more are examined per month.~~

~~c) When 100-milliliter standard portions are examined by the fermentation tube method, not more than sixty percent in any month shall show the presence of the coliform group. The presence of the coliform group in five of the 100-milliliter portions of a standard sample shall not be allowable if this occurs in:~~

~~1) more than one sample per month when less than five are examined per month; or~~

~~2) more than twenty percent of the samples when five or more are examined per month.~~

~~(Source: Amended at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.103 Total Coliform Check-Samples~~

~~This Section applies until the effective date for the filtration and disinfection requirements of 35 Ill. Adm. Code 611.Subpart B as applicable to each supply.~~

~~a) When coliform densities exceed the limit established in Section 604.102, they may indicate a breakdown in the protective barriers and shall be cause for special follow-up action to locate and eliminate the cause of contamination.~~

~~b) Check-samples may be taken at the discretion of the Environmental Protection Agency (Agency) under the following conditions:~~

~~1) When coliform colonies in a single standard~~

~~sample exceed four per 100 milliliters, as measured by the membrane filter technique, daily samples shall be promptly collected and examined from the same sampling point until the results obtained from at least two consecutive samples show less than one coliform per 100 milliliters.~~

~~2) When organisms of the coliform group occur in three or more of the ten-milliliter portions of a single standard sample (fermentation tube method), daily samples shall be promptly collected and examined from the same sampling point until the results obtained from at least two consecutive samples show no positive results.~~

~~3) When organisms of the coliform group occur in all five of the 100-milliliter portions of a single standard sample (fermentation tube method), daily samples shall be promptly collected and examined from the same sampling point until the results obtained from at least two consecutive samples show no positive tubes.~~

~~c) The sampling point required to be check-sampled may not be eliminated from future collections based on a history of questionable water quality. These check samples shall not be included in the total number of samples examined per month, nor shall the check samples be used as a basis for determining compliance with Section 604.103(b).~~

~~(Source: Amended at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.104 Bacterial Plate Count Sample~~

~~This Section applies until the effective date for the filtration and disinfection requirements of 35 Ill. Adm. Code 611.Subpart B as applicable to each supply. When bacterial plate counts are considered by the Agency to be necessary, the sample for the bacterial plate count using Standard Plate-Count Agar (35 C, 48 hours) shall consist of two portions of one milliliter and two portions of one-tenth milliliter.~~

~~(Source: Amended at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.105 Bacterial Plate Count Limits~~

~~This Section applies until the effective date for the~~

~~filtration and disinfection requirements of 35 Ill. Adm. Code 611.Subpart B as applicable to each supply.~~

~~a) The maximum number for the bacterial plate count in the water distributed to the consumer is 500 organisms per one milliliter, based on arithmetic average of all samples examined in a calendar month. In determining compliance, these data shall be reported to two significant figures.~~

~~b) When the average bacterial plate count is found to exceed 500 organisms per one milliliter, either in portions of the distribution network or in finished water reservoir storage, the Agency shall determine if these bacterial counts require further action to be taken to protect the water consumers. Upon such findings, prompt attention shall be directed by the owner toward finding the cause and taking appropriate action for correction.~~

~~(Source: Amended at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~SUBPART B: CHEMICAL AND PHYSICAL QUALITY~~

~~Section 604.201 Finished Water Quality (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.202 Contaminants and Maximum Allowable Concentrations (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.203 Exceptions to Maximum Allowable Concentrations (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.204 Action Pursuant to Exceedance of Maximum Allowable Concentration (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~SUBPART C: RADIOLOGICAL QUALITY~~

~~Section 604.301 Radium - 266, -228, and Gross Alpha Particle Activity (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.302 Man-Made Radioactivity (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.303 Determining Maximum Allowable Concentrations (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~SUBPART D: CHLORINATION AND FLUORIDATION~~

~~Section 604.401 Chlorination Requirement~~

~~This Section applies until the effective date for the filtration and disinfection requirements of 35 Ill. Adm. Code 611.Subpart B as applicable to each supply. All supplies, except those community water supplies exempted pursuant to Section 17(b) of the Environmental Protection Act (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 1017(b) shall chlorinate the water before it enters the distribution system.~~

~~a) All supplies which are required to chlorinate shall maintain residuals of free or combined chlorine at levels sufficient to provide adequate protection.~~

~~b) The Agency may set levels and promulgate procedures for chlorination.~~

~~c) Those supplies having hand-pumped wells and no distribution system are exempted from the requirements of this subpart.~~

~~(Source: Amended at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.402 Chlorination Exemption Requirements (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.403 Conditions for Obtaining a Written Chlorination Exemption (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.404 Loss of Chlorination Exemption (Repealed)~~

~~(Source:Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.405 Fluoridation Requirement (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~SUBPART E: RAW WATER~~

~~Section 604.501 Raw Water Quality (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.502 Raw Water Quantity (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16435, effective September 20, 1990)~~

~~Section 604.APPENDIX A References to Former Rules~~

~~(Source: Repealed at 14 Ill. Reg. September 20, 1990)~~

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

PART 605
SAMPLING AND MONITORING (REPEALED)

~~Section~~

~~605.101 Frequency of Bacteriological Sampling~~
~~605.102 Minimum Allowable Monthly Samples for Bacteriological Analysis~~
~~605.103 Frequency of Chemical Analysis Sampling (Repealed)~~
~~605.104 Frequency of Trihalomethane Analysis Sampling (Repealed)~~
~~605.105 Monitoring Requirements for Radium-226, -228 and Gross Alpha particle Activity (Repealed)~~
~~605.106 Monitoring Frequency for Radium-226, -228 and Gross Alpha Particle Activity (Repealed)~~
~~605.107 Monitoring Requirements for Man-Made Radioactivity (Repealed)~~
~~605.108 Monitoring Frequency for Man-Made Radioactivity (Repealed)~~
~~605.109 Surface Water Supplies Additional Monitoring Requirements~~
~~605.110 Modification of Monitoring Requirements (Repealed)~~
~~605.Appendix A References to Former Rules (Repealed)~~

~~AUTHORITY: Implementing Section 17 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1987, ch. 111½, pars. 1017 and 1027 [415 ILCS 5/17 and 27]).~~

SOURCE: ~~Filed with Secretary of State January 1, 1978; amended at 2 Ill. Reg. 36, p. 72, effective August 29, 1978; amended and codified at 6 Ill. Reg. 11497, effective September 14, 1982; amended at 6 Ill. Reg. 14344, effective November 3, 1982; amended in R84-12 at 14 Ill. Reg. 695, effective January 2, 1990; amended at 14 Ill. Reg. 16642, effective September 20, 1990~~Repealed in R93-1 at 17 Ill. Reg. __________, effective ______________________________.

~~Section 605.101 Frequency of Bacteriological Sampling~~

~~This Section applies until the effective date for the filtration and disinfection requirements of 35 Ill. Adm. Code 611.Subpart B as applicable to each supply.~~

~~a) Representative samples of the finished water from~~

~~the distribution system are to be submitted monthly by each supply owner, official custodian, or his authorized personnel to a certified laboratory for bacteriological analysis.~~

~~1) The minimum number of samples to be submitted monthly is dependent upon the population served as shown in Section 605.102.~~

~~2) A greater number of samples may be required by the Environmental Protection Agency (Agency) to be analyzed each month.~~

~~b) The owner, official custodian, or authorized personnel of any community water supply which is exempt from chlorination pursuant to 35 Ill. Adm. Code 604.403 shall submit samples to a certified laboratory for bacteriological analysis at least twice a month. Each submission shall consist of the minimum number of samples shown in Section 605.102 plus raw water samples of a sufficient number to assure that each active well is sampled at least monthly.~~

~~c) It shall be the responsibility of the supply to have the analyses performed either at its own certified laboratory or at any other certified laboratory. The Agency may require that some or all of the monthly samples be submitted to its laboratories.~~

~~(Source: Amended at 14 Ill. Reg. 16642, effective September 20, 1990)~~

~~Section 605.102 Minimum Allowable Monthly Samples for Bacteriological Analysis~~

~~This Section applies until the effective date for the filtration and disinfection requirements of 35 Ill. Adm. Code 611.Subpart B as applicable to each supply.~~

~~Population Served~~	~~Minimum number of Samples Pper Month~~
~~25 to 100~~	~~1~~
~~101 to 2,500~~	~~2~~
~~2,501 to 3,300~~	~~3~~
~~3,301 to 4,100~~	~~4~~
~~4,101 to 4,900~~	~~5~~
~~4,901 to 5,800~~	~~6~~
~~5,801 to 6,700~~	~~7~~
~~6,701 to 7,600~~	~~8~~
~~7,601 to 8,500~~	~~9~~

~~8,501 to 9,400~~	~~10~~
~~9,401 to 10,300~~	~~11~~
~~10,301 to 11,100~~	~~12~~
~~11,101 to 12,000~~	~~13~~
~~12,001 to 12,900~~	~~14~~
~~12,901 to 13,700~~	~~15~~
~~13,701 to 14,600~~	~~16~~
~~14,601 to 15,500~~	~~17~~
~~15,501 to 16,300~~	~~18~~
~~16,301 to 17,200~~	~~19~~
~~17,201 to 18,100~~	~~20~~
~~18,101 to 18,900~~	~~21~~
~~18,901 to 19,800~~	~~22~~
~~19,801 to 20,700~~	~~23~~
~~20,701 to 21,500~~	~~24~~
~~21,501 to 22,300~~	~~25~~
~~22,301 to 23,200~~	~~26~~
~~23,201 to 24,000~~	~~27~~
~~24,001 to 24,900~~	~~28~~
~~24,901 to 25,000~~	~~29~~
~~25,001 to 28,000~~	~~30~~
~~28,001 to 33,000~~	~~35~~
~~33,001 to 37,000~~	~~40~~
~~37,001 to 41,000~~	~~45~~
~~41,001 to 46,000~~	~~50~~
~~46,001 to 50,000~~	~~55~~
~~50,001 to 54,000~~	~~60~~
~~54,001 to 59,000~~	~~65~~
~~59,001 to 64,000~~	~~70~~
~~64,001 to 70,000~~	~~75~~
~~70,001 to 76,000~~	~~80~~
~~76,001 to 83,000~~	~~85~~
~~83,001 to 90,000~~	~~90~~
~~90,001 to 96,000~~	~~95~~
~~96,001 to 111,000~~	~~100~~
~~111,001 to 130,000~~	~~110~~
~~130,001 to 160,000~~	~~120~~
~~160,001 to 190,000~~	~~130~~
~~190,001 to 220,000~~	~~140~~
~~220,001 to 250,000~~	~~150~~
~~250,001 to 290,000~~	~~160~~
~~290,001 to 320,000~~	~~170~~
~~320,001 to 360,000~~	~~180~~
~~360,001 to 410,000~~	~~190~~
~~410,001 to 450,000~~	~~200~~
~~450,001 to 500,000~~	~~210~~
~~500,001 to 550,000~~	~~220~~
~~550,001 to 600,000~~	~~230~~
~~600,001 to 660,000~~	~~240~~
~~660,001 to 720,000~~	~~250~~
~~720,001 to 780,000~~	~~260~~
~~780,001 to 840,000~~	~~270~~

~~840,001 to 910,000~~	~~280~~
~~910,001 to 970,000~~	~~290~~
~~970,001 to 1,050,000~~	~~300~~
~~1,050,001 to 1,140,000~~	~~310~~
~~1,140,001 to 1,230,000~~	~~320~~
~~1,230,001 to 1,320,000~~	~~330~~
~~1,320,001 to 1,420,000~~	~~340~~
~~1,420,001 to 1,520,000~~	~~350~~
~~1,520,001 to 1,630,000~~	~~360~~
~~1,630,001 to 1,730,000~~	~~370~~
~~1,730,001 to 1,850,000~~	~~380~~
~~1,850,001 to 1,970,000~~	~~390~~
~~1,970,001 to 2,060,000~~	~~400~~
~~2,060,001 to 2,270,000~~	~~410~~
~~2,270,001 to 2,510,000~~	~~420~~
~~2,510,001 to 2,750,000~~	~~430~~
~~2,750,001 to 3,020,000~~	~~440~~
~~3,020,001 to 3,320,000~~	~~450~~
~~3,320,001 to 3,620,000~~	~~460~~
~~3,620,001 to 3,960,000~~	~~470~~
~~2,960,001 to 4,310,000~~	~~480~~
~~4,310,001 to 4,690,000~~	~~490~~
~~4,690,001 or more~~	~~500~~

~~(Source: Amended at 14 Ill. Reg. 16642, effective September 20, 1990)~~

~~Section 605.103 Frequency of Chemical Analysis Sampling (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16642, effective September 20, 1990)~~

~~Section 605.104 Frequency of Trihalomethane Analysis Sampling (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16442, effective September 20, 1990)~~

~~Section 605.105 Monitoring Requirements for Radium-226, -228 and Gross Alpha particle Activity (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16642, effective September 20, 1990)~~

~~Section 605.106 Monitoring Frequency for Radium-226, -228 and Gross Alpha Particle Activity (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16642, effective September~~

~~20, 1990)~~

~~Section 605.107 Monitoring Requirements for Man-Made Radioactivity (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16642, effective September 20, 1990)~~

~~Section 605.108 Monitoring Frequency for Man-Made Radioactivity (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16642, effective September 20, 1990)~~

~~Section 605.109 Surface Water Supplies Additional Monitoring Requirements~~

~~This Section applies until the effective date for the filtration and disinfection requirements of 35 Ill. Adm. Code 611.Subpart B as applicable to each supply. Owners or official custodians of community water supplies utilizing surface water sources shall ensure:~~

~~a) that finished water samples are taken at arepresentative entry points to the distribution systemat least once per day, and~~

~~b) that a turbidity analysis is performed on each of thesamples immediately. The analysis of the samples shall be done by an individual who has been approved by the Agency as qualified to make this analysis.~~

~~(Source: Amended at 14 Ill. Reg. 16642, effective September 20, 1990)~~

~~Section 605.110 Modification of Monitoring Requirements (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16642, effective September 20, 1990)~~

~~Section 605.Appendix A References to Former Rules (Repealed)~~

~~(Source: Repealed at 14 Ill. Reg. 16642, effective September 20, 1990)~~

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

PART 611
PRIMARY DRINKING WATER STANDARDS

SUBPART A: GENERAL

Section

611.100 Purpose, Scope and Applicability
611.101 Definitions
611.102 Incorporations by Reference
611.103 Severability
611.107 Agency Inspection of PWS Facilities
611.108 Delegation to Local Government
611.109 Enforcement
611.110 Special Exception Permits
611.111 Section 1415 Variances
611.112 Section 1416 Variances
611.113 Alternative Treatment Techniques
611.114 Siting requirements
611.115 Source Water Quantity
611.120 Effective dates
611.121 Maximum Contaminant Levels
611.125 Fluoridation Requirement
611.126 Prohibition on Use of Lead
611.130 Special Requirements for Certain Variances and Adjusted Standards

SUBPART B: FILTRATION AND DISINFECTION

Section

611.201 Requiring a Demonstration
611.202 Procedures for Agency Determinations
611.211 Filtration Required
611.212 Groundwater under Direct Influence of Surface Water
611.213 No Method of HPC Analysis
611.220 General Requirements
611.230 Filtration Effective Dates
611.231 Source Water Quality Conditions
611.232 Site-specific Conditions
611.233 Treatment Technique Violations
611.240 Disinfection
611.241 Unfiltered PWSs
611.242 Filtered PWSs
611.250 Filtration
611.261 Unfiltered PWSs: Reporting and Recordkeeping
611.262 Filtered PWSs: Reporting and Recordkeeping
611.271 Protection during Repair Work
611.272 Disinfection following Repair

SUBPART C: USE OF NON-CENTRALIZED TREATMENT DEVICES

Section

611.280 Point-of-Entry Devices
611.290 Use of Point-of-Use Devices or Bottled Water

SUBPART D: TREATMENT TECHNIQUES

Section

611.295 General Requirements
611.296 Acrylamide and Epichlorohydrin
611.297 Corrosion Control

SUBPART F: MAXIMUM CONTAMINANT LEVELS (MCL's)

Section

611.300 Old MCLs for Inorganic Chemicals
611.301 Revised MCLs for Inorganic Chemicals
611.310 Old MCLs for Organic Chemicals
611.311 Revised MCLs for Organic Contaminants
611.320 Turbidity
611.325 Microbiological Contaminants
611.330 Radium and Gross Alpha Particle Activity
611.331 Beta Particle and Photon Radioactivity

SUBPART G: LEAD AND COPPER

Section

611.350 General Requirements
611.351 Applicability of Corrosion Control
611.352 Corrosion Control Treatment
611.353 Source Water Treatment
611.354 Lead Service Line Replacement
611.355 Public Education and Supplemental Monitoring
611.356 Tap Water Monitoring for Lead and Copper
611.357 Monitoring for Water Quality Parameters
611.358 Monitoring for Lead and Copper in Source Water
611.359 Analytical Methods
611.360 Reporting
611.361 Recordkeeping

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section

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

SUBPART L: MICROBIOLOGICAL
MONITORING AND ANALYTICAL REQUIREMENTS

Section

611.521 Routine Coliform Monitoring
611.522 Repeat Coliform Monitoring
611.523 Invalidation of Total Coliform Samples
611.524 Sanitary Surveys
611.525 Fecal Coliform and E. Coli Testing
611.526 Analytical Methodology

611.527 Response to Violation
611.531 Analytical Requirements
611.532 Unfiltered PWSs
611.533 Filtered PWSs

SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

Section

611.560 Turbidity

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section

611.591 Violation of State MCL
611.592 Frequency of State Monitoring
611.600 Applicability
611.601 Monitoring Frequency
611.602 Asbestos Monitoring Frequency
611.603 Inorganic Monitoring Frequency
611.604 Nitrate Monitoring
611.605 Nitrite Monitoring
611.606 Confirmation Samples
611.607 More Frequent Monitoring and Confirmation Sampling
611.608 Additional Optional Monitoring
611.609 Averaging
611.610 Inorganic Monitoring Times
611.611 Inorganic Analysis
611.612 Monitoring Requirements for Old Inorganic MCLs
611.630 Special Monitoring for Sodium
611.631 Special Monitoring for Inorganic Chemicals

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section

611.640 Definitions
611.641 Old MCLs
611.645 Analytical Methods for Old MCLs
611.646 Phase I, ~~and~~ Phase II, and Phase V Volatile Organic Contaminants
611.647 Sampling for Phase I Volatile Organic Contaminants
611.648 Phase II, Phase IIB, and Phase V Synthetic Organic Contaminants
611.650 Monitoring for 36 Contaminants (Repealed)
611.657 Analytical Methods for 36 Contaminants (Repealed)
611.658 Special Monitoring for Organic Chemicals

SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

Section

611.680 Sampling, Analytical and other Requirements
611.683 Reduced Monitoring Frequency
611.684 Averaging
611.685 Analytical Methods
611.686 Modification to System

SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL

REQUIREMENTS

Section
611.720 Analytical Methods
611.731 Gross Alpha
611.732 Manmade Radioactivity

SUBPART T: REPORTING, PUBLIC NOTIFICATION AND RECORDKEEPING

Section
611.830 Applicability
611.831 Monthly Operating Report
611.832 Notice by Agency
611.833 Cross Connection Reporting
611.840 Reporting
611.851 Reporting MCL and other Violations
611.852 Reporting other Violations
611.853 Notice to New Billing Units
611.854 General Content of Public Notice
611.855 Mandatory Health Effects Language
611.856 Fluoride Notice
611.858 Fluoride Secondary Standard
611.860 Record Maintenance
611.870 List of 36 Contaminants

611.Appendix A Mandatory Health Effects Information
611.Appendix B Percent Inactivation of G. Lamblia Cysts
611.Appendix C Common Names of Organic Chemicals
611.Appendix D Defined Substrate Method for the Simultaneous Detection of Total Coliforms and Eschricia Coli from Drinking Water
611.Appendix E Mandatory Lead Public Education Information
611.Table A Total Coliform Monitoring Frequency
611.Table B Fecal or Total Coliform Density Measurements
611.Table C Frequency of RDC Measurement
611.Table D Number of Lead and Copper Monitoring Sites
611.Table E Lead and Copper Monitoring Start Dates
611.Table F Number of Water Quality Parameter Sampling Sites
611.Table G Summary of Monitoring Requirements for Water Quality Parameters[1]
611.Table Z Federal Effective Dates

AUTHORITY: Implementing Sections 17 and 17.5 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1991, ch. 111½, pars. 1017, 1017.5 and 1027 [415 ILCS 5/17, 5/17.5 and 5/27]).

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, December 1, 1992; amended in R92-3 at 17 Ill. Reg. _________, effective _______________________; amended in R93-1 at 17 Ill. Reg. _________, effective _______________________.

SUBPART A: GENERAL

Section 611.101 Definitions

As used in this Part, the term:

"Act" means the Environmental Protection Act (Ill. Rev. Stat. 1991, ch. 111½, par. 1001 et seq. [415 ILCS 5/1 et seq.])

"Agency" means the Illinois Environmental Protection Agency.
BOARD NOTE: The Department of Public Health ("Public Health") regulates non-community water supplies ("non-CWSs", including non-transient, non-community water supplies ("NTNCWSs") and transient non-community water supplies ("transient non-CWSs")). For the purposes of regulation of supplies by Public Health by reference to this Part, "Agency" shall mean Public Health.

"Ai" means "inactivation ratio".

"Approved source of bottled water", for the purposes of Section 611.130(e)(4), means a source of water and the water therefrom, whether it be from a spring, artesian well, drilled well, municipal water supply, or any other source, that has been inspected and the water sampled, analyzed, and found to be a safe and sanitary quality according to applicable laws and regulations of State and local government agencies having jurisdiction, as evidenced by the presence in the plant of current certificates or notations of approval from each government agency or agencies having jurisdiction over the source, the water it bottles, and the distribution of the water in commerce.
BOARD NOTE: Derived from 40 CFR 142.62(g)(2) and 21 CFR 129.3(a) (1992). The Board cannot compile an exhaustive listing of all federal, state, and local laws to which bottled water and bottling water may be subjected. However, the statutes and regulations of which the Board is aware are the following: the Illinois Food, Drug and Cosmetic Act (410 ILCS 620/1 et seq., formerly Ill. Rev. Stat. 1991 ch. 56½, par. 501 et seq.), the Bottled Water Act (815 ILCS 310/1 et seq., formerly Ill. Rev. Stat. 1991 ch. 111½,

par. 121.101), the DPH Water Well Construction Code (77 Ill. Adm. Code 920), the DPH Water Well Pump Installation Code (77 Ill. Adm. Code 925), the federal bottled water quality standards (21 CFR 103.35), the federal drinking water processing and bottling standards (21 CFR 129), the federal Good Manufacturing Practices for human foods (21 CFR 110), the federal Fair Packaging and Labeling Act (15 U.S.C. §§ 1451 et seq.), and the federal Fair Packaging and Labeling regulations (21 CFR 201).

"Best available technology" or "BAT" means the best technology, treatment techniques or other means that USEPA has found are available for the contaminant in question. BAT is specified in Subpart F of this Part.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Board" means the Illinois Pollution Control Board.

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

"CT" or "CT_{calc}" is the product of "residual disinfectant concentration" (RDC or C) in mg/L determined before or at the first customer, and the corresponding "disinfectant contact time" (T) in minutes. If a supplier applies disinfectants at more than one point prior to the first customer, it shall determine the CT of each disinfectant sequence before or at the first customer to determine the total percent inactivation or "total inactivation ratio". In determining the total inactivation ratio, the supplier shall determine the RDC of each disinfection sequence and corresponding contact time before any subsequent disinfection application point(s). (See "$CT_{99.9}$")
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"$CT_{99.9}$" is the CT value required for 99.9 percent (3-log) inactivation of Giardia lamblia cysts. $CT_{99.9}$ for a variety of disinfectants and conditions appear in Tables 1.1-1.6, 2.1 and 3.1 of Section 611.Appendix B. (See "Inactivation Ratio".)
BOARD NOTE: Derived from the definition of "CT" in 40 CFR 141.2 (1992).

"Coagulation" means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Community Water System" or "CWS" means a public water system (PWS) that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.
BOARD NOTE: Derived from 40 CFR 141.2 (1992). This definition differs slightly from that of Section 3.05 of the Act.

"Compliance cycle" means the nine-year calendar year cycle during which public water systems (PWSs) must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar cycle begins January 1, 1993, and ends December 31, 2001; the second begins January 1, 2002 and ends December 31, 2010; the third begins January 1, 2011, and ends December 31, 2019.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Compliance period" means a three-year calendar year period within a compliance cycle. Each compliance cycle has three three-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993, to December 31, 1995; the second from January 1, 1996, to December 31, 1998; the third from January 1, 1999, to December 31, 2001.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Confluent growth" means a continuous bacterial growth covering the entire filtration area of a membrane filter or a portion thereof, in which bacterial colonies are not discrete.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Contaminant" means any physical, chemical, biological or radiological substance or matter in water.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Conventional filtration treatment" means a series of processes including coagulation, flocculation, sedimentation and filtration resulting in substantial particulate removal.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Diatomaceous earth filtration" means a process resulting in substantial particulate removal in which:

> A precoat cake of diatomaceous earth filter media is deposited on a support membrane

(septum); and

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

BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Disinfectant" means any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines and ozone added to water in any part of the treatment or distribution process, that is intended to kill or inactivate pathogenic microorganisms.

BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

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

Where more than one RDC is measured, T is:

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

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

T in pipelines must be calculated based on "plug flow" by dividing the internal volume of the pipe by the maximum hourly flow rate through that pipe.

T within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.

BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Disinfection" means a process that inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

"Domestic or other non-distribution system plumbing problem" means a coliform contamination problem in a PWS with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Dose equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

"Filtration" means a process for removing particulate matter from water by passage through porous media.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

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

"Gross alpha particle activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Gross beta particle activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Groundwater under the direct influence of surface water" is as determined in Section 611.212.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"GWS" means "groundwater system", a public water supply (PWS) that uses only groundwater sources.
BOARD NOTE: Drawn from 40 CFR 141.23(b)(2) & 141.24(f)(2) note (1992).

"Halogen" means one of the chemical elements chlorine, bromine or iodine.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"HPC" means "heterotrophic plate count", measured as specified in Section 611.531(c).

"Inactivation Ratio" (Ai) means:

$$Ai = CT_{calc}/CT_{99.9}$$

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

$$B = SUM(Ai)$$

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

BOARD NOTE: Derived from the definition of "CT" in 40 CFR 141.2 (1992).

"Initial compliance period" means the three-year compliance period that begins January 1, 1993, except for the MCLs for dichloromethane, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, benzo[a]pyrene, dalapon, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, dinoseb, diquat, endothall, endrin, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram, simazine, 2,3,7,8-TCDD, antimony, beryllium, cyanide, nickel, and thallium as they apply to suppliers whose supplies have fewer than 150 service connections, for which it means the three-year compliance period that begins on January 1, 1996.
BOARD NOTE: Derived from 40 CFR 141.2 (1992), as amended at 57 Fed. Reg. 31838 (July 17, 1992).

"L" means "liter".

"Legionella" means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Man-made beta particle and photon emitters" means all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure, NCRP Report Number 22, incorporated by reference in Section 611.102, except the daughter products of thorium-232, uranium-235 and uranium-238.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Maximum contaminant level" ("MCL") means the maximum permissible level of a contaminant in water that is delivered to any user of a public water system. See Section 611.121
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Maximum Total Trihalomethane Potential" or "MTP" means the maximum concentration of total trihalomethanes (TTHMs) produced in a given water containing a disinfectant residual after 7 days at a temperature of 25° C or above.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"MFL" means millions of fibers per liter larger than 10 micrometers.
BOARD NOTE: Derived from 40 CFR 141.23(a)(4)(i) (1992).

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

"mg/L" means milligrams per liter.

"Mixed system" means a PWS that uses both groundwater and surface water sources.
BOARD NOTE: Drawn from 40 CFR 141.23(b)(2) and 141.24(f)(2) note (1992).

"MUG" means 4-methyl-umbelliferyl-beta-d-glucuronide.

"Near the first service connection" means at one of the 20 percent of all service connections in the entire system that are nearest the public water system (PWS) treatment facility, as measured by water transport time within the distribution system.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

"Non-community water system" or "NCWS" or "non-CWS" means a public water system (PWS) that is not a community water system (CWS).
BOARD NOTE: Derived from the definition of "public water system" in 40 CFR 141.2 (1992).

"Non-transient non-community water system" or "NTNCWS" means a public water system (PWS) that is not a community water system (CWS) and that regularly serves at least 25 of the same persons over 6 months per year.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

"NTU" means "nephelometric turbidity units".

"Old MCL" means one of the inorganic maximum contaminant levels (MCLs), codified at Section 611.300, or organic MCLs, codified at Section 611.310, including any marked as "additional state requirements."
BOARD NOTE: Old MCLs are those derived prior to the implementation of the USEPA "Phase II" regulations. The Section 611.640 definition of this term, which applies only to Subpart O of this Part, differs from this definition in that that definition does not include the Section 611.300 inorganic MCLs.

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

"Performance evaluation sample" means a reference sample provided to a laboratory for the purpose of demonstrating that the laboratory can successfully analyze the sample within limits of performance specified by the Agency; or, for bacteriological laboratories, Public Health; or, for radiological laboratories, the Illinois Department of Nuclear Safety. The true value of the concentration of the reference material is unknown to the laboratory at the time of the analysis.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Person" means an individual, corporation, company, association, partnership, State, unit of local government or federal agency.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

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

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

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

"Picocurie" or "pCi" means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Point of disinfectant application" is the point at which the disinfectant is applied and downstream of which water is not subject to recontamination by surface water runoff.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Point-of-entry treatment device" is a treatment device applied to the drinking water entering a

house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Point-of-use treatment device" is a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Public Health" means the Illinois Department of Public Health.
BOARD NOTE: The Department of Public Health ("Public Health") regulates non-community water supplies ("non-CWSs", including non-transient, non-community water supplies ("NTNCWSs") and transient non-community water supplies ("transient non-CWSs")). For the purposes of regulation of supplies by Public Health by reference to this Part, "Agency" shall mean Public Health.

"Public water system" or "PWS" means a system for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. A PWS is either a community water system (CWS) or a non-community water system (non-CWS). Such term includes:

> Any collection, treatment, storage and distribution facilities under control of the operator of such system and used primarily in connection with such system, and;
>
> Any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system.
> BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

of water.
BOARD NOTE: Derived from 40 CFR 141.23(b)(9), 141.24(f)(11)(ii), and 141.24(f)(11)(iii) (1992).

"Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem (mrem)" is 1/1000 of a rem.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Repeat compliance period" means a compliance period that begins after the initial compliance period.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Representative" means that a sample must reflect the quality of water that is delivered to consumers under conditions when all sources required to supply water under normal conditions are in use and all treatment is properly operating.

"Residual disinfectant concentration" ("RDC" or "C" in CT calculations) means the concentration of disinfectant measured in mg/L in a representative sample of water. For purposes of the requirement of Section 611.241(d) of maintaining a detectable RDC in the distribution system, "RDC" means a residual of free or combined chlorine.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"SDWA" means the Public Health Service Act, as amended by the Safe Drinking Water Act, Pub. L. 93-523, 42 U.S.C. 300f et seq.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Sanitary survey" means an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system (PWS) for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Sedimentation" means a process for removal of solids before filtration by gravity or separation.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"SEP" means special exception permit (Section 611.110).

"Slow sand filtration" means a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 meters per hour

(m/h)) resulting in substantial particulate removal by physical and biological mechanisms.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

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

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

"Standard sample" means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Supplier of water" or "supplier" means any person who owns or operates a public water system (PWS). This term includes the "official custodian".
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Surface water" means all water that is open to the atmosphere and subject to surface runoff.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"SWS" means "surface water system", a public water supply (PWS) that uses only surface water sources, including "groundwater under the direct influence of surface water".
BOARD NOTE: Drawn from 40 CFR 141.23(b)(2) and 141.24(f)(2) note (1992).

"System with a single service connection" means a system that supplies drinking water to consumers via a single service line.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Too numerous to count" means that the total number of bacterial colonies exceeds 200 on a 47-mm

diameter membrane filter used for coliform detection.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Total trihalomethanes" or "TTHM" means the sum of the concentration of trihalomethanes (THMs), in milligrams per liter (mg/L), rounded to two significant figures.
BOARD NOTE: Derived from the definition of "total trihalomethanes" in 40 CFR 141.2 (1992).See the definition of THMs for a listing of the four compounds that USEPA considers TTHMs to comprise.

"Transient, non-community water system" or "transient non-CWS" or "TNCWS" means a public water system (PWS) that is neither a community water system ("CWS") nor a non-transient, noncommunity water system ("NTNCWS").
BOARD NOTE: The federal regulations apply to all "public water systems", which are defined as all systems having at least 15 service connections or regularly serving water to at least 25 persons. See 42 U.S.C. §300f(4). The Act mandates that the Board and the Agency regulate "public water supplies", which it defines as having at least 15 service connections or regularly serving 25 persons daily at least 60 days per year. See Ill. Rev. Stat. 1991 ch. 111½, par. 1003.28 [415 ILCS 5/3.28]. The Department of Public Health regulates transient non-community water systems.

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

"Trihalomethane" or "THM" means one of the family of organic compounds, named as derivatives of methane, in which three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure. The THMs are:

Trichloromethane (chloroform),

Dibromochloromethane,

Bromodichloromethane and

Tribromomethane (bromoform)

BOARD NOTE: Derived from the definitions of "total trihalomethanes" and "trihalomethanes" in 40 CFR 141.2 (1992).

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

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

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

"VOC" or "volatile organic chemical contaminant" refers to that group of contaminants designated as "VOCs", or "volatile organic chemicals" or "volatile organic contaminants", in USEPA regulatory discussions and guidance documents. "VOCs" include benzene, dichloromethane, tetrachloromethane (carbon tetrachloride), trichloroethylene, vinyl chloride, 1,1,1-trichloroethane (methyl chloroform), 1,1-dichloroethylene, 1,2-dichloroethane, cis-1,2-dichloroethylene, ethylbenzene, monochlorobenzene, o-dichlorobenzene, styrene, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, tetrachloroethylene, toluene, trans-1,2-dichloroethylene, xylene, and 1,2-dichloropropane.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Waterborne disease outbreak" means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system (PWS) that is deficient in treatment, as determined by the appropriate local or State agency.
BOARD NOTE: Derived from 40 CFR 141.2 (1992).

"Wellhead Protection Program" means the wellhead protection program for the State of Illinois, approved by USEPA under Section 1428 of the SDWA.
BOARD NOTE: Derived from 40 CFR 141.71(b) (1992). The wellhead protection program will include the "groundwater protection needs assessment" under Section 17.1 of the Act, and regulations to be adopted in 35 Ill. Adm. Code 615 et seq.

(Source: Amended at 17 Ill. Reg. _________, effective ______ _______________)

Section 611.102 Incorporations by Reference

a) Abbreviations. The following abbreviated names are used in this Part to refer to materials incorporated by reference:

"AEPA-1 Polymer" is available from Advanced Polymer Systems.

~~"Asbestos Methods" means "Analytical Method for Determination of Asbestos Fibers in Water", available from NTIS.~~

"ASTM" means American Society for Testing and Materials

"Atomic Absorption-Platform Furnace Method" or "AA-Platform Furnace Method" means "Determination of Trace Elements by Stabilized Temperature Graphite Furnace Atomic Absorption Spectrometry -- Method 200.9"

"Indigo method" is as described in "Standard Methods", 17th Edition, Method 4500-O_3 B.

"Inductively Coupled Plasma-Mass Spectrometry Method" or "ICP-MS Method" means "Determination of Trace Elements in Water and Wastes by Inductively-Coupled Plasma-Mass Spectrometry -- Method 200.8"

"Inductively Coupled Plasma Method 200.7" or "ICP Method 200.7" means "Inductively Coupled Plasma-Atomic Emission Spectrometric Method for Trace Element Analysis in Water and Wastes -- Method 200.7, with appendix". See 40 CFR 136, Appendix C.

"Inductively Coupled Plasma Method 200.7, Rev. 3.2" or "ICP Method 200.7, Rev. 3.2" means "Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry -- Method 200.7, Revision 3.2" See 40 CFR 136, Appendix C.

"Ion Chromatography Method 300.0" means "Determination of Inorganic Ions in Water by Ion Chromatography -- Method 300.0"

"Microbiological Methods" means "Microbiological Methods for Monitoring the Environment, Water and Wastes", available from NTIS.

"MMO-MUG Test" means "minimal medium ortho-nitrophenyl-beta-d-galactopyranoside-4-methyl-umbelliferyl-beta-d-glucuronide test", available from Environetics, Inc.

"NCRP" means "National Council on Radiation Protection".

"NTIS" means "National Technical Information Service".

"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 Waterworks Association.

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

"USEPA Asbestos Methods" means "Analytical Method for Determination of Asbestos Fibers in Water", available from NTIS.

"USEPA Dioxin and Furan Method 1613" means "Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution, available from USEPA-OST.

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

"USEPA Inorganic Methods" means "Methods for Chemical Analysis of Water and Wastes", available from NTIS and ORD Publications.

"USEPA Ion Chromatography Method 300.0" means "Method 300.0, Determination of Inorganic Anions in Water by Ion Chromatography", available from USEPA-EMSL.

"USEPA Organic Methods" means "Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water", September, 1986, available from NTIS and USEPA-EMSL, for the purposes of Section 611.647 only , and "Methods for the Determination of Organic

Compounds in Drinking Water", December, 1988, available from NTIS and ORD Publications, for the purposes of Sections 611.646 and 611.648.

"USGS Methods" means "~~United States Geological Survey~~ Methods for Determination of Inorganic Substances in Water and Fluvial Sediments", available from USGS.

b) The Board incorporates the following publications by reference:

Access Analytical Systems, Inc., See Environetics, Inc.

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

ASTM Method D511-88A and B, "Standard Test Methods for Calcium and Magnesium in Water", approved 1988.

ASTM Method D515-88A, "Standard Test Methods for Phosphorus in Water", approved 1988.

ASTM Method D858-88, "Standard Test Methods for Manganese in Water", approved August 19, 1988.

ASTM Method D859-88, Standard Test Method for Silica in Water", approved 1988.

ASTM Method D1067-88B, "Standard Test Methods for Acidity or Alkalinity in Water", approved 1988~~)~~.

ASTM Method D1125-82B, "Standard Test Methods for Electrical Conductivity and Resistivity of Water", approved October 29, 1982.

ASTM Method D1179-72A or B "Standard Test Methods for Fluoride in Water", approved July 28, 1972, reapproved 1978.

ASTM Method D1293-84B "Standard Test Methods for pH of Water", approved October 26, 1984.

ASTM Method D1428-64, "Standard Test

Methods for Sodium and Potassium in Water and Water-Formed Deposits by Flame Photometry", approved August 31, 1964, reapproved 1977.

ASTM Method D1688-90A or C, "Standard Test Methods for Copper in Water", approved 1990.

~~ASTM Method D1889-88a, "Standard Test Method for Turbidity of Water", approved June 24, 1988.~~

ASTM Method D2036-89A or B, "Standard Test Methods for Cyanide in Water", approved 1989.

ASTM Method D2459-72, "Standard Test Method for Gamma Spectrometry in Water," 1975, reapproved 1981, discontinued 1988.

ASTM Method D2907-83, "Standard Test Methods for Microquantities of Uranium in Water by Fluorometry", approved May 27, 1983.

ASTM Method D2972-88A or B, "Standard Test Methods for Arsenic in Water", approved 1988.

ASTM Method D3223-86, "Standard Test Method for Total Mercury in Water", approved February 28, 1986.

ASTM Method D3559-85D, "Standard Test Methods for Lead in Water", approved 1985.

ASTM Method D3645-84B, "Standard Test Methods for Beryllium in Water, Method B--Atomic Absorption, Graphite Furnace", approved Jan. 27, 1984.

ASTM Method D3697-87, "Standard Test Method for Antimony in Water", approved 1987.

ASTM Method D3859-88, "Standard Test Methods for Selenium in Water", approved June 24, 1988.

ASTM Method D3867-90, "Standard Test Methods for Nitrite-Nitrate in Water", approved January 10, 1990.

ASTM Method 4327-88, "Standard Test Method for Anions in Water by Ion Chromatography", approved 1988.

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.

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, 14th Edition, 1976.

Method 214A, Turbidity, Nephelometric Method -- Nephelometric Turbidity Units (for the purposes of Section 611.560 turbidity only).

Methods 320 and 320A, Sodium, Flame Photometric Method.

~~Method 412D, Cyanide, Colorimetric Method.~~

Standard Methods for the Examination of Water and Wastewater, 16th Edition, 1985.

Method 212, Temperature.

Method 214A, Turbidity, Nephelometric Method -- Nephelometric Turbidity Units (for the purposes of Section 611.631 microbiological only).

Method 303A, Determination of

Antimony, etc. by Direct Aspiration into an Air-Acetylene Flame.

~~Method 303C, Determination of Aluminum, etc., by Direct Aspiration into a Nitrous Oxide-Acetylene Flame.~~

Method 303E, Determination of Arsenic and Selenium by Conversion to Their Hydrides by Sodium Borohydride Reagent and Aspiration into an Atomic Absorption Atomizer.

~~Method 303F, Determination of Mercury by the Cold Vapor Technique.~~

Method 304, Determination of Micro Quantities of Aluminum, etc. by Electrothermal Atomic Absorption Spectrometry.

Method 307A, Arsenic, Atomic Absorption Spectrophotometric Method.

Method 307B, Arsenic, Silver Diethyldithiocarbamate Method.

Method 408C, Chlorine (Residual), Amperometric Titration Method.

Method 408D, Chlorine (Residual), DPD Ferrous Titrimetric Method.

Method 408E, Chlorine (Residual), DPD Colorimetric Method.

Method 408F, Chlorine (Residual), Leuco Crystal Violet Method.

Method 410B, Chlorine Dioxide, Amperometric Method.

Method 410C, Chlorine Dioxide, DPD Method (Tentative).

~~Method 412D, Cyanide, Colorimetric Method.~~

Method 413A, Fluoride, Preliminary Distillation Step.

Method 413B, Fluoride, Electrode

Method.

Method 413C, Fluoride, SPADNS Method.

Method 413E, Fluoride, Complexone Method.

~~Method 418C, Nitrogen (Nitrate), Cadmium Reduction Method.~~

~~Method 418F, Nitrogen (Nitrate), Automated Cadmium Reduction Method.~~

Method 423, pH Value.

Method 907A, Pour Plate Method.

Method 908, Multiple Tube Fermentation Technique for Members of the Coliform Group.

Method 908A, Standard Coliform Multiple-Tube (MPN) Tests.

Method 908B, Application of Tests to Routine Examinations.

Method 908C, Fecal Coliform MPN Procedure.

Method 908D, Estimation of Bacterial Density.

Method 908E, Presence-Absence (P-A) Coliform Test (Tentative).

Method 909, Membrane Filter Technique for Members of the Coliform Group.

Method 909A, Standard Total Coliform Membrane Filter Procedure.

Method 909B, Delayed Incubation Total Coliform Procedure.

Method 909C, Fecal Coliform Membrane Filter Procedure.

Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989.

Method 2320, Alkalinity.

Method 2510, Conductivity.

Method 2550, Temperature.

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, Metals by Electrothermal Atomic Absorption Spectrometry.

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, Metals by Plasma Emission Spectroscopy.

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

Method 4110, Determination of Anions by Ion Chromatography.

Method 4500-CN D, Cyanide, Titrimetric Method.

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-H^+, pH Value.

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, Ozone (Residual), Indigo Colorimetric Method (Proposed).

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.

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

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

Environetics, Inc., 21 Business Park Drive,
Branford, CT 06405 800/321-0207:

MMO-MUG tests: Colilert P/A or Colilert MPN.

ERDA Health and Safety Laboratory, New York, NY:

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

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.

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.

NTIS. National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 (703) 487-4600 or (800) 336-4700:

Analytical Method for Determination of Asbestos Fibers in Water, EPA-600/4-83-043, September, 1983, Doc. No. PB83-260471.

"Methods of ~~for~~ Chemical Analysis of Water and Wastes", ~~J. Kopp and D. McGee, Third Edition,~~ March, 1979. EPA-600/4-79-020, Doc. No. PB84-297686.

"Methods for Chemical Analysis of Water and Wastes", March, 1983, Doc. No. PB84-128677, for all methods referenced except methods 180.1 (turbidity, Section 611.560) and 273.1 and 273.2 (sodium, Section 611.630).

"Methods for Chemical Analysis of Water and Wastes", March, 1979, Doc. No. PB84-128677, only for methods 180.1 (turbidity, Section 611.560) and 273.1 and 273.2 (sodium, Section 611.630).

"Methods for the Determination of Metals in Environmental Samples", 1991, Doc. No. PB91-231498.

"Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water", EPA/600/4-88/039, September, 1986, Doc. No. PB89-220461. (For the purposes of Section 611.647 only.)

"Methods for the Determination of Organic Compounds in Drinking Water", EPA/600/4-88/039, December, 1988, Doc. Nos. ~~PB89-220461~~PB91-231480 and PB91-146027. (For the purposes of Section~~s~~ 611.646 and 611.648 only; including Method 515.1, revision 5.0 and Method 525.1, revision 3.0 (May, 1991).)

"Microbiological Methods for Monitoring the Environment: Water and Wastes", R. Bodner and J. Winter, 1978. EPA-600/8-78-017, Doc. No. PB290-329/LP.

"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.

ORD Publications, CERI, EPA, Cincinnati, OH 45268:

"Methods for Chemical Analysis of Water and Wastes", March, 1983, (EPA-600/4-79-020), for all methods referenced except methods 180.1 (turbidity, Section 611.560) and 273.1 and 273.2 (sodium, Section 611.630).

"Methods for Chemical Analysis of Water and Wastes", March, 1979, (EPA-600/4-79-020), only for methods 180.1 (turbidity, Section 611.560) and 273.1 and 273.2 (sodium, Section 611.630).

"Methods for the Determination of Organic Compounds in Drinking Water", EPA/600/4-88/039, December, 1988, Doc. Nos. PB91-231480 and PB91-146027. (For the purposes of Section 611.646 only.) See NTIS.

Orion Research, Inc., 529 Main St., Boston, MA 02129 800/225-1480:

Orion Guide to Water and Wastewater Analysis, Form WeWWG/5880, p. 5.

Technicon Industrial Systems, Tarrytown, NY 10591:

"Fluoride in Water and Wastewater", Industrial Method #129-71W, December, 1972 See 40 CFR 141.23(f)(10), footnotes 6 and 7.

"Fluoride in Water and Wastewater", #380-75WE, February, 1976. See 40 CFR 141.23(f)(10), footnotes 6 and 7.

United States Environmental Protection Agency, EMSL, EPA, Cincinnati, OH 45268:

"The Analysis of Trihalomethanes in Drinking Waters by the Purge and Trap Method", Method 501.1. See 40 CFR 141, Subpart C, Appendix C.

"The Analysis of Trihalomethanes in Drinking Water by Liquid/Liquid Extraction," Method 501.2. See 40 CFR 141, Subpart C, Appendix C.

"Inductively Coupled Plasma-Atomic Emission Spectrometric Method for Trace Element Analysis in Water and Wastes -- Method 200.7, with Appendix to Method 200.7" entitled, "Inductively Coupled Plasma-Atomic Emission Analysis of Drinking Water" (Appendix 200.7A), March 1987 (EPA/600/4-91/010). See 40 CFR 136, Appendix C.

"Interim Radiochemical Methodology for Drinking Water", EPA-600/4-75-008 (Revised) March, 1976.

"Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water"~~.~~, September, 1986. (For the purposes of Section 611.647 only). See NTIS.

"Methods of for Chemical Analysis of Water and Wastes". See NTIS and ORD Publications.

Microbiological Methods for Monitoring the Environment, Water and Wastes". See NTIS

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

USEPA-OST (United States Environmental Protection Agency, Office of Science and Technology), P.O Box 1407, Arlington, VA 22313:

"Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution".

United States Environmental Protection Agency, 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. United States Geological Survey, 1961 Stout St., Denver, CO 80294 303/844-4169:

Techniques of Water-Resources Investigation of the United States Geological Survey:

Book 5, Chapter A-1, "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments", 3d ed., Open-File Report 85-495, 1989.

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

40 CFR 136, Appendix B and C (1992).

~~40 CFR 141.22(a) (1992).~~

~~40 CFR 141.23(f)(10), footnotes 6 and 7 (1992).~~

~~40 CFR 141.24(e), footnote 6 (1992).~~

~~40 CFR 141.25(b)(2) (1992).~~

40 CFR 141, Subpart C, Appendix C (1992).

~~40 CFR 142, Subpart G (1992).~~

d) This Part incorporates no ~~future~~later amendments or editions.

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

Section 611.110 Special Exception Permits

a) Unless otherwise specified, each Agency determination in this Part is to be made by way of a written permit pursuant to Section 39(a) of the Act. Such permit is titled a "special exception" permit ("SEP").

b) No person shall cause or allow the violation of any condition of a SEP.

c) The supplier may appeal the denial of or the conditions of a SEP to the Board pursuant to Section

40 of the Act.

d) A SEP may be initiated either:

1) By an application filed by the supplier; or

2) By the Agency, when authorized by Board regulations.

BOARD NOTE: The Board does not intend to mandate by any provision of this Part that the Agency exercise its discretion and initiate a SEP pursuant to subsection (d)(2) above. Rather, the Board intends to clarify by this subsection that the Agency may opt to initiate a SEP without receiving a request from the supplier.

e) The Agency shall evaluate a request for a SEP from the monitoring requirements of Section 611.646(e) and (f) (Phase I, Phase II, and Phase V VOCs~~ and Phase II VOCs~~), Section 611.646(d), only as to initial monitoring for 1,2,4-trichlorobenzene, Section 611.648(a) (for Phase II, Phase IIB, and Phase V SOCs) ~~and~~or Section 611.510~~(a)~~ (for unregulated organic contaminants) on the basis of knowledge of previous use (including transport, storage, or disposal) of the contaminant in the watershed or zone of influence of the system, as determined pursuant to 35 Ill. Adm. Code 671:

1) If the Agency determines that there was no prior use of the contaminant, it shall grant the SEP, or

2) If the contaminant was previously used or the previous use was unknown, the Agency shall consider the following factors:

A) Previous analytical results;

B) The proximity of the system to any possible point source of contamination (including spills or leaks at or near a water treatment facility; at manufacturing, distribution, or storage facilities; from hazardous and municipal waste land fills; or from waste handling or treatment facilities) or non-point source of contamination (including the use of pesticides and other land application uses of the contaminant);

C) The environmental persistence and transport of the contaminant;

D) How well the water source is protected against contamination, including whether it is a SWS or a GWS:

i) A GWS must consider well depth, soil type, ~~and~~ well casing integrity, and wellhead protection; and

ii) A SWS must consider watershed protection; and

E) For Phase II, Phase IIB, and Phase V SOCs and unregulated organic contaminants (pursuant to Section 611.631 or 611.648):

i) Elevated nitrate levels at the water source; and

ii) The use of PCBs in equipment used in the production, storage, or distribution of water (including pumps, transformers, etc.); and

F) For Phase I, Phase II, and Phase V VOCs ~~and Phase II VOCs~~ (pursuant to Section 611.646): the number of persons served by the PWS and the proximity of a smaller system to a larger one.

f) If a supplier refuses to provide any necessary additional information requested by the Agency, or if a supplier delivers any necessary information late in the Agency's deliberations on a request, the Agency may deny the requested SEP or grant the SEP with conditions within the time allowed by law.

BOARD NOTE: Subsection (e) above is derived from 40 CFR 141.24(f)(8) and (h)(6) (1992). Subsection (f) above is derived from 40 CFR 141.82(d)(2), and 141.83(b)(2) (1992). USEPA has reserved the discretion, at 40 CFR 142.18 (1992), to review and nullify Agency determinations of the types made pursuant to Sections 611.510, 611.602, 611.603, 611.646, and 611.648 and the discretion, at 40 CFR 141.82(i), 141.83(b)(7), and 142.19 (1992), to establish federal standards for any supplier, superseding any Agency determination made pursuant to Sections 611.352(d). 611.352(f), 611.353(b)(2), and 611.353(b)(4).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

Section 611.130 Special Requirements for Certain Variances and Adjusted Standards

a) Relief from the TTHM MCL.

1) In granting any variance or adjusted standard to a supplier that is a CWS that adds a disinfectant at any part of treatment and which provides water to 10,000 or more persons on a regular basis from the maximum contaminant level for TTHM listed in Section 611.310(c), the Board will require application of the best available technology (BAT) identified at subsection (a)(4) below for that constituent as a condition to the relief, unless the supplier has demonstrated through comprehensive engineering assessments that application of BAT is not technically appropriate and technically feasible for that system, or it would only result in a marginal reduction in TTHM for that supplier.

2) The Board will require the following as a condition for relief from the TTHM MCL where it does not require the application of BAT:

A) That the supplier continue to investigate the following methods as an alternative means of significantly reducing the level of TTHM, according to a definite schedule:

i) introduction of off-line water storage for THM precursor reduction;

ii) aeration for TTHM reduction, where geography and climate allow;

iii) introduction of clarification, where not presently practiced;

iv) use of alternative sources of raw water; and

v) use of ozone as an alternative or supplemental disinfectant or oxidant, and

B) That the supplier report results of that investigation to the Agency.

3) The Agency shall petition the Board to reconsider or modify a variance or adjusted standard, pursuant to 35 Ill. Adm. Code 101.Subpart K, if it determines that an alternative method identified by the supplier pursuant to subsection (a)(2) above is technically feasible and would result in a significant reduction in TTHM.

4) Best available technology for TTHM reduction:

A) use of chloramines as an alternative or supplemental disinfectant,

B) use of chlorine dioxide as an alternative or supplemental disinfectant, or

C) improved existing clarification for THM precursor reduction.

BOARD NOTE: Derived from 40 CFR 142.60 (1992). The restrictions of this subsection do not apply to suppliers regulated for TTHM as an additional state requirement. See the Board Note to Section 611.301(c).

b) Relief from the fluoride MCL.

1) In granting any variance or adjusted standard to a supplier that is a CWS from the maximum contaminant level for fluoride listed in Section 611.301(b), the Board will require application of the best available technology (BAT) identified at subsection (b)(4) below for that constituent as a condition to the relief, unless the supplier has demonstrated through comprehensive engineering assessments that application of BAT is not technically appropriate and technically feasible for that supplier.

2) The Board will require the following as a condition for relief from the fluoride MCL where it does not require the application of BAT:

A) That the supplier continue to investigate the following methods as an alternative means of significantly reducing the level of TTHM, according to a definite schedule:

i) modification of lime softening;

ii) alum coagulation;

iii) electrodialysis;

iv) anion exchange resins;

v) well field management;

vi) use of alternative sources of raw water; and

vii) regionalization, and

B) That the supplier report results of that investigation to the Agency.

3) The Agency shall petition the Board to reconsider or modify a variance or adjusted standard, pursuant to 35 Ill. Adm. Code 101.Subpart K, if it determines that an alternative method identified by the supplier pursuant to subsection (b)(2) above is technically feasible and would result in a significant reduction in fluoride.

4) Best available technology for fluoride reduction:

A) activated alumina absorption centrally applied, and

B) reverse osmosis centrally applied.

BOARD NOTE: Derived from 40 CFR 142.61 (1992).

c) Relief from an inorganic chemical contaminant, VOC, or SOC MCL.

1) In granting to a supplier that is a CWS or NTNCWS any variance or adjusted standard from the maximum contaminant levels for any VOC or SOC, listed in Section 611.311(a) or (c), or for any inorganic chemical contaminant, listed in Section 611.301, the supplier must have first applied the best available technology (BAT) identified at Section 611.311(b) (VOCs and SOCs) or Section 611.301(c) (inorganic chemical contaminants) for that constituent, unless the

supplier has demonstrated through comprehensive engineering assessments that application of BAT would achieve only a minimal and insignificant reduction in the level of contaminant.

BOARD NOTE: USEPA lists BAT for each SOC and VOC at 40 CFR 142.62(a) (1992), as amended at 57 Fed. Reg. 31848 (July 17, 1992), for the purposes of variances and exemptions (adjusted standards). That list is identical to the list at 40 CFR 141.61(b), with three exceptions: the section 142.62 listing adds PTA ("PAT") for alachlor; lists OX for hexachlorobenzene, instead of GAC; and omits PTA for toxaphene. The Board has chosen to use the section 141.61(a) (Section 611.311) BAT listing because we believe USEPA intended consistency and because the preamble at 57 Fed. Reg. 31778-79 indicates that this listing is correct as to alachlor and hexachlorobenzene (although the preamble at 56 Fed. Reg. 3529 (Jan. 30, 1991) indicates that it is wrong as to toxaphene).

2) The Board may require any of the following as a condition for relief from a MCL listed in Section 611.301 or 611.311:

A) That the supplier continue to investigate alternative means of compliance according to a definite schedule, and

B) That the supplier report results of that investigation to the Agency.

3) The Agency shall petition the Board to reconsider or modify a variance or adjusted standard, pursuant to 35 Ill. Adm. Code 101.Subpart K, if it determines that an alternative method identified by the supplier pursuant to subsection (c)(2) above is technically feasible.

BOARD NOTE: Derived from 40 CFR 142.62(a) through (e) (1992).

d) Conditions requiring use of bottled water or point-of-use or point-of-entry devices. In granting any variance or adjusted standard from the maximum contaminant levels for organic and inorganic chemicals or an adjusted standard from the treatment technique for lead and copper, the Board may impose certain conditions requiring the use of bottled water, point-of-entry devices, or point-of-use devices to avoid an unreasonable risk to health, limited as provided in subsections (e) and (f) below.

1) Relief from an MCL. The Board may, when granting any variance or adjusted standard from the MCL requirements of Sections 611.301 and 611.311, impose a condition that requires a supplier to use bottled water, point-of-use devices, point-of-entry devices or other means to avoid an unreasonable risk to health.

2) Relief from corrosion control treatment. The Board may, when granting an adjusted standard from the corrosion control treatment requirements for lead and copper of Sections 611.351 and 611.352, impose a condition that requires a supplier to use bottled water and point-of-use devices or other means, but not point-of-entry devices, to avoid an unreasonable risk to health.

3) Relief from source water treatment or service line replacement. The Board may, when granting an exemption from the source water treatment and lead service line replacement requirements for lead and copper under Sections 611.353 or 611.354, impose a condition that requires a supplier to use point-of-entry devices to avoid an unreasonable risk to health.

BOARD NOTE: Derived from 40 CFR 142.62(f) (1992).

e) Use of bottled water. Suppliers that propose to use or use bottled water as a condition for receiving a variance or an adjusted standard from the requirements of Section 611.301 or Section 611.311, or an adjusted standard from the requirements of Sections 611.351 through 611.354 must meet the requirements of either subsections (e)(1), (e)(2), (e)(3), and (e)(6) or (e)(4), (e)(5) and (e)(6) below:

1) The supplier must develop a monitoring program for Board approval that provides reasonable assurances that the bottled water meets all MCLs of Sections 611.301 and 611.311 and submit a description of this program as part of its petition. The proposed program must describe how the supplier will comply with each

requirement of this subsection.

2) The supplier must monitor representative samples of the bottled water for all contaminants regulated under Sections 611.301 and 611.311 during the first three-month period that it supplies the bottled water to the public, and annually thereafter.

3) The supplier shall annually provide the results of the monitoring program to the Agency.

4) The supplier must receive a certification from the bottled water company as to each of the following:

   A) that the bottled water supplied has been taken from an approved source of bottled water, as such is defined in Section 611.101;

   B) that the approved source of bottled water has conducted monitoring in accordance with 21 CFR 129.80(g)(1) through (3);

   C) and that the bottled water does not exceed any MCLs or quality limits as set out in 21 CFR 103.35, 110, and 129.

5) The supplier shall provide the certification required by subsection (e)(4) above to the Agency during the first quarter after it begins supplying bottled water and annually thereafter.

6) The supplier shall assure the provision of sufficient quantities of bottled water to every affected person supplied by the supplier via door-to-door bottled water delivery.

Derived from 40 CFR 142.62(g) (1992).

f) Use of point-of-entry devices. Before the Board grants any PWS a variance or adjusted standard from any NPDWR that includes a condition requiring the use of a point-of-entry device, the supplier must demonstrate to the Board each of the following:

1) that the supplier will operate and maintain the device;

2) that the device provides health protection equivalent to that provided by central

treatment;

3) that the supplier will maintain the microbiological safety of the water at all times;

4) that the supplier has established standards for performance, conducted a rigorous engineering design review, and field tested the device;

5) that the operation and maintenance of the device will account for any potential for increased concentrations of heterotrophic bacteria resulting through the use of activated carbon, by backwashing, post-contactor disinfection, and heterotrophic plate count monitoring;

6) that buildings connected to the supplier's distribution system have sufficient devices properly installed, maintained, and monitored to assure that all consumers are protected; and

7) that the use of the device will not cause increased corrosion of lead and copper bearing materials located between the device and the tap that could increase contaminant levels at the tap.

BOARD NOTE: Derived from 40 CFR 142.62(h) (1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ _______________)

SUBPART B: FILTRATION AND DISINFECTION

Section 611.240 Disinfection

a) A supplier that uses a surface water source and does not provide filtration treatment shall provide the disinfection treatment specified in Section 611.241 beginning December 30, 1991.

b) A supplier that uses a groundwater source under the influence of surface water and does not provide filtration treatment shall provide disinfection treatment specified in Section 611.241 beginning December 30, 1991, or 18 months after the Agency determines that the groundwater source is under the influence of surface water, whichever is later, unless the Agency has determined that filtration is required.

c) If the Agency determines that filtration is required, the Agency may, by special exception permit, require the supplier to comply with interim disinfection requirements before filtration is installed.

d) A system that uses a surface water source that provides filtration treatment shall provide the disinfection treatment specified in Section 611.242 beginning June 29, 1993, or beginning when filtration is installed, whichever is later.

e) A system that uses a groundwater source under the direct influence of surface water and provides filtration treatment shall provide disinfection treatment as specified in Section 611.242 by June 29, 1993 or beginning when filtration is installed, whichever is later.

f) Failure to meet any requirement of the following Sections after the applicable date specified in this Section is a treatment technique violation.

BOARD NOTE: Derived from 40 CFR 141.72 preamble (19~~89~~2)~~, as amended at 54 Fed. Reg. 27526, June 29, 1989~~.

g) CWS suppliers using groundwater which is not under the direct influence of surface water shall ~~provide disinfection pursuant to Section 611.241 or 611.242~~chlorinate the water before it enters the distribution system, unless the Agency has granted the supplier an exemption pursuant to Section 17(b) of the Act.

1) All GWS supplies that are required to chlorinate pursuant to this Section shall maintain residuals of free or combined chlorine at levels sufficient to provide adequate protection of human health and the ability of the distribution system to continue to deliver potable water that complies with the requirements of this Part.

2) The Agency may establish procedures and levels for chlorination applicable to a GWS using groundwater which is not under the direct influence of surface water by a SEP pursuant to Section 610.110.

3) Those supplies having hand-pumped wells and no

distribution system are exempted from the requirements of this Section.

BOARD NOTE: This is an additional State requirement originally codified at 35 Ill. Adm. Code 604.401.

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

SUBPART F: MAXIMUM CONTAMINANT LEVELS (MCL'S)

Section 611.300 Old MCLs for Inorganic Chemicals

a) The old MCLs listed in subsection (b) below for inorganic chemicals apply only to CWS suppliers. Compliance with old MCLs for inorganic chemicals is calculated pursuant to Section 611.612.

BOARD NOTE: Derived from 40 CFR 141.11(a) (1992).

b) The following are the old MCL's for inorganic chemicals, with the old MCL for cyanide effective only until the revised MCL for cyanide at Section 611.301(a) becomes effective:

Contaminant	Level, mg/L	Additional State Requirement (*)
Arsenic	0.05	
Cyanide	0.2	*
Iron	1.0	*
Manganese	0.15	*
Zinc	5.	*

BOARD NOTE: Derived from 40 CFR 141.11(b) & (c) (1992). This provision, which corresponds with 40 CFR 141.11, was formerly the only listing of MCLs for inorganic parameters. However, USEPA added another listing of inorganic MCLs at 40 CFR 141.62 at 56 Fed. Reg. 3594 (Jan. 30, 1991). Following the changing USEPA codification scheme creates two listings of MCLs: one at this Section and one at Section 611.301. This causes fluoride to appear in both the 40 CFR 141.11(b) and 141.62(b) listings with the same MCL. The Board has deleted the corresponding fluoride MCL from this Section in favor of that which appears at Section 611.301(b). USEPA adopted a MCL for cyanide at 40 CFR 141.62(b)(13), effective January 17, 1994, at 57 Fed. Reg. 31847 (July 17, 1992). That MCL is the same as that at this Section. The Board has rendered the state MCL at this Section ineffective on the date the new federal MCL becomes effective.

c) ~~The secondary old MCL for fluoride is 2.0 mg/L.~~

~~BOARD NOTE: Derived from 40 CFR 141.11(c) (1992).~~This subsection corresponds with 40 CFR 141.11(c), the substance of which the Board has codified in subsection (b) above. This statement maintains structural parity with the federal rules.

d) Nitrate.

1) The Board incorporates by reference 40 CFR 141.11(d) (1992). This incorporation includes no later editions or amendments.

2) Non-CWSs may exceed the MCL for nitrate ~~to the extent authorized by 40 CFR 141.11(d).~~under the following circumstances:

A) The nitrate level must not exceed 20 mg/L,

B) The water must not be available to children under six months of age,

C) There will be continuous posting of the fact that the nitrate level exceeds 10 mg/L together with the public health effects information set forth in paragraph (2) of Section 611.Appendix A,

D) The supplier will annually notify local public health authorities and Public Health of the nitrate levels that exceed 10 mg/L, and

E) No adverse public health effects result.

BOARD NOTE: Derived from 40 CFR 141.11(d) (1992). Public Health regulations may impose a nitrate limitation requirement. Those regulations are at 77 Ill. Adm. Code 900.50.

e) The following supplementary condition applies to the ~~concentration~~MCLs listed in subsection (b) above~~:~~

for ~~I~~iron and manganese:

1) CWS suppliers that serve a population of 1000 or less, or 300 service connections or less, are exempt from the standards for iron and manganese.

2) The Agency may, by special exception permit, allow iron and manganese in excess of the MCL if sequestration tried on an experimental basis proves to be effective. If sequestration is not effective, positive iron or manganese reduction treatment as applicable must be provided. Experimental use of a sequestering agent may be tried only if approved by special exception permit.

   BOARD NOTE: This is an additional State requirement.

(Source: Amended at 17 Ill. Reg. _________, effective ______________________)

Section 611.301 Revised MCLs for Inorganic Chemicals

a) This subsection corresponds with 40 CFR 141.62(a), reserved by USEPA. This statement maintains structural consistency with USEPA rules.

b) The MCLs in the following table apply to CWSs. Except for fluoride, the MCLs also apply to NTNCWSs. The MCLs for nitrate, nitrite and total nitrate and nitrite also apply to transient non-CWSs. The MCLs for antimony, beryllium, cyanide, nickel, and thallium are effective January 17, 1994.

Contaminant	MCL	Units
~~Fluoride~~	~~4.0~~	~~mg/L~~
Antimony	0.006	mg/L
Asbestos	7	MFL
Barium	2	mg/L
Beryllium	0.004	mg/L
Cadmium	0.005	mg/L
Chromium	0.1	mg/L
Cyanide (as free CN^-)	0.2	mg/L
Fluoride	4.0	mg/L
Mercury	0.002	mg/L
Nickel	0.1	mg/L
Nitrate (as N)	10.	mg/L
Nitrite (as N)	1.	mg/L
Total Nitrate and Nitrite	10.	mg/L

(as N)		
Selenium	0.05	mg/L
Thallium	0.002	mg/L

BOARD NOTE: See the definition of "initial compliance period" at Section 611.101. The federal secondary MCL for fluoride is 2.0 mg/L. The federal regulations require public notice when water exceeds this level. See 40 CFR 143.3 and 143.5 (1992).

c) USEPA has identified the following as BAT for achieving compliance with the MCL for the inorganic contaminants identified in subsection (b) above, except for fluoride:

Contaminant	BAT(s)
Antimony	C/F RO
Asbestos	C/F DDF CC
Barium	IX LIME RO ED
Beryllium	AA C/F IX LIME RO
Cadmium	C/F IX LIME RO
Chromium	C/F IX LIME, BAT for Cr(III) only RO
Cyanide	IX RO Cl_2
Mercury	C/F, BAT only if influent Hg concentrations less than or equal

	to (≤) 10 µg/L GAC LIME, BAT only if influent Hg concentrations ≤ 10 µg/L RO, BAT only if influent Hg concentrations ≤ 10 µg/L
Nickel	IX LIME RO
Nitrate	IX RO ED
Nitrite	IX RO
Selenium	AAL C/F, BAT for Se(IV) only LIME RO ED
Thallium	AAL IX

Abbreviations

AAL	Activated alumina
C/F	Coagulation/filtration
DDF	Direct and diatomite filtration
GAC	Granular activated carbon
IX	Ion exchange
LIME	Lime softening
RO	Reverse osmosis
CC	Corrosion control
ED	Electrodialysis
Cl_2	Oxidation (chlorine)
UV	Ultraviolet irradiation

BOARD NOTE: Derived from 40 CFR 141.62 (1992), as amended at 57 Fed. Reg. 31847 (July 17, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

Section 611.310 Old MCLs for Organic Chemicals

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

Contaminant	Level (mg/L)	Additional State Requirement (*)
a) Chlorinated hydrocarbons:		
Aldrin	0.001	*
DDT	0.05	*
Dieldrin	0.001	*
~~Endrin~~	~~0.0002~~	
Heptachlor	0.0001	*
Heptachlor epoxide	0.0001	*

BOARD NOTE: Originally ~~D~~derived from 40 CFR 141.12(a) (1991), USEPA removed the last entry in this subsection and marked it reserved at 57 Fed. Reg. 31838 (July 17, 1992). ~~This provision, which corresponds with 40 CFR 141.12, was formerly the only listing of MCLs for organic parameters. However, ~~USEPA added another listing of organic MCLs at 40 CFR 141.61 (1992), as amended at 5~~6~~7 Fed. Reg. ~~3593~~31847 (~~Jan. 30~~July 17, 199~~1~~2). ~~The USEPA codification scheme creates two listings of MCLs: the counterpart to one of which appears at this Section and the other appears at Section 611.311. This also causes h~~Heptachlor, heptachlor epoxide, and 2,4-D ~~to ~~appear in both ~~lists ~~this Section and in Section 611.311, with a different MCL in each ~~list~~Section. The heptachlor, heptachlor epoxide, and 2,4-D MCLs in this ~~list~~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.

Contaminant	Level (mg/L)	Additional State Requirement (*)
b) Chlorophenoxys:		
2,4-D	0.01	*

BOARD NOTE: Originally ~~D~~derived from 40 CFR 141.12(b) (1991), 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 *

BOARD NOTE: Derived in part from 40 CFR 141.12(c) (1992). This is an additional State requirement to the extent 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 individuals.

(Source: Amended at 17 Ill. Reg. _________, effective ______________________)

Section 611.311 Revised MCLs for Organic Contaminants

a) Volatile organic chemical contaminants. The following MCLs for volatile organic chemical contaminants (VOCs) apply to CWS suppliers and NTNCWS suppliers. The MCLs for dichloromethane, 1,2,4-trichlorobenzene, and 1,1,2-trichloroethane are effective January 17, 1994.

CAS No.	Contaminant	MCL (mg/L)
71-43-2	Benzene	0.005
56-23-5	Carbon tetrachloride	0.005
95-50-1	o-Dichlorobenzene	0.6
106-46-7	p-Dichlorobenzene	0.075
107-06-2	1,2-Dichloroethane	0.005
75-35-4	1,1-Dichloroethylene	0.007
156-59-2	cis-1,2-Dichloroethylene	0.07
156-60-5	trans-1,2-Dichloroethylene	0.1
75-09-2	Dichloromethane (methylene chloride)0.005	
78-87-5	1,2-Dichloropropane	0.005
100-41-4	Ethylbenzene	0.7
108-90-7	Monochlorobenzene	0.1
100-42-5	Styrene	0.1
127-18-4	Tetrachloroethylene	0.005
108-88-3	Toluene	1
120-82-1	1,2,4-Trichlorobenzene	0.07
71-55-6	1,1,1-Trichloroethane	0.2
79-00-5	1,1,2-Trichloroethane	0.005
79-01-6	Trichloroethylene	0.005
75-01-4	Vinyl chloride	0.002
1330-20-7	Xylenes (total)	10

BOARD NOTE: See the definition of "initial compliance period" at Section 611.101.

b) USEPA has identified, as indicated below, granular activated carbon (GAC), ~~or~~ packed tower aeration (PTA), or oxidation (OX) as BAT for achieving compliance with the MCLs for volatile organic chemical contaminants and synthetic organic chemical contaminants in subsections (a) and (c) of this Section.

15972-60-8	Alachlor	GAC
116-06-3	Aldicarb	GAC
1646-87-4	Aldicarb sulfone	GAC
1646-87-3	Aldicarb sulfoxide	GAC
1912-24-9	Atrazine	GAC
71-43-2	Benzene	GAC, PTA
50-32-8	Benzo[a]pyrene	GAC
1563-66-2	Carbofuran	GAC
56-23-5	Carbon tetrachloride	GAC, PTA
57-74-9	Chlordane	GAC
94-75-7	2,4-D	GAC
75-99-0	Dalapon	GAC
96-12-8	Dibromochloropropane	GAC, PTA
95-50-1	o-Dichlorobenzene	GAC, PTA
106-46-7	p-Dichlorobenzene	GAC, PTA

107-06-2	1,2-Dichloroethane	GAC, PTA
156-59-2	cis-1,2-Dichloroethylene	GAC, PTA
156-60-5	trans-1,2-Dichoroethylene	GAC, PTA
75-35-4	1,1-Dichloroethylene	GAC, PTA
75-09-2	Dichloromethane	PTA
78-87-5	1,2-Dichloropropane	GAC, PTA
103-23-1	Di(2-ethylhexyl)adipate	GAC, PTA
117-81-7	Di(2-ethylhexyl)phthalate	GAC
88-85-7	Dinoseb	GAC
85-00-7	Diquat	GAC
145-73-3	Endothall	GAC
72-20-8	Endrin	GAC
106-93-4	Ethylene dibromide (EDB)	GAC, PTA
100-41-4	Ethylbenzene	GAC, PTA
1071-53-6	Glyphosate	OX
76-44-8	Heptachlor	GAC
1024-57-3	Heptachlor epoxide	GAC
118-74-1	Hexachlorobenzene	GAC
77-47-3	Hexachlorocyclopentadiene	GAC, PTA
58-89-9	Lindane	GAC
72-43-5	Methoxychlor	GAC
108-90-7	Monochlorobenzene	GAC, PTA
23135-22-0	Oxamyl	GAC
87-86-5	Pentachlorophenol	GAC
1918-02-1	Picloram	GAC
1336-36-3	Polychlorinated biphenyls (PCB)	GAC
122-34-9	Simazine	GAC
100-42-5	Styrene	GAC, PTA
1746-01-6	2,3,7,8-TCDD	GAC
127-18-4	Tetrachloroethylene	GAC, PTA
108-88-3	Toluene	GAC
8001-35-2	Toxaphene	GAC
120-82-1	1,2,4-trichlorobenzene	GAC, PTA
71-55-6	1,1,1-Trichloroethane	GAC, PTA
79-00-5	1,1,2-trichloroethane	GAC, PTA
79-01-6	Trichloroethylene	GAC, PTA
~~108-88-3~~	~~Toluene~~	~~GAC~~
~~8001-35-2~~	~~Toxaphene~~	~~GAC, PTA~~
93-72-1	2,4,5-TP	GAC
75-01-4	Vinyl chloride	PTA
1330-20-7	Xylene	GAC, PTA

BOARD NOTE: Examination of the preamble to the Phase II amendments, at 56 Fed. Reg. 3529 (Jan. 30, 1991) indicates that USEPA may not have intended the adoption of PTA for BAT for toxaphene. The Board included it because that is what the federal rule actually indicates. See the Board Note to Section 611.130(c)(1).

c) Synthetic organic chemical contaminants. The following MCLs for synthetic organic chemical contaminants (SOCs) apply to CWS and NTNCWS suppliers. The MCLs for benzo[a]pyrene, dalapon, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, dinoseb, diquat, endothall, endrin, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl (vydate), picloram, simazine, and 2,3,7,8-TCDD (dioxin) are effective January 17, 1994.

CAS Number	Contaminant	MCL (mg/L)
15972-60-8	Alachlor	0.002
116-06-3	Aldicarb	0.003
1646-87-4	Aldicarb sulfone	0.002
1646-87-3	Aldicarb sulfoxide	0.004
1912-24-9	Atrazine	0.003
50-32-8	Benzo[a]pyrene	0.0002
1563-66-2	Carbofuran	0.04
57-74-9	Chlordane	0.002
94-75-7	2,4-D	0.07
75-99-0	Dalapon	0.2
96-12-8	Dibromochloropropane	0.0002
103-23-1	Di(2-ethylhexyl)adipate	0.4
117-81-7	Di(2-ethylhexyl)phthalate	0.006
88-85-7	Dinoseb	0.007
85-00-7	Diquat	0.02
145-73-3	Endothall	0.1
72-20-8	Endrin	0.002
106-93-4	Ethylene dibromide	0.00005
1071-53-6	Glyphosate	0.7
76-44-8	Heptachlor	0.0004
1024-57-3	Heptachlor epoxide	0.0002
118-74-1	Hexachlorobenzene	0.001
77-47-4	Hexachlorocyclopentadiene	0.05
58-89-9	Lindane	0.0002
72-43-5	Methoxychlor	0.04
23135-22-0	Oxamyl (Vydate)	0.2
87-86-5	Pentachlorophenol	0.001
1918-02-1	Picloram	0.5
1336-36-3	Polychlorinated biphenyls (PCBs)	0.0005
122-34-9	Simazine	0.004
1746-01-6	2,3,7,8-TCDD (Dioxin)	0.00000003
8001-35-2	Toxaphene	0.003
93-72-1	2,4,5-TP	0.05

BOARD NOTE: Derived from 40 CFR 141.61 (1992), as amended at 57 Fed. Reg. 31847 (July 17, 1992). See the definition of "initial compliance period" at Section 611.101. More stringent state MCLs for 2,4-D, heptachlor, and heptachlor epoxide appear at Section 611.310. See the Board Note at that provision. The effectiveness of the MCLs for aldicarb, aldicarb sulfone, and aldicarb sulfoxide are administratively stayed until the Board takes further administrative action to end this stay. However, suppliers must monitor for these three SOCs pursuant to Section 611.648. See 40 CFR 141.6(g) (1992) and 57 Fed. Reg. 22178 (May 27, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

SUBPART G: LEAD AND COPPER

Section 611.356 Tap Water Monitoring for Lead and Copper

a) Sample site location.

1) Selecting a pool of targeted sampling sites.

A) By the applicable date for commencement of monitoring under subsection (d)(1) below, each supplier shall complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this Section.

B) The pool of targeted sampling sites must be sufficiently large to ensure that the supplier can collect the number of lead and copper tap samples required by subsection (c) below.

C) The supplier shall select the sites for collection of first draw samples from this pool of targeted sampling sites.

D) The supplier shall not select as sampling sites any faucets that have point-of-use or point-of-entry treatment devices designed to remove or capable of removing inorganic contaminants.

2) Materials evaluation.

A) A supplier shall use the information on lead, copper, and galvanized steel collected pursuant to 40 CFR 141.42(d) (special monitoring for corrosivity characteristics) when conducting a materials evaluation.

B) When an evaluation of the information collected pursuant to 40 CFR 141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in subsection (a) above, the supplier shall review the following sources of information in order to identify a sufficient number of sampling sites:

i) all plumbing codes, permits, and records in the files of the building department(s) that indicate the plumbing materials that are installed within publicly- and privately-owned structures connected to the distribution system;

ii) all inspections and records of the distribution system that indicate the material composition of the service connections which connect a structure to the distribution system;

iii) all existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations; and

iv) the supplier shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities).

3) Tiers of sampling sites. Suppliers shall categorize the sampling sites within their pool according to the following tiers:

A) CWS Tier 1 sampling sites. "CWS Tier 1 sampling sites" shall include the following single-family structures:

  i) those that contain copper pipes with lead solder installed after 1982 or which contain lead pipes; or

  ii) those that are served by a lead service line.

  BOARD NOTE: This allows the pool of CWS tier 1 sampling sites to consist exclusively of structures served by lead service lines.

B) CWS Tier 2 sampling sites. "CWS Tier 2 sampling sites" shall include the following buildings, including multiple-family structures:

  i) those that contain copper pipes with lead solder installed after 1982 or contain lead pipes; or

  ii) those that are served by a lead service line.

  BOARD NOTE: This allows the pool of CWS tier 2 sampling sites to consist exclusively of structures served by lead service lines.

C) CWS Tier 3 sampling sites. "CWS Tier 3 sampling sites" shall include the following single-family structures: those that contain copper pipes with lead solder installed before 1983.

D) NTNCWS Tier 1 sampling sites. "NTNCWS Tier 1 sampling sites" shall include the following buildings:

  i) those that contain copper pipes with lead solder installed after 1982 or which contain lead pipes; or

  ii) those that are served by a lead service line.

  BOARD NOTE: This allows the pool of NTNCWS tier 1 sampling sites to consist exclusively of buildings served by lead service lines.

E) Alternative NTNCWS sampling sites. "Alternative NTNCWS sampling sites" shall include the following buildings: those that contain copper pipes with lead solder installed before 1983.

4) Selection of sampling sites. Suppliers shall select sampling sites for their sampling pool as follows:

A) CWS Suppliers. CWS suppliers shall use CWS tier 1 sampling sites, except that the supplier may include CWS tier 2 or CWS tier 3 sampling sites in its sampling pool as follows:

i) If multiple-family residences comprise at least 20 percent of the structures served by a supplier, the supplier may use CWS tier 2 sampling sites in its sampling pool; or

ii) If the CWS supplier has an insufficient number of CWS tier 1 sampling sites on its distribution system, the supplier may use CWS tier 2 sampling sites in its sampling pool; or

iii) If fewer than 20 percent of the structures served by the supplier are multiple-family residences, and the CWS supplier has an insufficient number of CWS tier 1 and CWS tier 2 sampling sites on its distribution system, the supplier may complete its sampling pool with CWS tier 3 sampling sites.

iv) If the supplier has an insufficient number of CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites, the supplier shall use those CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites that it has, and the supplier shall randomly select an additional pool of representative sites on its distribution system for the balance of its sampling sites.

B) NTNCWS suppliers.

i) An NTNCWS supplier shall select NTNCWS tier 1 sampling sites for its sampling pool, except if the NTNCWS supplier has an insufficient number of NTNCWS tier 1 sampling sites, the supplier may complete its sampling pool with alternative NTNCWS sampling sites.

ii) If the NTNCWS supplier has an insufficient number of NTNCWS tier 1 sampling sites and NTNCWS alternative sampling sites, the supplier shall use those NTNCWS tier 1 sampling sites and NTNCWS alternative sampling sites that it has, and the supplier shall randomly select an additional pool of representative sites on its distribution system for the balance of its sampling sites.

C) Agency submission by suppliers with an insufficient number of CWS or NTNCWS tier 1 sampling sites.

i) Any CWS or NTNCWS supplier whose sampling pool does not include a sufficient number of sites to consist exclusively of CWS tier 1 sampling sites or NTNCWS tier 1 sampling sites, as appropriate, shall submit a letter to the Agency under Section 611.360(a)(2) that demonstrates why a review of the information listed in subsection (a)(2) above was inadequate to locate a sufficient number of CWS tier 1 sampling sites or NTNCWS tier 1 sampling sites.

ii) Any CWS supplier that wants to include CWS tier 3 sampling sites in its sampling pool shall demonstrate in a letter to the Agency why it was unable to locate a sufficient number of CWS tier 1 sampling sites and CWS tier 2 sampling sites.

iii) If the Agency determines, based on the information submitted pursuant to subsection (a)(4)(C)(i) or (a)(4)(C)(ii) above, that either the information was inadequate to locate a sufficient number of CWS tier 1 sampling sites or NTNCWS tier 1 sampling sites, or that the supplier was unable to locate a sufficient number of CWS tier 1 sampling sites and CWS tier 2 sampling sites, the Agency shall issue a SEP to the supplier pursuant to Section 611.110 that allows it to use CWS tier 2 sampling sites, NTNCWS tier 2 sampling sites, or CWS tier 3 sampling sites, as appropriate.

D) Suppliers with lead service lines. Any supplier whose distribution system contains lead service lines shall draw samples during each six-month monitoring period from sampling sites as follows:

i) 50 percent of the samples from sampling sites that contain lead pipes or from sampling sites that have copper pipes with lead solder, and

ii) 50 percent of those samples from sites served by a lead service line.

iii) A supplier that cannot identify a sufficient number of sampling sites served by a lead service line shall demonstrate in a letter to the Agency under Section 611.360(a)(4) that it was unable to locate a sufficient number of such sites.

iv) If the Agency determines, based on the information submitted pursuant to subsection (a)(4)(D)(iii) above, that a supplier that cannot identify a sufficient number of sampling sites served by a lead service line, the Agency shall issue a SEP to the supplier pursuant to Section 611.110 that allows it to collect first draw samples from all of the sites on its distribution system identified as being served by such lines.

BOARD NOTE: This allows the pool of

sampling sites to consist exclusively of structures or buildings served by lead service lines.

b) Sample collection methods.

1) All tap samples for lead and copper collected in accordance with this Subpart, with the exception of lead service line samples collected under Section 611.354(c), shall be first-draw samples.

2) First-draw tap samples.

A) Each first-draw tap sample for lead and copper shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours.

B) First-draw samples from residential housing shall be collected from the cold water kitchen tap or bathroom sink tap.

C) First-draw samples from a non-residential building shall be collected at an interior tap from which water is typically drawn for consumption.

D) First-draw samples may be collected by the supplier or the supplier may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this subsection.

i) To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to 14 days after the sample is collected.

ii) If the first-draw sample is not acidified immediately after collection, then the sample must stand in the original container for at least 28 hours after acidification.

E) If a supplier allows residents to perform sampling under subsection (b)(2)(D) above, the supplier may not challenge the accuracy of sampling results based on alleged errors in sample collection.

3) Service line samples.

A) Each service line sample shall be one liter in volume and have stood motionless in the lead service line for at least six hours.

B) Lead service line samples shall be collected in one of the following three ways:

i) at the tap after flushing that volume of water calculated as being between the tap and the lead service line based on the interior diameter and length of the pipe between the tap and the lead service line;

ii) tapping directly into the lead service line; or

iii) if the sampling site is a single-family structure, allowing the water to run until there is a significant change in temperature that would be indicative of water that has been standing in the lead service line.

4) Follow-up first-draw tap samples.

A) A supplier shall collect each follow-up first-draw tap sample from the same sampling site from which it collected the previous sample(s).

B) If, for any reason, the supplier cannot gain entry to a sampling site in order to collect a follow-up tap sample, the supplier may collect the follow-up tap sample from another sampling site in its sampling pool, as long as the new site meets the same targeting criteria and is within reasonable proximity of the original site.

c) Number of samples

1) Suppliers shall collect at least one sample from the number of sites listed in the first column of Section 611.Table D (labelled "standard monitoring") during each six-month monitoring period specified in subsection (d) below.

2) A supplier conducting reduced monitoring pursuant to subsection (d)(4) below may collect one sample from the number of sites specified in the second column of Section 611.Table D (labelled "reduced monitoring") during each reduced monitoring period specified in subsection (d)(4) below.

d) Timing of monitoring

1) Initial tap sampling.

The first six-month monitoring period for small, medium-sized and large system suppliers shall begin on the dates specified in Section 611.Table F.

A) All large system suppliers shall monitor during each of two consecutive six-month periods.

B) All small and medium-sized system suppliers shall monitor during each consecutive six-month monitoring period until:

i) the supplier exceeds the lead action level or the copper action level and is therefore required to implement the corrosion control treatment requirements under Section 611.351, in which case the supplier shall continue monitoring in accordance with subsection (d)(2) below, or

ii) the supplier meets the lead action level and the copper action level during each of two consecutive six-month monitoring periods, in which case the supplier may reduce monitoring in accordance with subsection (d)(4) below.

2) Monitoring after installation of corrosion control and source water treatment.

A) Any large system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(d)(4) shall monitor during each of two consecutive six-month monitoring periods before the date specified in Section 611.351(d)(5).

B) Any small or medium-sized system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(e)(5) shall monitor during each of two consecutive six-month monitoring periods before the date specified in Section 611.351(e)(6).

C) Any supplier that installs source water treatment pursuant to Section 611.353(a)(3) shall monitor during each of two consecutive six-month monitoring periods before the date specified in Section 611.353(a)(4).

3) Monitoring after the Agency specification of water quality parameter values for optimal corrosion control.

After the Agency specifies the values for water quality control parameters pursuant to Section 611.352(f), the supplier shall monitor during each subsequent six-month monitoring period, with the first six-month monitoring period to begin on the date the Agency specifies the optimal values.

4) Reduced monitoring.

A) Reduction to annual for small and medium-sized system suppliers meeting the lead and copper action levels. A small or medium-sized system supplier that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of samples in accordance with subsection (c) above, and reduce the frequency of sampling to once per year.

B) SEP allowing reduction to annual for suppliers maintaining water quality control parameters.

i) The Agency shall, by a SEP granted pursuant to Section 611.110, allow any supplier to reduce the frequency of monitoring to annual and the number of lead and copper samples to that specified by subsection (c) above if it determines that a supplier has, during each of two consecutive six-month monitoring periods, maintained the range of values for the water quality control parameters specified pursuant to Section 611.352(f) as reflecting optimal corrosion control treatment.

ii) Any supplier may request a SEP if it concurrently provides the Agency with the information necessary to support a determination under subsection (d)(4)(B)(i) above.

iii) The Agency shall set forth the basis for its determination under subsection (d)(4)(B)(i) above.

iv) The Agency shall, by a SEP issued pursuant to Section 611.110, review, and where appropriate, revise its subsection (d)(4)(B)(i) above determination when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency.

C) Reduction to triennial for small and medium-sized system suppliers.

i) Small and medium-sized system suppliers meeting lead and copper action levels. A small or medium-sized system supplier that meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years.

ii) SEP for suppliers meeting optimal corrosion control treatment. The Agency shall, by a SEP granted pursuant to Section 611.110, allow a supplier to reduce its monitoring frequency from annual to triennial if it determines that the supplier, during each of three consecutive years of monitoring, has maintained the range of values for the water quality control parameters specified as representing optimal corrosion control treatment pursuant to Section 611.352(f). Any supplier may request a SEP if it concurrently provides the Agency with the information necessary to support a determination under this subsection. The Agency shall set forth the basis for its determination. The Agency shall, by a SEP issued pursuant to Section 611.110, review, and where appropriate, revise its determination when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency.

D) Sampling at a reduced frequency. A supplier that reduces the number and frequency of sampling shall collect these samples from sites included in the pool of targeted sampling sites identified in subsection (a) above, preferentially selecting those sampling sites from the higest tier first. Suppliers sampling annually or less frequently shall conduct the lead and copper tap sampling during the months of June, July, August, or September.

E) Resumption of standard monitoring.

i) Small or medium-sized suppliers exceeding lead or copper action level. A small or medium-sized system supplier subject to reduced monitoring that exceeds the lead action level or the copper action level shall resume sampling in accordance subsection (d)(3) above and collect the number of samples specified for standard monitoring under subsection (c) above. Such a supplier shall also conduct water quality parameter monitoring in accordance with Section 611.357 (b), (c), or (d) (as appropriate) during the six-month monitoring period in which it exceeded the action level.

ii) Suppliers failing to operate within water quality control parameters. Any supplier subject to reduced monitoring frequency that fails to operate within the range of values for the water quality control parameters specified pursuant to Section 611.352(f) shall resume tap water sampling in accordance with subsection (d)(3) above and collect the number of samples specified for standard monitoring under subsection (c) above.

e) Additional monitoring. The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the supplier and the Agency in making any determinations (i.e., calculating the 90th percentile lead action level or the copper level) under this Subpart.

BOARD NOTE: Derived from 40 CFR 141.86 (1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ _______________)

Section 611.359 Analytical Methods

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

1) Analyses 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:

A) 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

B) Achieve quantitative acceptance limits as follows:

i) 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, and

ii) 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;

iii) 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"; and

iv) Be currently certified by USEPA or the Agency to perform analyses to the specifications described in subsection (a)(2) below.

2) 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.

3) Reporting lead levels.

A) All lead levels greater than or equal to the lead PQL ($Pb \geq 0.005$ mg/L) must be reported as measured.

B) All lead levels measured less than the PQL and greater than the MDL (0.005 mg/L $> Pb >$ MDL) must be either reported as measured or as one-half the PQL (0.0025 mg/L).

C) All lead levels below the lead MDL (MDL $>$ Pb) must be reported as zero.

4) Reporting copper levels.

A) All copper levels greater than or equal to the copper PQL ($Cu \geq 0.05$ mg/L) must be reported as measured.

B) All copper levels measured less than the PQL and greater than the MDL (0.05 mg/L $>$ Cu $>$ MDL) must be either reported as measured or as one-half the PQL (0.025 mg/L).

C) All copper levels below the copper MDL (MDL

> Cu) must be reported as zero.

b) Analytical methods.

1) Lead

A) Atomic absorption, furnace technique:

i) USEPA Inorganic Methods: Method 239.2,

ii) ASTM Methods: Method D3559-85D, or

iii) Standard Methods: Method 3113;

B) Inductively-coupled plasma, mass spectrometry: ICP-MS Method 200.8; or

C) Atomic absorption, platform furnace technique: AA-Platform Furnace Method 200.9.

D) For analyzing lead and copper, the technique applicable to total metals must be used and samples~~s~~ cannot be filtered. Samples that contain less than 1 NTU and which are properly preserved (concentrated nitric acid to pH less than 2) may be analyzed directly (without digestion) for total metals; otherwise digestion is required. Turbidity must be measured on the preserved samples just prior to when metal analysis is initiated. When disgestion is required, the "total recoverable" technique, as defined in the method, must be used.

2) Copper

A) Atomic absorption, furnace technique:

i) USEPA Inorganic Methods: Method 220.2,

ii) ASTM Methods: Method D1688-90C, or

iii) Standard Methods: Method 3113;

B) Atomic absorption, direct aspiration:

i) USEPA Inorganic Methods: Method 220.1,

        - ii) ASTM Methods: Method D1688-90A, or
        - iii) Standard Methods: Method 3111-B;
    - C) Inductively-coupled plasma:
        - i) ICP Method 200.7, Rev. 3.2, or
        - ii) Standard Methods: Method 3120;
    - D) Inductively-coupled plasma; mass spectrometry: ICP-MS Method 200.8; or
    - E) Atomic absorption; platform furnace technique: AA-Platform Furnace Method 200.9.
    - F) Subsection (b)(1)(D) above applies to analyses for copper.
- 3) pH: Electrometric:
    - A) USEPA Inorganic Methods: Method 150.1 or 150.2,
    - B) ASTM Methods: Method D1293-84B, or
    - C) Standard Methods: Method 4500-H^+.
- 4) Conductivity: Conductance:
    - A) USEPA Inorganic Methods: Method 120.1,
    - B) ASTM Methods: Method D1125-82B, or
    - C) Standard Methods: Method 2510.
- 5) Calcium:
    - A) EDTA titrimetric:
        - i) USEPA Inorganic Methods: Method 215.2,
        - ii) ASTM Methods: Method D511-88A, or
        - iii) Standard Methods: Method 3500-Ca D;
    - B) Atomic absorption; direct aspiration:
        - i) USEPA Inorganic Methods: Method

215.1,

ii) ASTM Methods: Method D511-88B, or

iii) Standard Methods: Method 3111-B; or

C) Inductively-coupled plasma:

i) ICP Method 200.7, Rev 3.2, or

ii) Standard Methods: Method 3120.

6) Alkalinity:

A) Titrimetric:

i) USEPA Inorganic Methods: Method 310.1,

ii) ASTM Methods: Method D1067-88B, or

iii) Standard Methods: Method 2320; or

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

7) Orthophosphate:

A) Unfiltered, no digestion or hydrolysis: USEPA Inorganic Methods: Method 365.1;

B) Colorimetric, automated, ascorbic acid: Standard Methods: Method 4500-P F;

C) Colorimetric, ascorbic acid, two reagent;

i) USEPA Inorganic Methods: Method 365.3, or

ii) Standard Methods: Method 4500-P E;

D) Colorimetric, ascorbic acid, single reagent:

i) USEPA Inorganic Methods: Method 365.2, or

ii) ASTM Methods: Method D515-88A;

E) Colorimetric, phosphomolybdate, automated-segmented flow or automated discrete: USGS Methods: Methods I-1601-85, I-2601-85, or

I-2598-85.

F) Ion Chromatography:

i) Ion Chromatography Method 300.0,

ii) ASTM Methods: Method D4327-88, or

iii) Standard Methods: Method 4110.

8) Silica:

A) Colorimetric, molybdate blue, automated-segmented flow; USGS Methods: Methods I-1700-85 or I-2700-85;

B) Colorimetric:

i) USEPA Inorganic Methods: Method 370.1, or

ii) ASTM Methods: Method D859-88;

C) Molybdosilicate: Standard Methods: Method 4500-Si-D;

D) Heteropoly blue: Standard Methods: Method 4500-Si-E;

E) Automated method for molybdate-reactive silica: Standard Methods: Method 4500-Si-F; or

F) Inductively-coupled plasma:

i) ICP Method 200.7, Rev. 3.2, or

ii) Standard Methods: Method 3120.

9) Temperature: Thermometric: Standard Methods: Method 2550.

BOARD NOTE: Derived from 40 CFR 141.89 (1992), as amended at 57 Fed. Reg. 31847 (July 17, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

Section 611.360 Reporting

A supplier shall report all of the following information to the Agency in accordance with this Section.

a) Reporting for tap, lead and copper, and water quality parameter monitoring.

1) A supplier shall report the following information for all samples within 10 days of the end of each applicable sampling period specified in Sections 611.356 through 611.358 (i.e., every six-months, annually, every 3 years, or every nine years).

A) the results of all tap samples for lead and copper, including the location of each site and the criteria under Section 611.356(a)(3) through (7) under which the site was selected for the supplier's sampling pool;

B) a certification that each first-draw sample collected by the supplier was one-liter in volume and, to the best of the supplier's knowledge, had stood motionless in the service line, or in the interior plumbing of a sampling site, for at least six hours;

C) where residents collected samples, a certification that each tap sample collected by the residents was taken after the supplier informed them of the proper sampling procedures specified in Section 611.356(b)(2);

D) the 90th percentile lead and copper concentrations measured from among all lead and copper tap samples collected during each sampling period (calculated in accordance with Section 611.350(c)(3));

E) with the exception of initial tap sampling conducted pursuant to Section 611.356(d)(1), the supplier shall designate any site that was not sampled during previous sampling periods, and include an explanation of why sampling sites have changed;

F) the results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected pursuant to Section 611.357(b) through (e);

G) the results of all samples collected at entry point(s) for applicable water quality parameters pursuant to Section 611.357(b) through (e).

2) By the applicable date in Section 611.356(d)(1) for commencement of monitoring, each CWS supplier that does not complete its targeted sampling pool with CWS tier 1 sampling sites meeting the requirements of Section 611.356(a)(4)(A) shall send a letter to the Agency justifying its selection of CWS tier 2 sampling sites or CWS tier 3 sampling sites pursuant to Section 611.356 (a)(4)(A)(ii), (a)(4)(A)(iii), or (a)(4)(A)(iv).

3) By the applicable date in Section 611.356(d)(1) for commencement of monitoring, each NTNCWS supplier that does not complete its sampling pool with NTNCWS tier 1 sampling sites meeting the requirements of Section 611.356(a)(4)(B) shall send a letter to the Agency justifying its selection of alternative NTNCWS sampling sites pursuant to that Section.

4) By the applicable date in Section 611.356(d)(1) for commencement of monitoring, each supplier with lead service lines that is not able to locate the number of sites served by such lines required by Section 611.356(a)(4)(D) shall send a letter to the Agency demonstrating why it was unable to locate a sufficient number of such sites based upon the information listed in Section 611.356(a)(2).

5) Each supplier that requests that the Agency grant a SEP that reduces the number and frequency of sampling shall provide the information required by Section 611.356(d)(4).

b) Reporting for source water monitoring.

1) A supplier shall report the sampling results for all source water samples collected in accordance with Section 611.358 within 10 days of the end of each source water sampling period (i.e., annually, per compliance period, per compliance cycle) specified in Section 611.358.

2) With the exception of the first round of source water sampling conducted pursuant to Section

611.358(b), a supplier shall specify any site that was not sampled during previous sampling periods, and include an explanation of why the sampling point has changed.

c) Reporting for corrosion control treatment.

By the applicable dates under Section 611.351, a supplier shall report the following information:

1) for a supplier demonstrating that it has already optimized corrosion control, the information required by Section 611.352(b)(2) or (b)(3).

2) for a supplier required to optimize corrosion control, its recommendation regarding optimal corrosion control treatment pursuant to Section 611.352(a).

3) for a supplier required to evaluate the effectiveness of corrosion control treatments pursuant to Section 611.352(c), the information required by Section 611.352(c).

4) for a supplier required to install optimal corrosion control approved by the Agency pursuant to Section 611.352(d), a copy of the Agency permit letter, which acts as certification that the supplier has completed installing the permitted treatment.

d) Reporting for source water treatment. On or before the applicable dates in Section 611.353, a supplier shall provide the following information to the Agency:

1) if required by Section 611.353(b)(1), its recommendation regarding source water treatment; or

2) for suppliers required to install source water treatment pursuant to Section 611.353(b)(2), a copy of the Agency permit letter, which acts as certification that the supplier has completed installing the treatment approved by the Agency within 24 months after the Agency approved the treatment.

e) Reporting for lead service line replacement. A supplier shall report the following information to the Agency to demonstrate compliance with the requirements of Section 611.354:

1) Within 12 months after a supplier exceeds the lead action level in sampling referred to in Section 611.354(a), the supplier shall report each of the following to the Agency in writing:

   A) a demonstration that it has conducted a materials evaluation, including the evaluation required by Section 611.356(a),

   B) identify the initial number of lead service lines in its distribution system, and

   C) provide the Agency with the supplier's schedule for annually replacing at least 7 percent of the initial number of lead service lines in its distribution system.

2) Within 12 months after a supplier exceeds the lead action level in sampling referred to in Section 611.354(a), and every 12 months thereafter, the supplier shall demonstrate to the Agency in writing that the supplier has either:

   A) replaced in the previous 12 months at least 7 percent of the initial number of lead service lines in its distribution system (or any greater number of lines specified by the Agency pursuant to Section 611.354(f)), or

   B) conducted sampling that demonstrates that the lead concentration in all service line samples from an individual line(s), taken pursuant to Section 611.356(b)(3), is less than or equal to 0.015 mg/L.

   C) Where the supplier makes a demonstration under subsection (e)(2)(B) above, the total number of lines that the supplier has replaced, combined with the total number that meet the criteria of Section 611.354(b), shall equal at least 7 percent of the initial number of lead lines identified pursuant to subsection (a) above (or the percentage specified by the Agency pursuant to Section 611.354(f)).

3) The annual letter submitted to the Agency pursuant to subsection (e)(2) above shall contain the following information:

A) the number of lead service lines originally scheduled to be replaced during the previous year of the supplier's replacement schedule;

B) the number and location of each lead service line actually replaced during the previous year of the supplier's replacement schedule; and

C) if measured, the water lead concentration from each lead service line sampled pursuant to Section 611.356(b)(3) and the location of each lead service line sampled, the sampling method used, and the date of sampling.

4) As soon as practicable, but no later than three months after a supplier exceeds the lead action level in the sampling referred to in Section 611.354(a), any supplier seeking to rebut the presumption that it has control over the entire lead service line pursuant to Section 611.354(d) shall submit a letter to the Agency describing the following:

A) the legal authority (e.g., state statutes, municipal ordinances, public service contracts or other applicable legal authority) that limits the supplier's control over the service lines; and

B) the extent of the supplier's control over the service lines.

BOARD NOTE: This communication is vital to a supplier seeking to replace less than entire service lines. Under Section 611.354(e)(1), a supplier is presumed to control the entire service line unless it makes an affirmative showing. Under Section 611.354(d)(2)(A), a supplier is affirmatively required to replace all of each service line except as to any particular service line for which the Agency has made an affirmative determination that the supplier does not control in its entirety. Under Sections 611.354(b)(1) and (b)(4), the supplier must have completed replacing seven percent of the lead service lines within a year of the day of the event that triggered the requirement. Section 39(a) of the Act allows the Agency 90 days to render its decision on any permit request. Therefore, any supplier that desires an Agency determination pursuant to Section 611.354(e)(2) must submit the required infomation within the three month time-frame of this subsection.

f) Reporting for public education program.

1) By December 31st of each calendar year, any supplier that is subject to the public education requirements of Section 611.355 shall submit a letter to the Agency demonstrating that the supplier has delivered the public education materials which meet the following requirements:

A) the content requirements of Section 611.355(a) and (b), and

B) the delivery requirements of Section 611.355(c).

2) The information submitted pursuant to this subsection shall include a list of all the newspapers, radio stations, television stations, facilities and organizations to which the supplier delivered public education materials during the previous year.

3) The supplier shall submit the letter required by this subsection annually for as long as it continues to exceed the lead action level.

g) Reporting additional monitoring data. Any supplier that collects sampling data in addition to that required by this Subpart shall report the results of that sampling to the Agency on or before the end of the applicable sampling period(s) specified by Sections 611.356 through 611.358 during which the samples are collected.

BOARD NOTE: Derived from 40 CFR 141.90 (1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.510 Special Monitoring for Unregulated Contaminants

a) Monitoring for Phase I unregulated contaminants.

1) All CWS and NTNCWS suppliers shall begin monitoring for the contaminants listed in subsection (a)(5) no later than the the following dates:

A) Less than 3300 persons served: January 1, 1991.

B) 3300 to 10,000 persons served: January 1, 1989.

C) More than 10,000 persons served: January 1, 1988.

2) SWS and mixed system suppliers shall sample at points in the distribution system representative of each water source or at entry points to the distribution system after any applicaiton of treatment. The minimum number of samples is one year of quarterly samples per water source.

3) GWS suppliers shall sample at points of entry to the distribution system representative of each well after any application of treatment. The minimum number of samples is one sample per entry point to the distribution system.

4) 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.

5) List of Phase I unregulated chemical contaminants:

Bromobenzene
Bromodichloromethane
Bromoform
Bromomethane
Chlorobenzene
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
o-Chlorotoluene

p-Chlorotoluene
m-Dichlorobenzene
1,1-Dichloroethane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
1,3-Dichloropropene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,2,3-Trichloropropane

6) This subsection corresponds with 40 CFR 141.40(f), reserved by USEPA. This statement maintains structural consistency with USEPA rules.

7) Analyses performed pursuant to subsection (a) shall be conducted using the following USEPA Organic Methods: 502.1, 503.1, 524.1, 524.2, or 502.2.

BOARD NOTE: Subsection (b) derived from 40 CFR 141.40(a) through (m) (1992), as amended at 57 Fed. Reg. 31845 (July 17, 1992). The Board has adopted no counterpart to 40 CFR 40 CFR 141.40(h), which the Board has codified at subsection (c) below; 141.40(i), which pertains to the ability of suppliers to grandfather data up until a date long since expired; 141.41(j), an optional USEPA provision relating to monitoring 15 additional contaminants that USEPA does not require for state programs; 141.40(k), which pertains to notice to the Agency by smaller suppliers up until a date long since expired in lieu of sampling; 141.40(l), which the Board has adopted at subsection (d) below; and 141.40(m), an optional provision that pertains to composite sampling. Otherwise, the structure of this Section directly corresponds with 40 CFR 141.40(a) through (m) (1992)

b) Monitoring for Phase V unregulated contaminants. Monitoring of the unregulated ~~in~~organic contaminants listed in subsection (~~k~~b)(11) below and the unregulated inorganic contaminants listed in subsection (~~l~~b)(12) below shall be conducted as follows:

~~a~~1) Each CWS and NTNCWS supplier shall take four consecutive quarterly samples at each sampling point for each contaminant listed in subsection (~~k~~b)(11) below and report the results to the

Agency. Monitoring must be completed by December 31, 1995.

~~b~~2) Each CWS and NTNCWS supplier shall take one sample at each sampling point for each contaminant listed in subsection (~~k~~b)(12) below and report the results to the Agency. Monitoring must be completed by December 31, 1995.

~~c~~3) Each CWS and NTNCWS supplier may apply to the Agency for a SEP pursuant to Section 611.110 that releases it from any of the requirements of subsections (~~a~~b)(1) and (b)(2) above.

~~d~~4) The Agency shall grant a SEP pursuant to Section 611.110 as follows:

~~1~~A) From any requirement of subsection (~~a~~b)(1) above based on consideration of the factors set forth at Section 611.110(e), and

~~2~~B) From any requirement of subsection (b)(2) above if previous analytical results indicate contamination would not occur, provided this data was collected after January 1, 1990.

~~e~~5) A GWS supplier shall take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment ("sampling point").

~~f~~6) A SWS or mixed system supplier shall take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the system after treatment ("sampling point").

~~g~~7) If the system draws water from more than one source and sources are combined before distribution, the supplier shall sample at an entry point during periods of normal operating conditions (when water representative of all sources is being used).

~~h~~8) 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.

~~i~~9) Suppliers shall take samples at the same sampling point unless the Agency has granted a SEP allowing another sampling point because conditions make another sampling point more representative of the water from each source or treatment plant.

BOARD NOTE: Subsection (~~i~~b)(9) above corresponds with duplicate segments of 40 CFR 141.40(n)(5) and (n)(6) (199~~1~~2), which correspond with subsections (~~e~~b)(5) and (~~f~~b)(6) above. The Board has adopted no counterpart to 40 CFR 141.40(n)(9), an optional provision that pertains to composite sampling. Otherwise, the structure of this Section directly corresponds with 40 CFR 141.40(n) (199~~1~~2).

~~j~~10) Instead of performing the monitoring required by this ~~S~~subsection, a CWS and NTNCWS supplier serving fewer than 150 service connections may send a letter to the Agency stating that the PWS is available for sampling. This letter must be sent to the Agency by January 1, 1994. The supplier shall not send such samples to the Agency, unless requested to do so by the Agency.

~~k~~11) List of Phase V unregulated organic contaminants with methods required for analysis:

Contaminant	USEPA Organic Methods

Aldrin	505, 508, 525
~~Benzo(a)pyrene~~	~~525, 550, 550.1~~
Butachlor	507, 525
Carbaryl	531.1
~~Dalapon~~	~~515.1~~
~~Di(2-ethylhexyl)-adipate~~	~~506, 525~~
~~Di(2-ethylhexyl)-phthalates~~	~~506, 525~~
Dicamba	515.1
Dieldrin	505, 508, 525
~~Dinoseb~~	~~515.1~~
~~Diquat~~	~~549~~
~~Endothall~~	~~548~~
~~Glyphosate~~	~~547~~
~~Hexachlorobenzene~~	~~505, 508, 525~~
~~Hexachlorocyclo-pentadiene~~	~~505, 525~~
3-Hydroxycarbofuran	531.1
Methomyl	531.1
Metolachlor	507, 525
Metribuzin	507, 508, 525
~~Oxamyl (vydate)~~	~~531.1~~
~~Picloram~~	~~515.1~~
Propachlor	507, 525
~~Simazine~~	~~505, 507, 525~~
~~2,3,7,8-TCDD (Dioxin)~~	~~513~~

~~1~~12) List of unregulated inorganic contaminants:

Contaminant	USEPA Inorganic Methods
~~Antimony~~	~~Graphite Furnace Atomic Absorption; Inductively Coupled Plasma~~
~~Beryllium~~	~~Graphite Furnace Atomic Absorption; Inductively Coupled Mass Spectrometry Plasma; Spectrophotometric~~
~~Nickel~~	~~Atomic Absorption; Inductively Coupled Plasma; Graphite Furnace Atomic Absorption~~
Sulfate	Colorimetric
~~Thallium~~	~~Graphite Furnace Atomic Absorption; Inductively Coupled Mass Spectrometry Plasma~~
~~Cyanide~~	~~Spectrophotometric~~

BOARD NOTE: ~~D~~Subsection (b) derived from

40 CFR 141.40(n) (199~~1~~2), as amended at 57 Fed. Reg. 31846 (July 17, 1992).

c) Analyses performed pursuant to this Section must be conducted by a laboratory approved pursuant to Section 611.646(q).

BOARD NOTE: Subsection (c) derived from 40 CFR 141.40 (h) (1992), as amended at 57 Fed. Reg. 31846 (July 17, 1992).

d) All CWS and NTNCWS suppliers shall repeat the monitoring required by this Section no less frequently than every five years, starting from the dates specified in subsections (a)(1) and (b)(2) above.

BOARD NOTE: Subsection (d) derived from 40 CFR 141.40 (l) (1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.600 Applicability

The following types of suppliers shall conduct monitoring to determine compliance with the old MCLs in Section 611.300 and the revised MCLs in 611.301, as appropriate, in accordance with this Subpart:

a) CWS suppliers.

b) NTNCWS suppliers.

c) Transient non-CWS suppliers to determine compliance with the nitrate and nitrite MCLs.

BOARD NOTE: Derived from 40 CFR 141.23 (preamble) (1991).

d) Detection limits. The following are detection limits for purposes of this Subpart (MCLs from Section 611.301 are set forth for information purposes only):

Contaminant	MCL (mg/L, except	Method	Detection Limit (mg/L)

	asbestos)		
Antimony	0.006	Atomic absorption-furnace technique	0.003
		Atomic absorption-furnace technique (stabilized temperature)	0.0008
		Inductively-coupled plasma-Mass spectrometry	0.0004
		Atomic absorption-gaseous hydride technique	0.001
Asbestos	7 MFL	Transmission ~~E~~electron ~~M~~microscopy	0.01 MFL
Barium	2	Atomic ~~A~~absorption~~;~~-furnace technique	0.002
		Atomic ~~A~~absorption~~;~~-direct aspiration technique	0.1
		Inductively~~ C~~-coupled ~~P~~plasma arc furnace	0.002
		Inductively~~ C~~-coupled ~~P~~plasma~~;~~ ~~U~~(using concentration technique in ~~Section 611.A~~appendix 200.7A to USEPA Inorganic Method 200.7)~~.~~	0.001
Beryllium	0.004	Atomic absorption-furnace technique	0.0002
		Atomic absorption-furnace technique (stabilized temperature)	0.00002
		Inductively-coupled plasma (using a 2x preconcentration step; a lower MDL is possible using 4x	0.0003

		preconcentration)	
		Inductively-coupled plasma-Mass spectrometry	0.0003
Cadmium	0.005	Atomic ~~A~~absorption~~;~~- furnace technique	0.0001
		Inductively~~ C~~-coupled ~~P~~plasma~~;~~ ~~U~~(using concentration technique in ~~A~~appendix 200.7A to USEPA Inorganic Method 200.7)~~.~~	0.001
Chromium	0.1	Atomic ~~A~~absorption~~;~~- furnace technique	0.001
		Inductively~~ C~~-coupled ~~P~~plasma	0.007
		Inductively~~ C~~-coupled ~~P~~plasma~~;~~ ~~U~~(using concentration technique in Appendix A to USEPA Inorganic Method 200.7)~~.~~	0.001
Cyanide	0.2	Distillation, spectrophotometric (screening method for total cyanides)	0.02
		Automated distillation, spectrophotometric (screening method for total cyanides)	0.005
		Distillation, selective electrode (screening method for total cyanides)	0.05
		Distillation, amenable, spectrophotometric (for free cyanides)	0.02
Mercury	0.002	Manual ~~C~~cold ~~V~~vapor	0.0002

		~~T~~technique	
		Automated ~~C~~cold ~~V~~vapor ~~T~~technique	0.0002
Nickel	0.1	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.0006
		Inductively-coupled plasma (using a 2x preconcentration step; a lower MDL is possible using 4x preconcentration)	0.005
		Inductively-coupled plasma-Mass spectrometry	0.0005
Nitrate (as N)	10	Manual ~~C~~cadmium ~~R~~reduction	0.01
		Automated ~~H~~hydrazine ~~R~~reduction	0.01
		Automated ~~C~~cadmium ~~R~~reduction	0.05
		Ion~~ S~~-selective ~~E~~electrode	1
		Ion ~~C~~chromatography	0.01
Nitrite (as N)	1	Spectrophotometric	0.01
		Automated ~~C~~cadmium ~~R~~reduction	0.05
		Manual ~~C~~cadmium ~~R~~reduction	0.01
		Ion ~~C~~chromatography	0.004
Selenium	0.05	Atomic ~~A~~absorption~~;~~-furnace technique	0.002

		Atomic ~~A~~absorption~~;~~-gaseous hydride technique	0.002
Thallium	0.002	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.0007
		Inductively-coupled plasma-Mass spectrometry	0.0003

BOARD NOTE: Derived from 40 CFR 141.23 preamble and paragraph (a)(4)(i) (1991), as amended at 57 Fed. Reg. 31838-39 (July 17, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective _______________________)

Section 611.601 Monitoring Frequency

Monitoring shall be conducted as follows:

a) Required sampling.

1) Each supplier shall take a minimum of one sample at each sampling point at the times required by Section 611.610 beginning ~~January 1, 1993~~in the initial compliance period.

2) Each sampling point must produce samples that are representative of the water from each source after treatment or from each treatment plant, as required by subsection (b) below. The total number of sampling points must be representative of the water delivered to users throughout the PWS.

3) The supplier shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant and the Agency has granted a SEP pursuant to subsection (b)(5) below.

b) 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 take at least one sample from each of the following points:

A) Each entry point after the application of treatment; or

B) A point in the distribution system that is representative of each source after treatment.

3) 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.

4) Additional sampling points. The Agency shall, by SEP, designate additional sampling points in the distribution system or at the consumer's tap if it determines that such samples are necessary to more accurately determine consumer exposure.

5) Alternative sampling points. The Agency shall, by SEP, approve alternate sampling points if the supplier demonstrates that the points are more representative than the generally required point.

c) This subsection corresponds with 40 CFR 141.23(a)(4), 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.

d) The frequency of monitoring for the following contaminants must be in accordance with the following Sections:

1) Asbestos: Section 611.602;

2) Antimony, ~~B~~barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury ~~and~~nickel, selenium, and thallium: Section 611.603;

3) Nitrate: Section 611.604; and

4) Nitrite: Section 611.605.

BOARD NOTE: Derived from 40 CFR 141.23(a) (1991) and 40 CFR 141.23(c), as amended at 57 Fed. Reg. 31839 (July 17, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ _______________)

Section 611.603 Inorganic Monitoring Frequency

The frequency of monitoring conducted to determine compliance with the revised MCLs in Section 611.301 for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, ~~and~~nickel, selenium, and thallium is as follows:

a) Suppliers shall take samples at each sampling point, beginning ~~January 1, 1993~~in the initial compliance period, as follows:

1) For GWSs: at least one sample ~~during each compliance period~~every three years;

2) For SWSs and mixed systems: at least one sample each year.

BOARD NOTE: Derived from 40 CFR 141.23(c)(1) (1991), as amended at 57 Fed. Reg. 31839 (July 17, 1992).

b) SEP Application. The supplier may apply to the Agency for a SEP that allows reduction from the monitoring frequencies specified in subsection (a) above pursuant to subsections (d) through (f) below and Section 611.110.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(2) and (c)(6) (1991).

c) SEP Procedures. The Agency shall review the request pursuant to the SEP procedures of Section 611.110 based on consideration of the factors in subsection (e) below.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(6) (1991).

d) Standard for SEP reduction in monitoring. The Agency shall grant a SEP that allows a reduction in the monitoring frequency if the supplier demonstrates that all previous analytical results were less than the MCL, provided the supplier meets the following minimum data requirements:

1) For GWS suppliers: a minimum of three rounds of monitoring.

2) For SWS and mixed system suppliers: annual monitoring for at least three years.

3) At least one sample must have been taken since January 1, 1990.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(4) (1991).

e) Standard for SEP monitoring conditions. As a condition of any SEP, the Agency shall require that the supplier take a minimum of one sample during the term of the SEP. In determining the appropriate reduced monitoring frequency, the Agency shall consider:

1) Reported concentrations from all previous monitoring;

2) The degree of variation in reported concentrations; and

3) Other factors may affect contaminant concentrations, such as changes in groundwater pumping rates, changes in the CWSs configuration, the CWS's operating procedures, or changes in stream flows or characteristics.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(3) and (c)(5) (1991).

f) SEP Conditions and Revision.

1) A SEP will expire at the end of the compliance cycle for which it was issued.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(3) (1991).

2) In issuing a SEP, the Agency shall specify the level of the contaminant upon which the "reliably and consistently" determination was based. A SEP must provide that the Agency will review and, where appropriate, revise its determination of the appropriate monitoring frequency when the supplier submits new

monitoring data or when other data relevant to the supplier's appropriate monitoring frequency become available.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(6) (1991).

g) A supplier that exceeds the MCL for barium, cadmium, chromium, fluoride, mercury, or selenium, as determined in Section 611.609, shall monitor quarterly for that contaminant, beginning in the next quarter after the violation occurred.

BOARD NOTE: Derived from 40 CFR 141.23(c)(7) (1991).

h) Reduction of quarterly monitoring.

1) The Agency shall grant a SEP pursuant to Section 611.110 that reduces the monitoring frequency to that specified by subsection (a) above if it determines that the sampling point is reliably and consistently below the MCL.

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

A) For a GWS: two quarterly samples.

B) For an SWS or mixed system: four quarterly samples.

3) In issuing the 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 for any contaminant pursuant to subsection (g) above if it violates the MCL specified by Section 611.609 for that contaminant.

BOARD NOTE: Derived from 40 CFR 141.23(c)(8) (1991).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

Section 611.609 Averaging

Compliance with the MCLs of Sections 611.300 or 611.301 (as appropriate) must be determined based on the analytical result(s) obtained at each sampling point.

a) For suppliers that monitor at a frequency greater than annual, compliance with the MCLs for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, ~~and~~nickel, selenium, and thallium is determined by a running annual average at each sampling point.

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

  2) If any one sample would cause the annual average to be exceeded, then the supplier is out of compliance immediately.

  3) Any sample below the method detection limit must be calculated at zero for the purpose of determining the annual average.

  BOARD NOTE: The "method detection limit" is different from the "detection limit", as set forth in Section 611.600. The "method detection limit" is the level of contaminant that can be determined by a particular method with a 95 percent degree of confidence, as determined by the method outlined in 40 CFR 136, appendix B, incorporated by reference at Section 611.102.

b) For suppliers that monitor annually or less frequently, compliance with the MCLs for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, ~~and~~nickel, selenium, and thallium is determined by the level of the contaminant at any sampling point. If a confirmation sample is taken, the determination of compliance will be based on the average of the two samples.

c) Compliance with the MCLs for nitrate and nitrite is determined based on one sample if the levels of these contaminants are below the MCLs. If the levels of nitrate or nitrite exceed the MCLs in the initial sample, Section 611.606 requires confirmation sampling, and compliance is determined based on the average of the initial and confirmation samples.

d) 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 give the public notice required by Subpart T only to persons served by that portion of the distribution system not in compliance.

BOARD NOTE: Derived from 40 CFR 141.23(i) (1991), as amended at 57 Fed. Reg. 31839 (July 17, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ _______________)

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 antimony, asbestos, beryllium, barium, cadmium, chromium, cyanide, mercury, nickel, nitrate, nitrite, ~~and~~ selenium, and thallium pursuant to Sections 611.600 through 611.604 must be conducted using the following methods. For approved analytical techniques for metals and selenium, the technique applicable to total metals must be used. For methods marked with an asterisk (*), the procedure of subsection (f) below must be used for preservation, measurement of turbidity, and digestion.

1) Antimony:

A) Atomic absorption, furnace technique*:

i) USEPA Inorganic Methods: Method 204.2, or

ii) Standard Methods: Method 3113;

B) Atomic absorption, platform furnace technique*: USEPA Environmental Metals Methods: Method 220.9;

C) Inductively-coupled plasma-Mass spectrometry*: USEPA Environmental Metals Methods: Method 200.8; or

D) Atomic absorption, gaseous hydride technique, using the digestion technique set forth in the method: ASTM Method D3697-87.

~~1~~2) Asbestos: Transmission electron microscopy~~,~~: USEPA Asbestos Methods.

~~2~~3) Barium:

- A) Atomic absorption, furnace technique*:
  - i) USEPA Inorganic Methods: Method 208.2, or
  - ii) Standard Methods: Method ~~304~~3113B;
- B) Atomic absorption, direct aspiration technique*:
  - i) USEPA Inorganic Methods: Method 208.1, or
  - ii) Standard Methods: Method ~~303C~~3111D; or
- C) Inductively-coupled plasma arc furnace~~,~~*:
  - i) ~~Inductively Coupled Plasma Method~~USEPA Environmental Metals Methods Method 200.7.~~, as supplemented by Method 200.7A~~, or
  - ii) Standard Methods: Method 3120.

4) Beryllium:

- A) Atomic absorption, furnace technique*:
  - i) USEPA Inorganic Methods: Method 210.2,
  - ii) ASTM Method D3645-84B, or
  - iii) Standard Methods: Method 3113;
- B) Atomic absorption, platform furnace technique*: USEPA Environmental Metals Methods: Method 200.9;
- C) Inductively-coupled plasma arc furnace*:
  - i) USEPA Environmental Metals Methods: Method 200.7, or
  - ii) Standard Methods: Method 3120; or

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

~~3~~5) Cadmium:

A) Atomic absorption, furnace technique*:

i) USEPA Inorganic Methods: Method 213.2, or

ii) Standard Methods: Method ~~304~~3113B; or

B) Inductively-coupled plasma arc furnace~~,~~*: ~~Inductively Coupled Plasma Method~~USEPA Environmental Metals Methods*, Method 200.7~~, as supplemented by Method 200.7~~A.

~~4~~6) Chromium:

A) Atomic absorption, furnace technique*:

i) USEPA Inorganic Methods: Method 218.2, or

ii) Standard Methods: Method ~~304 (The addition of 1 mL of 30% hydrogen peroxide to each 100 mL of standards and samples is required before analysis.)~~3113B; or

B) Inductively-coupled plasma arc furnace~~,~~*:

i) ~~Inductively Coupled Plasma Method~~USEPA Environmental Metals Methods: Method 200.7.~~, as supplemented by Method 200.7~~A, or

ii) Standard Methods: Method 3120.

7) Cyanide:

A) Distillation, spectrophotometric:

i) USEPA Inorganic Methods: Method 335.2,

ii) ASTM Method D2036-89A,

iii) Standard Methods: Method 4500-CN D, or

iv) USGS Methods: Method I-3300-85;

B) Automated distillation, spectrophotometric:

i) USEPA Inorganic Methods: Method 335.3, or

ii) Standard Methods: Method 4500-CN E;

C) Distillation, selective electrode:

i) ASTM Method D2036-89A, or

ii) Standard Methods: Method 4500-CN F; or

D) Distillation, amenable, spectrophotometric:

i) USEPA Inorganic Methods: Method 335.1,

ii) ASTM Method D2036-89B, or

iii) Standard Methods: Method 4500-CN G.

~~5~~8) Mercury:

A) Manual cold vapor technique, using the digestion technique set forth in the method:

i) USEPA Inorganic Methods: Method 245.1,

ii) ASTM D3223-86, or

iii) Standard Methods: Method ~~303F~~3112B; or

B) Automated cold vapor technique, using the digestion technique set forth in the method: USEPA Inorganic Methods: Method 245.2.

9) Nickel:

A) Atomic absorption, furnace technique*:

i) USEPA Inorganic Methods: Method 249.2, or

ii) Standard Methods: Method 3113;

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

C) Atomic absorption, direct aspiration technique*:

  i) USEPA Inorganic Methods: Method 249.1, or

  ii) Standard Methods: Method 3111B;

D) Inductively-coupled plasma*:

  i) USEPA Environmental Metals Methods: Method 200.7, or

  ii) Standard Methods: Method 3120; or

E) Inductively-coupled plasma-Mass spectrometry*: USEPA Environmental Metals Methods: Method 200.8.

~~6~~10) Nitrate:

A) Manual cadmium reduction:

  i) USEPA Inorganic Methods: Method 353.3,

  ii) ASTM D3867-90, or

  iii) Standard Methods: Method ~~418C~~4500-NO_3 E;

B) Automated hydrazine reduction: USEPA Inorganic Methods: Method 353.1;

C) Automated cadmium reduction:

  i) USEPA Inorganic Methods: Method 353.2,

  ii) ASTM D3867-90, or

  iii) Standard Methods: Method ~~418C~~4500-NO_3 F;

D) Ion selective electrode: WeWWG/5880, available from Orion Research; or

E) Ion chromatography:

i) USEPA ~~Inorganic~~Ion Chromatography ~~Methods:~~ Method 300.0, or

ii) B-1011, available from Millipore Corporation.

~~7~~11) Nitrite:

A) Spectrophotometric: USEPA Inorganic Methods: Method 354.1;

B) Automated cadmium reduction:

i) USEPA Inorganic Methods: Method 353.2,

ii) ASTM D3867-90, or

iii) Standard Methods: Method ~~418C~~4500-NO_3 F;

C) Manual cadmium reduction:

i) USEPA Inorganic Methods: Method 353.3,

ii) ASTM D3867-90, or

iii) Standard Methods: Method ~~418C~~4500-NO_3 E.

D) Ion chromatography:

i) USEPA ~~Inorganic~~Ion Chromatography ~~Methods:~~ Method 300.0, or

ii) Method B-1011, available from Millipore Corporation.

~~8~~12) Selenium:

A) Atomic absorption, gaseous hydride, using the digestion technique set forth in the method:

i) ASTM D3859-8~~8~~4A, or

ii) Standard Methods: Method 3114B; or

B) Atomic absorption, graphite furnace

technique*, adding 2mL of 30% hydrogen peroxide (H_2O_2) and an appropriate concentration of nickel nitrate hexahydrate ($NiNO_2 \cdot 6H_2O$) to the samples as a matrix modifier:

i) USEPA Inorganic Methods*: Method 270.2,

ii) ASTM D3859-88B, or

iii) Standard Methods: Method ~~304~~3113B ~~(Prior to dilution of the selenium calibration standard, add 2 mL of 30% hydrogen peroxide for each 100 mL of standard.)~~.

13) Thallium:

A) Atomic absorption, furnace technique, using the digestion technique set forth in the method*:

i) USEPA Inorganic Methods: Method 279.2, or

ii) Standard Methods: Method 3113;

B) Atomic absorption platform furnace technique, using the digestion technique set forth in the method: USEPA Environmental Metals Methods*: Method 200.9; or

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

BOARD NOTE: Derived from 40 CFR 141.23(k)(1) (1992) and 40 CFR 141.23 (k)(4), as added at 57 Fed. Reg. 31839-40 (July 17, 1992). In promulgating the Phase V rules, USEPA creates a new table of analytical methods at 40 CFR 141.23(k)(4) that would duplicate the methods set forth at 40 CFR 141.23(k)(1) except that USEPA updated and revised several of the methods. The Board has combined the two federal tables, using the version of each method set forth in the Phase V rules where the methods set forth conflict.

b) Arsenic. Analyses for arsenic must be conducted using one of the following methods:

  1) Atomic absorption, furnace technique: USEPA Inorganic Methods: Method 206.2;

  2) Atomic absorption, gaseous hydride:

    A) USEPA Inorganic Methods: Method 206.3,

    B) ASTM D2972-88B,

    C) Standard Methods:

      i) Method 307A (referencing Methods 303E and 304), or

      ii) Method 307B

    D) USGS Methods: I-1062-85;

  3) Spectrophotometric, silver diethyldithiocarbamate:

    A) USEPA Inorganic Methods: Method 206.4,

    B) ASTM D~~-~~2972-88A, or

    C) Standard Methods: Method 307B; or

  4) Inductively-coupled plasma arc furnace, ~~Inductively Coupled Plasma Method,~~ Method 200.7, as supplemented by ~~Method~~appendix 200.7A.

  BOARD NOTE: Derived from 40 CFR 141.23(k)(2) (1992).

c) Fluoride. Analyses for fluoride must be conducted using one of the following methods:

  1) Colorimetric SPADNS, with distillation:

    A) USEPA Inorganic Methods: Method 340.1,

    B) ASTM D1179-72A, or

    C) Standard Methods: Methods 413A and 413C;

    BOARD NOTE: 40 CFR 141.23(k)(3) cites methods "43 A and C", an obvious error that the Board has corrected to "413A and 413C".

2) Potentiometric, ion selective electrode:

   A) USEPA Inorganic Methods: Method 340.2,

   B) ASTM D1179-72B, or

   C) Standard Methods: Method 413B;

3) Automated Alizarin fluoride blue, with distillation (complexone):

   A) USEPA Inorganic Methods: Method 340.3,

   B) Standard Methods: Method 413E, or

   C) Technicon Methods: Method 129-71W; or

4) Automated ion selective electrode: Technicon Methods, Method 380-75WE.

   BOARD NOTE: Derived from 40 CFR 141.23(k)(3) (1992).

d) Sample collection for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, ~~and~~ 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. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

      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.

~~1~~2) Asbestos:

A) Preservative: Cool to 4° C.

B) Plastic or glass (hard or soft).

~~2~~3) Barium:

A) Preservative: Concentrated nitric acid to pH less than 2. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

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. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

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.

~~3~~5) Cadmium:

A) Preservative: Concentrated nitric acid to pH less than 2. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

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~~6) Chromium:

A) Preservative: Concentrated nitric acid to pH less than 2. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

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.

~~5~~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.

~~6~~9) Mercury:

A) Preservative: Concentrated nitric acid to pH less than 2. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

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. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

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~~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 days.

~~8~~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.

~~9~~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.

1~~0~~4) Selenium:

A) Preservative: Concentrated nitric acid to pH less than 2. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

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. If nitric acid cannot be used because of shipping restrictions, the sample may initially be preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with concentrated nitric acid to pH less than 2. At the time of sample analysis, the sample container must be thoroughly rinsed with 1:1 nitric acid; washings must be added to the sample.

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.

BOARD NOTE: Derived from 40 CFR 141.23(k)(4) (1992) as amended and renumbered to 40 CFR 141.23 (k)(5) at 57 Fed. Reg. 31840 (July 17, 1992).

e) 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 ~~approve~~certify laboratories to conduct analyses for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, ~~and~~ selenium, and thallium if the laboratory:

1) Analyzes performance evaluation samples, provided by the Agency pursuant to 35 Ill. Adm. Code 183.125(c), 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.

BOARD NOTE: 40 CFR 141.23(k)(6), as renumbered from paragraph (k)(5) and amended at 40 CFR 31840 (July 17, 1992), actually lists "6#30" as the acceptance limit for antimony. The Board corrected this to "± 30%" based on the discussion at 57 Fed. Reg. 31801.

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

~~B~~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.

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

~~D~~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.

~~E~~H) Fluoride~~,~~: ± 10% at 1 to 10 mg/L.

~~F~~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.

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

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

~~I~~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: Derived from 40 CFR 141.23(k)(5) (1992), as amended and renumbered to 40 CFR 141.23 (k)(6) at 57 Fed. Reg. 31840-41 (July 17, 1992), and the discussion at 57 Fed. Reg. 31809.

f) Sample preservation, turbidity measurement, and digestion. For all analytical methods marked with an asterisk (*) in subsection (a) above, the following must be done:

1) The samples must be preserved with concentrated nitric acid (pH < 2);

1) Turbidity must be measured on the preserved samples immediately prior to analysis; and

2) The sample must be analyzed as follows:

A) Directly for total metals if the turbidity is less than 1 NTU, or

B) After digestion, using the total recoverable technique as defined in the applicable method, if the turbidity is 1 NTU or greater.

BOARD NOTE: Derived from 40 CFR 141.23(k)(4), footnote 6, as added at 57 Fed. Reg. 31840 (July 17, 1992).

(Source: Amended at 17 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 corresponds with 40 CFR 141.23(l)(3) (1992), which requires monitoring for the repealed old MCL for nitrate at a frequency specified by the state. The Board has followed the USEPA lead and repealed that old MCL. This statement maintains structural consistency with USEPA rules

4) This subsection corresponds with 40 CFR 141.23(l)(4) (1992), 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 USEPA rules.

b) If the result of an analysis made under subsection (a) 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) 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) (1992), which pertains to monitoring for the repealed old MCL for nitrate. The Board has followed the USEPA action and repealed that old MCL. This statement maintains structural consistency with USEPA rules.

e) This subsection corresponds with 40 CFR 141.23(p) (1992), 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 USEPA rules.

f) 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) Arsenic:

A) ASTM:

i) Method D2972-88A, or

ii Method D2972-88B;

B) Standard Methods:

i) Method 307A, or

ii) Method 307B;

C) USGS Methods, Method I-1062-85;

D) USEPA Inorganic Methods:

i) Method 206.2, or

ii) Method 206.3; or

E) ICP Method 200.7, as supplemented by appendix 200.7A.

~~2) Barium:~~

~~A) Standard Methods: Method 308;~~

~~B) USEPA Inorganic Methods:~~

~~i) Method 208.1, or~~

~~ii) Method 208.2; or~~

~~C) ICP Method 200.7, as supplemented by appendix 200.7A.~~

~~3~~2) Fluoride: The methods specified in Section 611.611(c) shall apply for the purposes of this Section.

~~4~~3) Cyanide, until the cyanide MCL of Section 611.300 is no longer effective:

A) Standard Methods: Method ~~412D~~4500-CN D, E, F, or G~~, or~~;

B) USEPA Inorganic Methods: Methods 335.1, 335.2~~.~~, or 335.3; or

C) ASTM Methods D2036-89A or B.

~~5~~4) Iron:

A) Standard Methods: Method 303A;

B) USEPA Inorganic Methods:

i) Method 236.1, or

ii) Method 236.2; or

C) ICP Method 200.7, as supplemented by appendix 200.7A.

~~6~~5) Manganese:

A) ASTM: Method D858-84;

B) Standard Methods: Method 303A;

C) USEPA Inorganic Methods:

i) Method 243.1, or

ii) Method 243.2; or

D) ICP Method 200.7, as supplemented by appendix 200.7A.

~~7~~6) Zinc:

A) Standard Methods: Method 303A; or

B) USEPA Inorganic Methods:

i) Method 289.1, or

ii) Method 289.2.

BOARD NOTE: The provisions of s~~ubsections (a) through (f) above apply to additional state requirements. S~~ubsections (a) through (f)(3) above derive~~d~~ from 40 CFR 141.23(l) through (q) (1992). The Board has deleted several analytical methods codified by USEPA at 40 CFR 141.23(q) (formerly 40 CFR 141.23(f)) because the MCLs of 40 CFR 141.11 expired for those contaminants on July 30 and November 30, 1992. Subsection (f)(~~3~~2) above relates to a contaminant for which USEPA specifies a~~n~~ MCL, but for which it repealed the analytical method. Subsections (f)(4) through (f)(~~8~~6) above relate exclusively to additional state requirements. The predecessor to subsections (a) through (e) above were formerly codified as Section 611.601. The predecessor to subsection (f) above was formerly codified as Section 611.606.

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.640 Definitions

The following terms are defined for use in this Subpart only. Additional definitions are located in Section 611.102.

"Old MCL" means an MCL in Section 611.310. These include the MCLs identified as "additional state requirements" and those derived from 40 CFR 141.12, but excluding TTHM. "Old MCLs" includes the Section 611.310 MCLs for the following contaminants:

Aldrin
2,4-D
DDT
Dieldrin
~~Endrin~~
Heptachlor
Heptachlor epoxide

BOARD NOTE: 2,4-D, heptachlor, and heptachlor epoxide are also "Phase II SOCs". The additional state requirements of Section 611.310 impose a more stringent "old MCL" for each of these compounds than that imposed on them as Phase II SOCs by Section 611.311. However, the requirements for sampling and monitoring for these compounds as Phase II SOCs and the consequences of their detection and violation of their revised MCLs is more stringent as Phase II SOCs.

"Phase II SOCs" means:

Alachlor
Atrazine
Carbofuran
Chlordane
Dibromochloropropane
Ethylene dibromide
Heptachlor

Heptachlor epoxide
Lindane
Methoxychlor
Polychlorinated biphenyls
Toxaphene
2,4-D
2,4,5-TP

BOARD NOTE: These are organic contaminants regulated at 40 CFR 141.61(c)(1) through (c)(18) (1992). The MCLs for these contaminants are located at Section 611.311. More stringent MCLs for heptachlor, heptachlor epoxide, and 2,4-D are found as "additional state requirements" in Section 611.310.

"Phase IIB SOCs" means:

Aldicarb
Aldicarb Sulfone
Aldicarb Sulfoxide
Pentachlorophenol

BOARD NOTE: These are organic contaminants regulated at 40 CFR 141.61(c)(1) through (c)(18) (1992). The MCLs for these contaminants are located at Section 611.311. The effectiveness of the Section 611.311 MCLs for aldicarb, aldicarb sulfone, and aldicarb sulfoxide are administratively stayed until the Board takes further administrative action to end this stay. However, suppliers must monitor for these three SOCs pursuant to Section 611.648. See 40 CFR 141.6(g) (1992) and 57 Fed. Reg. 22178 (May 27, 1992).

"Phase V SOCs" means:

Benzo[a]pyrene
Dalapon
Di(2-ethylhexyl)adipate
Di(2-ethylhexyl)phthalate
Dinoseb
Diquat
Endothall
Endrin
Glyphosate
Hexachlorobenzene
Hexachlorocyclopentadiene
Oxamyl
Picloram
Simazine
2,3,7,8-TCDD

BOARD NOTE: These are organic contaminants regulated at 40 CFR 141.61(c)(19) through (c)(33) (1992). The MCLs for these contaminants are located at Section 611.311, and become effective January 17, 1994.

"Phase I VOCs" means:

Benzene
Carbon tetrachloride
p-Dichlorobenzene.
1,2-Dichloroethane
1,1-Dichloroethylene
1,1,1-Trichloroethane
Trichloroethylene
Vinyl chloride

BOARD NOTE: These are the organic contaminants regulated at 40 CFR 141.61(a)(1) through (a)(8) (1992). The MCLs for these contaminants are located at Section 611.311(a).

"Phase II VOCs" means:

o-Dichlorobenzene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
1,2-Dichloropropane
Ethylbenzene
Monochlorobenzene
Styrene
Tetrachloroethylene
Toluene
Xylenes (total)

BOARD NOTE: These are organic contaminants regulated at 40 CFR 141.61(a)(9) through (a)(18) (1992). The MCLs for these contaminants are in Section 611.311(a).

"Phase V VOCs" means:

Dichloromethane
1,2,4-Trichlorobenzene
1,1,2-Trichloroethane

BOARD NOTE: These are the organic contaminants regulated at 40 CFR 141.61(a)(19) through (a)(21) (1992). The MCLs for these contaminants are located at Section 611.311(a) and become effective January 17, 1994.

"Revised MCL" means an MCL in Section 611.311. This term includes MCLs for "Phase I VOCs", "Phase II VOCs", "Phase V VOCs", ~~and~~ "Phase II SOCs", Phase IIB SOCs, and "Phase V SOCs".

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

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

Monitoring of the Phase I, Phase II, and Phase V VOCs ~~and Phase II 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" means 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) (1992). This is a "trigger level" for Phase I, Phase II, and Phase V VOCs ~~and Phase II VOCs~~ inasmuch as it prompts further action. The use of the term "detect" in this 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) 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 (1992). The method detection limit is determined by the procedure set forth in 40 CFR 136, Appendix B. See subsection (t) below.

b) Required sampling. Each supplier shall take a minimum of one sample at each sampling point at the times required in subsection (u) 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, 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) above derived from 40 CFR 141.24(f)(1) through (f)(3) (1992).

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 ~~January 1, 1993~~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 ~~and Phase II VOCs~~ as allowed in subsection (r)(1) below has been completed by December 31, 1992, and the supplier did not detect any of the Phase I VOCs, including vinyl chloride, ~~or~~ Phase II, or Phase V VOCs, then the supplier shall take one sample annually beginning ~~January 1, 1993~~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, ~~or~~ 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) above and which did not detect any of the Phase I VOCs, including vinyl chloride, ~~and~~ 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) 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) above as to 1,2,4-trichlorobenzene.

BOARD NOTE: Derived from 40 CFR 141.24(f)(7) and (f)(10) (1992), as amended at 57 Fed. Reg. 31841 (July 17, 1992), 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) below. The definition of "detect", parenthetically added to the federal counterpart paragraph is in subsection (a) 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) above sought pursuant to subsection (g) above.

i) A SEP issued to a GWS pursuant to subsection (g) above is for a maximum of six years, except that a SEP as to the subsection (d) 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) 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) above and submitted pursuant to subsection (g) above, by taking one sample at each sampling point and reapplying for a SEP pursuant to subsection (g) 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 SWS 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) 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 ~~and Phase II 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) above. Subsection (j) above represents the elements unique to SWSs and mixed systems, and subsection (i) 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, ~~or~~ 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.

A) The Agency shall grant a SEP pursuant to Section 611.110 that allows a supplier to reduce the monitoring frequency to annual 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) 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) above.

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

l) Quarterly monitoring following MCL violations.

1) Suppliers that violate an MCL for one of the Phase I VOCs, including vinyl chloride, ~~or~~ Phase II, or Phase V VOCs, as determined by subsection (o) 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) 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 ~~or Phase II 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) 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 ~~and Phase II 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) Public notice for a supplier out of compliance is governed by Subpart T of this Part.

p) Analyses for the Phase I, Phase II, and Phase V VOCs ~~and Phase II VOCs~~ must be conducted using the following methods. These methods are contained in USEPA Organic Methods, incorporated by reference in Section 611.102:

1) Method 502.1~~,~~: "Volatile Halogenated Organic Chemicals in Water by Purge and Trap Gas Chromatography~~.~~".

2) Method 502.2~~,~~: "Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series~~.~~".

3) Method 503.1~~,~~: "Volatile Aromatic and Unsaturated Organic Compounds in Water by Purge and Trap Gas Chromatography~~.~~".

4) Method 524.1~~,~~: "Measurement of Purgeable Organic Compounds in Water by Purged Column Gas Chromatography/Mass Spectrometry~~.~~".

5) Method 524.2~~,~~: "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry~~.~~".

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

1) To receive conditional approval to conduct analyses for the Phase I VOCs, excluding vinyl chloride, ~~and~~ 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);

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

C) Achieve quantitative results on the analyses performed under subsection (q)(1)(A) 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) 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 conditional approval 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);

B) Achieve quantitative results on the analyses performed under subsection (q)(2)(A) 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) above for Phase I VOCs, excluding vinyl chloride, ~~and~~ 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 ~~January 1, 1993~~in the initial compliance period if it determines that the supplier did not detect any Phase I, ~~VOC or~~ Phase II, or Phase V VOC using existing data allowed pursuant to subsection (r)(1) 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 approved for the analysis of Phase I, ~~VOCs or~~ Phase II, or Phase V VOCs pursuant to subsection (q)(1) or (q)(2) 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 Phase II VOCs~~; and,

2) Achieve an MDL for each Phase I, ~~VOC and~~ 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) (1992), as amended at 57 Fed. Reg. 31841 (July 17, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

Section 611.648 Phase II, Phase IIB, and Phase V Synthetic

Organic Contaminants

Analysis of the Phase II, Phase IIB, and Phase V SOCs for the purposes of determining compliance with the MCL must be conducted as follows:

a) Definitions. As used in this Section:

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

"Detection limit" means the level of the contaminant of interest that is specified in subsection (r) below.

BOARD NOTE: This is a "trigger level" for Phase II, Phase IIB, and Phase V SOCs inasmuch as it prompts further action. The use of the term "detect" or "detection" in this section is not intended to include any analytical capability of quantifying lower levels of any contaminant, or the "method detection limit".

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

BOARD NOTE: USEPA stayed the effective date of the MCLs for aldicarb, aldicarb sulfone, and aldicarb sulfoxide at 57 Fed. Reg. 22178 (May 27, 1991). Section 611.311(c) includes this stay. However, despite the stay of the effectiveness of the MCLs for these three SOCs, suppliers must monitor for them.

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, 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) above derived from 40 CFR 141.24(h)(1) through (h)(3) (1992).

d) Monitoring frequency:

1) Each CWS and NTNCWS supplier shall take four consecutive quarterly samples for each of the Phase II, Phase IIB, and Phase V SOCs during each compliance period, beginning in the three-year compliance period starting ~~January 1, 1993~~in the initial compliance period.

2) Suppliers serving more than 3,300 persons that do not detect a contaminant in the initial compliance period, shall take a minimum of two quarterly samples in one year of each subsequent three-year compliance period.

3) Suppliers serving less than or equal to 3,300 persons that do not detect a contaminant in the initial compliance period, shall take a minimum of one sample during each subsequent three-year compliance period.

e) Reduction to annual monitoring frequency. A CWS or NTNCWS supplier may apply to the Agency for a SEP that releases it from the requirements of subsection (d) above. A SEP from the requirement of subsection (d) above shall last for only a single three-year compliance period.

f) Vulnerability Assessment. The Agency shall grant a SEP from the requirements of subsection (d) above based on consideration of the factors set forth at Section 611.110(e).

g) If one of the Phase II, Phase IIB, or Phase V SOCs is detected in any sample, then:

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

2) Annual monitoring.

A) A supplier may request that the Agency grant a SEP pursuant to Section 610.110 that reduces the monitoring frequency to annual.

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

i) For a GWS, two quarterly samples.

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

C) The Agency shall grant a SEP that allows annual monitoring at a sampling point if it determines that the sampling point is reliably and consistently below the MCL.

D) In issuing the 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 (g)(1) above if it detects any Phase II SOC.

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

4) Suppliers that have three consecutive annual samples with no detection of a contaminant at a sampling point may apply to the Agency for a SEP with respect to that point, as specified in subsections (e) and (f) above.

5) Monitoring for related contaminants.

A) If monitoring results in detection of one or more of the related contaminants listed in subsection (g)(5)(B) below, subsequent monitoring shall analyze for all the related compounds in the respective group.

B) Related contaminants:

i) first group:

aldicarb
aldicarb sulfone
aldicarb sulfoxide

ii) second group:

heptachlor
heptachlor epoxide,

h) Quarterly monitoring following MCL violations.

1) Suppliers that violate an MCL for one of the Phase II, Phase IIB, or Phase V SOCs, as determined by subsection (k) 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) A supplier may request that the Agency grant a SEP pursuant to Section 611.110 that reduces the monitoring frequency to annual.

B) A request for a SEP must include, at a minimum, the results from four quarterly samples.

C) The Agency shall grant a SEP that allows annual monitoring at a sampling point if it determines that the sampling point is reliably and consistently below the MCL.

D) In issuing the 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 (h)(1) above if it detects any Phase II SOC.

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

i) Confirmation samples.

1) If any of the Phase II, Phase IIB, or Phase V SOCs are detected in a 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 (k) 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.

j) This subsection corresponds with 40 CFR 141.24(h)(10), an optional USEPA provision relating to compositing of samples that USEPA does not require for state programs. This statement maintains structural consistency with USEPA rules.

k) Compliance with the MCLs for the Phase II, Phase IIB, and Phase V SOCs shall be determined based on the analytical results obtained at each sampling point.

1) For suppliers that are conducting 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 be exceeded, then the supplier is out of compliance immediately.

C) Any samples below the detection limit must be calculated 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) Public notice for a supplier out of compliance is governed by Subpart T of this Part.

BOARD NOTE: Derived from 40 CFR 141.24(h)(11) (1992).

l) Analysis for Phase II, Phase IIB, and Phase V SOCs must be conducted using the following methods. These methods, except for USEPA Dioxin and Furan Method 1613, are contained in USEPA Organic Methods~~,~~. All methods are incorporated by reference in Section 611.102.

1) Method 504~~,~~: "1,2-Dibromoethane (EDB) and 1,2-Dibromo-3-chloropropane (DBCP) in Water by Microextraction and Gas Chromatography~~.~~". Method 504 can be used to measure 1,2-Dibromo-3-chloropropane (dibromochloropropane or DBCP) and 1,2-Dibromoethane (ethylene dibromide or EDB).

2) Method 505~~,~~: "Analysis of Organohalide Pesticides and Commercial Polychlorinated Biphenyl Products (Aroclors) in Water by Microextraction and Gas Chromatography~~.~~". Method 505 can be used to measure alachlor, atrazine, chlordane, DDT, dieldrin, endrin, heptachlor, heptachlor epoxide, hexachlorobenzene, hexachlorocyclopentadiene, lindane, methoxychlor, simazine, and toxaphene. Method 505 can be used as a screen for PCBs.

3) Method 507~~,~~: "Determination of Nitrogen- and Phosphorus-Containing Pesticides in Ground Water by Gas Chromatography with a Nitrogen-Phosphorus Detector~~.~~". Method 507 can be used to measure alachlor, ~~and~~ atrazine, and simazine.

4) Method 508~~,~~: "Determination of Chlorinated Pesticides in Water by Gas Chromatography with an Electron Capture Detector~~.~~". Method 508 can be used to measure chlordane, DDT, dieldrin, endrin, heptachlor, heptachlor epoxide, hexachlorobenzene, lindane, methoxychlor, and toxaphene. Method 508 can be used as a screen for PCBs.

5) Method 508A~~,~~: "Screening for Polychlorinated Biphenyls by Perchlorination and Gas Chromatography~~.~~". Method 508A is used to quantitate PCBs as decachlorobiphenyl if detected in Methods 505 or 508.

6) Method 515.1, revision 5.0 (May, 1991)~~,~~: "Determination of Chlorinated Acids in Water by Gas Chromatography with an Electron Capture Detector~~.~~". Method 515.1 can be used to measure 2,4-D, dalapon, dinoseb, pentachlorophenol, picloram, and 2,4,5-TP (Silvex)~~ and pentachlorophenol~~.

7) Method 525.1, revision 3.0 (May, 1991)~~,~~: "Determination of Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary Column Gas Chromatography/Mass Spectrometry~~.~~". Method 525 can be used to measure alachlor, atrazine, chlordane, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, endrin, heptachlor, heptachlor epoxide, hexachlorobenzene, hexachlorocyclopentadiene, lindane, methoxychlor, and pentachlorophenol polynuclear aromatic hydrocarbons, simazine, and toxaphene.

8) Method 531.1~~,~~: "Measurement of N-Methyl Carbamoyloximes and N-Methyl Carbamates in Water by Direct Aqueous Injection HPLC with Post-Column Derivatization~~.~~". Method 531.1 can be used to measure aldicarb, aldicarb sulfoxide, aldicarb sulfone, and carbofuran, and oxamyl.

9) USEPA Dioxin and Furan Method 1613: "Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution". Method 1613 can be used to measure 2,3,7,8-TCDD (dioxin).

10) Method 547: "Analysis of Glyphosate in Drinking Water by Direct Aqueous Injection HPLC with Post-Column Derivitization", available from USEPA-OST. Method 547 can be used to measure glyphosate.

11) Method 548: "Determination of Endothall in Aqueous Samples". Method 548 can be used to measure endothall.

12) Method 549: "Determination of Diquat and Paraquat in Drinking Water by High Performance Liquid Chromatography with Ultraviolet

Detection". Method 549 can be used to measure diquat.

13) Method 550: "Determination of Polycyclic Aromatic Hydorcarbons in Drinking Water by Liquid-Liquid Extraction and HPLC with Coupled Ultraviolet and Fluorescence Detection". Method 550 can be used to measure benzo(a)pyrene and other polynuclear aromatic hydrocarbons.

14) Method 550.1: "Determination of Polycyclic Aromatic Hydrocarbons in Drinking Water by Liquid-Solid Extraction and HPLC with Coupled Ultraviolet and Fluorescence Detection". Method 550 can be used to measure benzo(a)pyrene and other polynuclear aromatic hydrocarbons.

m) Analysis for PCBs must be conducted as follows:

1) Each supplier that monitors for PCBs shall analyze each sample using either USEPA Organic Methods, Method 505 or Method 508.

2) If PCBs are detected in any sample analyzed using USEPA Organic Methods, Methods 505 or 508, the supplier shall reanalyze the sample using Method 508A to quantitate the individual Aroclors (as decachlorobiphenyl).

3) Compliance with the PCB MCL must be determined based upon the quantitative results of analyses using USEPA Organic Methods, Method 508A.

n) Use of existing data.

1) The Agency shall allow the use of data collected after January 1, 1990 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 ~~January 1, 1993~~in the initial compliance period if it determines that the supplier did not detect any Phase I VOC or Phase II VOC using existing data allowed pursuant to subsection (n)(1) above.

o) The Agency shall issue a SEP that increases the number of sampling points or the frequency of monitoring if it determines that this is necessary to detect variations within the PWS due to such factors as fluctuations in contaminant concentration due to seasonal use or changes in the water source.

BOARD NOTE: At 40 CFR 141.24(h)(15), USEPA uses the stated factors as non-limiting examples of circumstances that make additional monitoring necessary.

p) This subsection corresponds with 40 CFR 141.24(h)(16), a USEPA provision that the Board has not adopted because it reserves enforcement authority to the state and would serve no useful function as part of the state's rules. This statement maintains structural consistency with USEPA rules.

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

r) "Detection" means greater than or equal to the following concentrations for each contaminant:

1) for PCBs (Aroclors):

Aroclor	Detection Limit (mg/L)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

2) for other Phase II, Phase IIB, and Phase V SOCs:

Contaminant	Detection Limit (mg/L)
Alachlor	0.0002
Aldicarb	0.0005
Aldicarb sulfoxide	0.0005
Aldicarb sulfone	0.0008
Atrazine	0.0001
Benzo(a)pyrene	0.00002
Carbofuran	0.0009
Chlordane	0.0002
2,4-D	0.0001
Dalapon	0.001
Dibromochloropropane (DBCP)	0.00002

~~2,4-D~~	~~0.0001~~
Di(2-ethylhexyl)adipate	0.0006
Di(2-ethylhexyl)phthalate	0.0006
Dinoseb	0.0002
Diquat	0.0004
Endothall	0.009
Endrin	0.00001
Ethylene dibromide (EDB)	0.00001
Glyphosate	0.006
Heptachlor	0.00004
Heptachlor epoxide	0.00002
Hexachlorobenzene	0.0001
Hexachlorocyclopentadiene	0.0001
Lindane	0.00002
Methoxychlor	0.0001
Oxamyl	0.002
Picloram	0.0001
Polychlorinated biphenyls (PCBs) (as decachlorobiphenyl)	0.0001
Pentachlorophenol	0.00004
Simazine	0.00007
Toxaphene	0.001
2,3,7,8-TCDD (dioxin)	0.000000005
2,4,5-TP (Silvex)	0.0002

~~BOARD NOTE: Derived from 40 CFR 141.24(h) (1992).~~

s) Laboratory Certification.

1) Analyses under this Section must only be conducted by laboratories that have received approval by USEPA or the Agency according to the following conditions.

2) To receive certification to conduct analyses for the Phase II, Phase IIB, and Phase V SOCs the laboratory must:

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

B) Achieve quantitative results on the analyses performed under subsection (s)(2)(A) above that are within the acceptance limits set forth in subsection (s)(2)(C) above.

C) Acceptance limits:

SOC	Acceptance Limits
Alachlor	± 45%
Aldicarb	2 standard deviations
Aldicarb sulfone	2 standard deviations
Aldicarb sulfoxide	2 standard deviations
Atrazine	± 45%
Benzo(a)pyrene	2 standard deviations
Carbofuran	± 45%
Chlordane	± 45%
Dalapon	2 standard deviations
Di(2-ethylhexyl)adipate	2 standard deviations
Di(2-ethylhexyl)phthalate	2 standard deviations
Dinoseb	2 standard deviations
Diquat	2 standard deviations
Endothall	2 standard deviations
Endrin	± 30%
Glyphosate	2 standard deviations
Dibromochloropropane (DBCP)	± 40%
Ethylene dibromide (EDB)	± 40%
Heptachlor	± 45%
Heptachlor epoxide	± 45%
Hexachlorobenzene	2 standard deviations
Hexachlorocyclopentadiene	2 standard deviations
Lindane	± 45%
Methoxychlor	± 45%
Oxamyl	2 standard deviations
PCBs (as Decachlorobiphenyl)	0-200%
Pentachlorophenol	± 50%
Picloram	2 standard deviations
Simazine	2 standard deviations
Toxaphene	± 45%
2,4-D	± 50%
2,3,7,8-TCDD (dioxin)	2 standard deviations
2,4,5-TP (Silvex)	± 50%
~~2,4-D~~	~~± 50%~~

BOARD NOTE: Derived from 40 CFR 141.24(h) (1992), as amended at 57 Fed. Reg. 31842 (July 17, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

Section 611.Appendix A Mandatory Health Effects Information

1) Trichloroethylene. The United States Environmental

Protection Agency (USEPA) sets drinking water standards and has determined that trichloroethylene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. USEPA has set forth the enforceable drinking water standard for trichloroethylene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

2) Carbon tetrachloride. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that carbon tetrachloride is a health concern at certain levels of exposure. This chemical was once a popular household cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. USEPA has set the enforceable drinking water standard for carbon tetrachloride at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

3) 1,2-Dichloroethane. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that 1,2-dichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaning fluid for fats, oils, waxes and resins. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their

lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. USEPA has set the enforceable drinking water standard for 1,2-dichloroethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

4) Vinyl chloride. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that vinyl chloride is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been associated with significantly increased risks of cancer among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. USEPA has set the enforceable drinking water standard for vinyl chloride at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

5) Benzene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that benzene is a health concern at certain levels of exposure. This chemical is used as a solvent and degreaser of metals. It is also a major component of gasoline. Drinking water contamination generally results from leaking underground gasoline and petroleum tanks or improper waste disposal. This chemical has been associated with significantly increased risks of leukemia among certain industrial workers who were exposed to relatively large amounts of this chemical during

their working careers. This chemical has also been shown to This chemical has been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. USEPA has set the enforceable drinking water standard for benzene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

6) 1,1-Dichloroethylene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that 1,1-dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. USEPA has set the enforceable drinking water standard for 1,1-dichloroethylene at 0.007 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

7) Para-dichlorobenzene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that para-dichlorobenzene is a health concern at certain levels of exposure. This chemical is a component of deodorizers, moth balls and pesticides. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may

cause adverse health effects in humans who are exposed at lower levels over long periods of time. USEPA has set the enforceable drinking water standard for para-dichlorobenzene at 0.075 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

8) 1,1,1-Trichloroethane. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that 1,1,1-trichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaner and degreaser of metals. It generally gets into drinking water by improper waste disposal. This chemical has been shown to damage the liver, nervous system and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the liver, nervous system and circulatory system. Chemicals which cause adverse effects among exposed industrial workers and in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. USEPA has set the enforceable drinking water standard for 1,1,1-trichloroethane at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

9) Fluoride. The U.S. Environmental Protection Agency requires that we send you this notice on the level of fluoride in your drinking water. The drinking water in your community has a fluoride concentration of   milligrams per liter (mg/L).

Federal regulations require that fluoride, which occurs naturally in your water supply, not exceed a concentration of 4.0 mg/L in drinking water. This is an enforceable standard called a Maximum Contaminant Level (MCL), and it has been established to protect the public health. Exposure to drinking water levels above 4.0 mg/L for many years may result in some cases of crippling skeletal fluorosis, which is a serious bone disorder.

Federal law also requires that we notify you when monitoring indicates that the fluoride in your drinking water exceeds 2.0 mg/L. This is intended to alert families about dental problems that might affect children under nine years of age. The fluoride concentration of your water exceeds this federal guideline.

Fluoride in children's drinking water at levels of approximately 1 mg/L reduces the number of dental cavities. However, some children exposed to levels of fluoride greater than about 2.0 mg/L may develop dental fluorosis. Dental fluorosis, in its moderate and severe forms, is a brown staining and/or pitting of the permanent teeth.

Because dental fluorosis occurs only when developing teeth (before they erupt from the gums) are exposed to elevated fluoride levels, households without children are not expected to be affected by this level of fluoride. Families with children under the age of nine are encouraged to seek other sources of drinking water for their children to avoid the possibility of staining and pitting.

Your water supplier can lower the concentration of fluoride in your water so that you will still receive the benefits of cavity prevention while the possibility of stained and pitted teeth is minimized. Removal of fluoride may increase your water costs. Treatment systems are also commercially available for home use. Information on such systems is available at the address given below. Low fluoride bottled drinking water that would meet all standards is also commercially available.

For further information, contact   at your water system.

BOARD NOTE: Derived from 40 CFR 141.32(e)(9) and 143.5 (1992).

10) Microbiological contaminants (for use when there is a violation of the treatment technique requirements for filtration and disinfection in Subpart B of this Part). The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that the presence of microbiological contaminants are a health concern at certain levels of exposure. If water is inadequately treated,

microbiological contaminants in that water may cause disease. Disease symptoms may include diarrhea, cramps, nausea and possibly jaundice and any associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. USEPA has set enforceable requirements for treating drinking water to reduce the risk of these adverse health effects. Treatment such as filtering and disinfecting the water removes or destroys microbiological contaminants. Drinking water which is treated to meet USEPA requirements is associated with little to none of this risk and should be considered safe.

11) Total coliforms. (To be used when there is a violation of Section 611.325(a) and not a violation of Section 611.325(b)). The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment or the pipes which distribute the water and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. USEPA has set an enforceable drinking water standard for total coliforms to reduce the risk of these adverse health effects. Under this standard, no more than 5.0 percent of the samples collected during a month can contain these bacteria, except that systems collecting fewer than 40 samples/month that have one total coliform-positive sample per month are not violating the standard. Drinking water which meets this standard is usually not associated with a health risk from disease-causing bacteria and should be considered safe.

12) Fecal Coliforms/E. coli. (To be used when there is a violation of Section 611.325(b) or both Section 611.325(a) and (b)). The United States Environmental Protection Agency (USEPA) sets

drinking water standards and has determined that the presence of fecal coliforms or E. coli is a serious health concern. Fecal coliforms and E. coli are generally not harmful themselves, but their presence in drinking water is serious because they usually are associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes which distribute the water and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea and possibly jaundice, and associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. USEPA has set an enforceable drinking water standard for fecal coliforms and E. coli to reduce the risk of these adverse health effects. Under this standard all drinking water samples must be free of these bacteria. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe. State and local health authorities recommend that consumers take the following precautions: [To be inserted by the public water system, according to instruction from State or local authorities].

13) Lead. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that lead is a health concern at certain exposure levels. Materials that contain lead have frequently been used in the construction of water supply distribution systems, and plumbing systems in private homes and other buildings. The most commonly found materials include service lines, pipes, brass and bronze fixtures, and solders and fluxes. Lead in these materials can contaminate drinking water as a result of the corrosion that takes place when water comes into contact with those materials. Lead can cause a variety of adverse health effects in humans. At relatively low levels of exposure, these effects may include interference with red blood cell chemistry, delays in normal physical and mental development in babies and young children, slight deficits in the attention span, hearing, and learning abilities of children, and slight increases in the blood pressure of some adults. USEPA's national primary drinking water regulation requires all public water systems to optimize corrosion control to minimize lead

contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have lead concentrations below 15 parts per billion (ppb) in more than 90% of tap water samples (the USEPA "action level") have optimized their corrosion control treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove lead in source water is needed. Any water system that continues to exceed the action level after installation of corrosion control and/or source water treatment must eventually replace all lead service lines contributing in excess of 15 ppb of lead to drinking water. Any water system that exceeds the action level must also undertake a public education program to inform consumers of ways they can reduce their exposure to potentially high levels of lead in drinking water.

14) Copper. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that copper is a health concern at certain exposure levels. Copper, a reddish-brown metal, is often used to plumb residential and commercial structures that are connected to water distribution systems. Copper contaminating drinking water as a corrosion by-product occurs as the result of the corrosion of copper pipes that remain in contact with water for a prolonged period of time. Copper is an essential nutrient, but at high doses it has been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. Persons with Wilson's disease may be at a higher risk of health effects due to copper than the general public. USEPA's national primary drinking water regulation requires all public water systems to install optimal corrosion control to minimize copper contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have copper concentrations below 1.3 parts per million (ppm) in more than 90% of tap water samples (the USEPA "action level") are not required to install or improve their treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove copper in source water is needed.

15) Asbestos. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that asbestos fibers greater than 10 micrometers in length are a health

concern at certain levels of exposure. Asbestos is a naturally occurring mineral. Most asbestos fibers in drinking water are less than 10 micrometers in length and occur in drinking water from natural sources and from corroded asbestos-cement pipes in the distribution system. The major uses of asbestos were in the production of cements, floor tiles, paper products, paint, and caulking; in transportation-related applications; and in the production of textiles and plastics. Asbestos was once a popular insulating and fire retardant material. Inhalation studies have shown that various forms of asbestos have produced lung tumors in laboratory animals. The available information on the risk of developing gastrointestinal tract cancer associated with the ingestion of asbestos from drinking water is limited. Ingestion of intermediate-range chrysolite asbestos fibers greater than 10 micrometers in length is associated with causing benign tumors in male rats. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for asbestos at 7 million long fibers per liter to reduce the potential risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the USEPA standard is associated with little to none of this risk and should be considered safe with respect to asbestos.

16) Barium. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that barium is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in some aquifers that serve as sources of groundwater. It is also used in oil and gas drilling muds, automotive paints, bricks, tiles, and jet fuels. It generally gets into drinking water after dissolving from naturally occurring minerals in the ground. This chemical may damage the heart and vascular system, and is associated with high blood pressure in laboratory animals such as rats exposed to high levels during their lifetimes. In humans, USEPA believes that effects from barium on blood pressure should not occur below 2 parts per million (ppm) in drinking water. USEPA has set the drinking water standard for barium at 2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with

little to none of this risk and is considered safe with respect to barium.

17) Cadmium. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that cadmium is a health concern at certain levels of exposure. Food and the smoking of tobacco are common sources of general exposure. This inorganic metal is a contaminant in the metals used to galvanize pipe. It generally gets into water by corrosion of galvanized pipes or by improper waste disposal. This chemical has been shown to damage the kidney in animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the kidney. USEPA has set the drinking water standard for cadmium at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to cadmium.

18) Chromium. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that chromium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in the ground and is often used in the electroplating of metals. It generally gets into water from runoff from old mining operations and improper waste disposal from plating operations. This chemical has been shown to damage the kidney, nervous system, and the circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels. Some humans who were exposed to high levels of this chemical suffered liver and kidney damage, dermatitis and respiratory problems. USEPA has set the drinking water standard for chromium at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to chromium.

19) Mercury. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that mercury is a health concern at certain levels of exposure. This inorganic metal is used in electrical equipment and some water pumps. It usually gets into water as a result of improper

waste disposal. This chemical has been shown to damage the kidney of laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. USEPA has set the drinking water standard for mercury at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to mercury.

20) Nitrate. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that nitrate poses an acute health concern at certain levels of exposure. Nitrate is used in fertilizer and is found in sewage and wastes from human and/or farm animals and generally gets into drinking water from those activities. Excessive levels of nitrate in drinking water have caused serious illness and sometimes death in infants under six months of age. The serious illness in infants is caused because nitrate is converted to nitrite in the body. Nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly in infants. In most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and State health authorities are the best source for information concerning alternate sources of drinking water for infants. USEPA has set the drinking water standard at 10 parts per million (ppm) for nitrate to protect against the risk of these adverse effects. USEPA has also set a drinking water standard for nitrite at 1 ppm. To allow for the fact that the toxicity of nitrate and nitrite are additive. USEPA has also established a standard for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to nitrate.

21) Nitrite. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that nitrite poses an acute health concern at certain levels of exposure. This inorganic chemical is used in fertilizers and is found in sewage and wastes from humans and/or farm

animals and generally gets into drinking water as a result of those activities. While excessive levels of nitrite in drinking water have not been observed, other sources of nitrite have caused serious illness and sometimes death in infants under six months of age. The serious illness in infants is caused because nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly. However, in most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and State health authorities are the best source for information concerning alternate sources of drinking water for infants. USEPA has set the drinking water standard at 1 part per million (ppm) for nitrite to protect against the risk of these adverse effects. USEPA has also set a drinking water standard for nitrate (converted to nitrite in humans) at 10 ppm and for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to nitrite.

22) Selenium. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that selenium is a health concern at certain high levels of exposure. Selenium is also an essential nutrient at low levels of exposure. This inorganic chemical is found naturally in food and soils and is used in electronics, photocopy operations, the manufacture of glass, chemicals, drugs, and as a fungicide and a feed additive. In humans, exposure to high levels of selenium over a long period of time has resulted in a number of adverse health effects, including a loss of feeling and control in the arms and legs. USEPA has set the drinking water standard for selenium at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to selenium.

23) Acrylamide. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that acrylamide is a

health concern at certain levels of exposure. Polymers made from acrylamide are sometimes used to treat water supplies to remove particulate contaminants. Acrylamide has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. Sufficiently large doses of acrylamide are known to cause neurological injury. USEPA has set the drinking water standard for acrylamide using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of acrylamide in the polymer and the amount of the polymer which may be added to drinking water to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to acrylamide.

24) Alachlor. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that alachlor is a health concern at certain levels of exposure. This organic chemical is a widely used pesticide. When soil and climatic conditions are favorable, alachlor may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for alachlor at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to alachlor.

25) Aldicarb. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that aldicarb is a health concern at certain levels of exposure. Aldicarb is a widely used pesticide. Under certain soil and climatic conditions (e.g., sandy soil and high rainfall), aldicarb may leach into groundwater after normal agricultural applications to crops such

as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. USEPA has set the drinking water standard for aldicarb at 0.003 parts per million (ppm) to reduce the risk of adverse health effects. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to aldicarb.

26) Aldicarb sulfoxide. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that aldicarb sulfoxide is a health concern at certain levels of exposure. Aldicarb is a widely used pesticide. Aldicarb sulfoxide in groundwater is primarily a breakdown product of aldicarb. Under certain soil and climatic conditions (e.g., sandy soil and high rainfall), aldicarb sulfoxide may leach into groundwater after normal agricultural applications to crops such as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. USEPA has set the drinking water standard for aldicarb sulfoxide at 0.004 parts per million (ppm) to reduce the risk of adverse health effects. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to aldicarb sulfoxide.

27) Aldicarb sulfone. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that aldicarb sulfone is a health concern at certain levels of exposure. Aldicarb is a widely used pesticide. Aldicarb sulfone in groundwater is primarily a breakdown product of aldicarb. Under certain soil and climatic conditions (e.g., sandy soil and high rainfall), aldicarb sulfone may leach into groundwater after normal agricultural applications to crops such as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. USEPA has set the drinking water standard for aldicarb sulfone at 0.002 parts per million (ppm) to reduce the risk of adverse health effects. Drinking water that meets this standard is associated with little to none of

this risk and is considered safe with respect to aldicarb sulfone.

28) Atrazine. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that atrazine is a health concern at certain levels of exposure. This organic chemical is a herbicide. When soil and climatic conditions are favorable, atrazine may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to affect offspring of rats and the heart of dogs. USEPA has set the drinking water standard for atrazine at 0.003 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to atrazine.

29) Carbofuran. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that carbofuran is a health concern at certain levels of exposure. This organic chemical is a pesticide. When soil and climatic conditions are favorable, carbofuran may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the nervous and reproductive systems of laboratory animals such as rats and mice exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the nervous system. Effects on the nervous system are generally rapidly reversible. USEPA has set the drinking water standard for carbofuran at 0.04 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to carbofuran.

30) Chlordane. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that chlordane is a health concern at certain levels of exposure. This organic chemical is a pesticide used to control termites. Chlordane is not very mobile in soils. It usually gets into drinking water after application near water supply intakes or wells. This chemical has been shown to cause cancer in

laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for chlordane at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to chlordane.

31) Dibromochloropropane (DBCP). The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that DBCP is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, DBCP may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for DBCP at 0.0002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to DBCP.

32) o-Dichlorobenzene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that o-dichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent in the production of pesticides and dyes. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and the blood cells of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, nervous system, and circulatory system. USEPA has set the drinking water standard for o-dichlorobenzene at 0.6 parts per million (ppm) to

protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to o-dichlorobenzene.

33) cis-1,2-Dichloroethylene. The United States Environmental Protection Agency (USEPA) establishes drinking water standards and has determined that cis-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. USEPA has set the drinking water standard for cis-1,2-dichloroethylene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to cis-1,2-dichloroethylene.

34) trans-1,2-Dichloroethylene. The United States Environmental Protection Agency (USEPA) establishes drinking water standards and has determined that trans-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and the circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. USEPA has set the drinking water standard for trans-1,2-dichloroethylene at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to trans-1,2-dichloroethylene.

35) 1,2-Dichloropropane. The United States Environmental Protection Agency (USEPA) sets

drinking water standards and has determined that 1,2-dichloropropane is a health concern at certain levels of exposure. This organic chemical is used as a solvent and pesticide. When soil and climatic conditions are favorable, 1,2-dichloropropane may get into drinking water by runoff into surface water or by leaching into groundwater. It may also get into drinking water through improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for 1,2-dichloropropane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to 1,2-dichloropropane.

36) 2,4-D. This contaminant is subject to a "additional State requirement". The supplier shall give the following notice if the level exceeds the Section 611.311 MCL. If the level exceeds the Section 611.310 MCL, but not that of Section 611.311, the supplier shall give a general notice under Section 611.854.

The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that 2,4-D is a health concern at certain levels of exposure. This organic chemical is used as a herbicide and to control algae in reservoirs. When soil and climatic conditions are favorable, 2,4-D may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. USEPA has set the drinking water standard for 2,4-D at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to 2,4-D.

37) Epichlorohydrin. The United States Environmental

Protection Agency (USEPA) sets drinking water standards and has determined that epichlorohydrin is a health concern at certain levels of exposure. Polymers made from epichlorohydrin are sometimes used in the treatment of water supplies as a flocculent to remove particulates. Epichlorohydrin generally gets into drinking water by improper use of these polymers. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for epichlorohydrin using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of epichlorohydrin in the polymer and the amount of the polymer which may be added to drinking water as a flocculent to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to epichlorohydrin.

38) Ethylbenzene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined ethylbenzene is a health concern at certain levels of exposure. This organic chemical is a major component of gasoline. It generally gets into water by improper waste disposal or leaking gasoline tanks. This chemical has been shown to damage the kidney, liver, and nervous system of laboratory animals such as rats exposed to high levels during their lifetimes. USEPA has set the drinking water standard for ethylbenzene at 0.7 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to ethylbenzene.

39) Ethylene dibromide (EDB). The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that EDB is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, EDB may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in

laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for EDB at 0.00005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to EDB.

40) Heptachlor. This contaminant is subject to a "additional State requirement". The supplier shall give the following notice if the level exceeds the Section 611.311 MCL. If the level exceeds the Section 611.310 MCL, but not that of Section 611.311, the supplier shall give a general notice under Section 611.854.

The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that heptachlor is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standards for heptachlor at 0.0004 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor.

41) Heptachlor epoxide. This contaminant is subject to a "additional State requirement". The supplier shall give the following notice if the level exceeds the Section 611.311 MCL. If the level exceeds the Section 611.310 MCL, but not that of Section 611.311, the supplier shall give a general notice under Section 611.854.

The United States Environmental Protection Agency

(USEPA) sets drinking water standards and has determined that heptachlor epoxide is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor epoxide may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standards for heptachlor epoxide at 0.0002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor epoxide.

42) Lindane. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that lindane is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, lindane may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver, kidney, nervous system, and immune system of laboratory animals such as rats, mice and dogs exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system and circulatory system. USEPA has established the drinking water standard for lindane at 0.0002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to lindane.

43) Methoxychlor. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that methoxychlor is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, methoxychlor may get into drinking water by runoff into surface water or by leaching into groundwater. This

chemical has been shown to damage the liver, kidney, nervous system, and reproductive system of laboratory animals such as rats exposed at high levels during their lifetimes. It has also been shown to produce growth retardation in rats. USEPA has set the drinking water standard for methoxychlor at 0.04 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to methoxychlor.

44) Monochlorobenzene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that monochlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. USEPA has set the drinking water standard for monochlorobenzene at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to monochlorobenzene.

45) Polychlorinated biphenyls (PCBs). The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that polychlorinated biphenyls (PCBs) are a health concern at certain levels of exposure. These organic chemicals were once widely used in electrical transformers and other industrial equipment. They generally get into drinking water by improper waste disposal or leaking electrical industrial equipment. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for PCBs at 0.0005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to PCBs.

46) Pentachlorophenol. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that pentachlorophenol is a health concern at certain levels of exposure. This organic chemical is widely used as a wood preservative, herbicide, disinfectant, and defoliant. It generally gets into drinking water by runoff into surface water or leaching into groundwater. This chemical has been shown to produce adverse reproductive effects and to damage the liver and kidneys of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the liver and kidneys. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for pentachlorophenol at 0.001 parts per million (ppm) to reduce the risk of adverse health effects. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to pentachlorophenol.

47) Styrene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that styrene is a health concern at certain levels of exposure. This organic chemical is commonly used to make plastics and is sometimes a component of resins used for drinking water treatment. Styrene may get into drinking water from improper waste disposal. This chemical has been shown to damage the liver and nervous system in laboratory animals when exposed at high levels during their lifetimes. USEPA has set the drinking water standard for styrene at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to styrene.

48) Tetrachloroethylene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that tetrachloroethylene is a health concern at certain levels of exposure. This organic chemical has been a popular solvent, particularly for dry cleaning. It generally gets into drinking water by improper

waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for tetrachloroethylene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to tetrachloroethylene.

49) Toluene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that toluene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and in the manufacture of gasoline for airplanes. It generally gets into water by improper waste disposal or leaking underground storage tanks. This chemical has been shown to damage the kidney, nervous system, and circulatory system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, kidney and nervous system. USEPA has set the drinking water standard for toluene at 1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to toluene.

50) Toxaphene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that toxaphene is a health concern at certain levels of exposure. This organic chemical was once a pesticide widely used on cotton, corn, soybeans, pineapples and other crops. When soil and climatic conditions are favorable, toxaphene may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for

toxaphene at 0.003 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to toxaphene.

51) 2,4,5-TP. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that 2,4,5-TP is a health concern at certain levels of exposure. This organic chemical is used as a herbicide. When soil and climatic conditions are favorable, 2,4,5-TP may get into drinking water by runoff into surface water or by leaching into groundwater. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the nervous system. USEPA has set the drinking water standard for 2,4,5-TP at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to 2,4,5-TP.

52) Xylenes. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that xylene is a health concern at certain levels of exposure. This organic chemical is used in the manufacture of gasoline for airplanes and as a solvent for pesticides, and as a cleaner and degreaser of metals. It usually gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. USEPA has set the drinking water standard for xylene at 10 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to xylene.

53) Antimony. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that antimony is a health concern at certain levels of exposure. This

inorganic chemical occurs naturally in soils, ground water, and surface water and is often used in the flame retardant industry. It is also used in ceramics and glass, batteries, fireworks, and explosives. It may get into drinking water through natural weathering of rock, industrial production, municipal waste disposal, or manufacturing processes. This chemical has been shown to decrease longevity, and altered blood levels of cholesterol and glucose in laboratory animals such as rats exposed to high levels during their lifetimes. USEPA has set the drinking water standard for antimony at 0.006 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to antimony.

54) Beryllium. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that beryllium is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in soils, ground water, and surface water and is often used in electrical equipment and electrical components. It generally gets into water from runoff from mining operations, discharge from processing plants, and improper waste disposal. Beryllium compounds have been associated with damage to the bones and lungs and induction of cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. There is limited evidence to suggest that beryllium may pose a cancer risk via drinking water exposure. Therefore, USEPA based the health assessment on noncancer effects with and extra uncertainty factor to account for possible carcinogenicity. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for beryllium at 0.004 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to beryllium.

56) Cyanide. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that cyanide is a health concern at certain levels of exposure. This inorganic chemical is used in electroplating, steel processing,

plastics, synthetic fabrics, and fertilizer products. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the spleen, brain, and liver of humans fatally poisoned with cyanide. USEPA has set the drinking water standard for cyanide at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to cyanide.

56) Nickel. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that nickel is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in soils, ground water, and surface water and is often used in electroplating, stainless steel, and alloy products. It generally gets into water from mining and refining operations. This chemical has been shown to damage the heart and liver in laboratory animals when the animals are exposed to high levels over their lifetimes. USEPA has set the drinking water standard at 0.1 parts per million (ppm) for nickel to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to nickel.

57) Thallium. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that thallium is a health concern at certain high levels of exposure. This inorganic chemical occurs naturally in soils, ground water, and surface water and is used in electronics, pharmaceuticals, and the manufacture of glass and alloys. This chemical has been shown to damage the kidney, liver, brain, and intestines of laboratory animals when the animals are exposed to high levels during their lifetimes. USEPA has set the drinking water standard for thallium at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to thallium.

58) Benzo(a)pyrene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that benzo(a)pyrene is a health concern at certain levels of exposure.

Cigarette smoke and charbroiled meats are common sources of general exposure. The major source of benzo(a)pyrene in drinking water is the leaching from coal tar lining and sealants in water storage tanks. This chemical has been shown to cause cancer in animals such as rats and mice when the animals are exposed to high levels. USEPA has set the drinking water standard for benzo(a)pyrene at 0.0002 parts per million (ppm) to protect against the risk of cancer. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to benzo(a)pyrene.

59) Dalapon. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that dalapon is a health concern at certain levels of exposure. This organic chemical is a widely used herbicide. It may get into drinking water after application to control grasses in crops, drainage ditches, and along railroads. This chemical has been associated with damage to the kidney and liver in laboratory animals when the animals are exposed to high levels during their lifetimes. USEPA has set the drinking water standard for dalapon at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to dalapon.

60) Dichloromethane. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that dichloromethane (methylene chloride) is a health concern at certain levels of exposure. This organic chemical is a widely used solvent. It is used in the manufacture of paint remover, as a metal degreaser, and as an aerosol propellant. It generally gets into water after improper discharge of waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for dichloromethane at 0.005 parts per million (ppm) to protect against the risk of cancer or other adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to

dichloromethane.

61) Di(2-ethylhexyl)adipate. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that di(2-ethylhexyl)adipate is a health concern at certain levels of exposure. Di(2-ethylhexyl)adipate is a widely used plasticizer in a variety of products, including synthetic rubber, food packaging materials, and cosmetics. It may get into drinking water after improper waste disposal. This chemical has been shown to damage the liver and testes in laboratory animals such as rats and mice when the animals are exposed to high levels. USEPA has set the drinking water standard for di(2-ethylhexyl)adipate at 0.4 parts per million (ppm) to protect against the risk of adverse health effects that have been observed in laboratory animals. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to di(2-ethylhexyl)adipate.

62) Di(2-ethylhexyl)phthalate. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that di(2-ethylhexyl)phthalate is a health concern at certain levels of exposure. Di(2-ethylhexyl)phthalate is a widely used plasticizer, which is primarily used in the production of polyvinyl chloride (PVC) resins. It may get into drinking water after improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. USEPA has set the drinking water standard for di(2-ethylhexyl)phthalate at 0.004 parts per million (ppm) to protect against the risk of cancer or other adverse health effects which have been abserved in laboratory animals. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to di(2-ethylhexyl)phthalate.

63) Dinoseb. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that dinoseb is a health concern at certain levels of exposure. Dinoseb is a widely used pesticide and generally gets into water after application on orchards, vineyards, and other crops. This chemical has been shown to damage the thyroid and reproductive organs in laboratory animals such as rats exposed to high levels. USEPA has set the

drinking water standard for dinoseb at 0.007 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to dinoseb.

64) Diquat. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that diquat is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to damage the liver, kidney, and gastrointestinal tract and causes cataract formation in laboratory animals such as dogs and rats exposed at high levels over their lifetimes. USEPA has set the drinking water standard for diquat at 0.02 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to diquat.

65) Endothall. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that endothall is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to damage the liver, kidney, gastrointestinal tract, and reproductive system of laboratory animals such as rats and mice exposed at high levels over their lifetimes. USEPA has set the drinking water standard for endothall at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to endothall.

66) Endrin. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that endrin is a health concern at certain levels of exposure. This organic chemical is a pesticide no longer registered for use in the United States. However, this pesticide is persistent in treated soils and accumulates in sediments and aquatic and terrestrial biota. This chemical has been shown to cause damage to the

liver, kidney, and heart in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. USEPA has set the drinking water standard for endrin at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects that have been observed in laboratory animals. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to endrin.

67) Glyphosate. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that glyphosate is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control grasses and weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to cause damage to the liver and kidneys in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. USEPA has set the drinking water standard for glyphosate at 0.7 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to glyphosate.

68) Hexachlorobenzene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that hexachlorobenzene is a health concern at certain levels of exposure. This organic chemical is produced as an impurity in the manufacture of certain solvents and pesticides. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for hexachlorobenzene at 0.001 parts per million (ppm) to protect against the risk of cancer and other adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to hexachlorobenzene.

69) Hexachlorocyclopentadiene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that

hexachlorocyclopentadiene is a health concern at certain levels of exposure. This organic chemical is a used as an intermediate in the manufacture of pesticides and flame retardants. It may get into water by discharge from production facilities. This chemical has been shown to damage the kidney and the stomach of laboratory animals when exposed to high levels during their lifetimes. USEPA has set the drinking water standard for hexachlorocyclopentadiene at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to hexachlorocyclopentadiene.

70) Oxamyl. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that oxamyl is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for the control of insects and other pests. It may get into drinking water by runoff into surface water or leaching into ground water. This chemical has been shown to damage the kidneys of laboratory animals such as rats when exposed at high levels during their lifetimes. USEPA has set the drinking water standard for oxamyl at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to oxamyl.

71) Picloram. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that picloram is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for broadleaf weed control. It may get into drinking water by runoff into surface water or leaching into groundwater as a result of pesticide application and improper waste disposal. This chemical has been shown to cause damage to the kidneys and liver in laboratory animals such as rats when the animals are exposed to high levels during their lifetimes. USEPA has set the drinking water standard for picloram at 0.5 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to picloram.

72) Simazine. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that simazine is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control annual grasses and broadleaf weeds. It may leach into groundwater or run off into surface water after application. This chemical may cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for simazine at 0.004 parts per million (ppm) to reduce the risk of cancer or adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to simazine.

73) 1,2,4-Trichlorobenzene. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that 1,2,4-trichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a dye carrier and as a precursor in herbicide manufacture. It generally gets into drinking water by discharges from industrial activities. This chemical has been shown to cause damage to several organs, including the adrenal glands. USEPA has set the drinking water standard for 1,2,4-trichlorobenzene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to 1,2,4-trichlorobenzene.

74) 1,1,2-Trichloroethane. The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that 1,1,2-trichloroethane is a health concern at certain levels of exposure. This organic chemical is an intermediate in the production of 1,1-dichloroethylene. It generally gets into water by industrial discharge of wastes. This chemical has been shown to damage the kidney and liver of laboratory animals such as rats exposed to high levels during their lifetimes. USEPA has set the drinking water standard for 1,1,2-trichloroethane at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking

water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to 1,1,2-trichloroethane.

75) 2,3,7,8-TCDD (dioxin). The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that dioxin is a health concern at certain levels of exposure. This organic chemical is an impurity in the production of some pesticides. It may get into drinking water by industrial discharge of wastes. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. USEPA has set the drinking water standard for dioxin at 0.00000003 parts per million (ppm) to protect against the risk of cancer or other adverse health effects. Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to dioxin.

BOARD NOTE: Derived from 40 CFR 141.32(e) (1992), as amended at 57 Fed. Reg. 31843 (July 17, 1992).

(Source: Amended at 17 Ill. Reg. _________, effective ______ ________________)

Section 611.Table Z Federal Effective Dates

The following are the effective dates of the federal MCLs:

Fluoride (40 CFR 141.60(b)(1)) October 2, 1987
(corresponding with Section 611.301(b))

Phase I VOCs (40 CFR 141.60(a)(1)) July 9, 1989
(corresponding with Section 611.311(a))
(benzene, carbon tetrachloride, p-dichlorobenzene., 1,2-Dichloroethane, 1,1-dichloroethylene, 1,1,1-trichloroethane, trichloroethylene, and vinyl chloride)

Lead and Copper (40 CFR, Subpart I) July 7, 1991
(corresponding with Subpart G of this Part)
(lead and copper monitoring, reporting, and recordskeeping requirements of 40 CFR 141.86 through 141.91)

Phase II IOCs (40 CFR 141.60(b)(2)) July 30, 1992
(corresponding with Section 611.301(b))
(asbestos, cadmium, chromium, mercury, nitrate,

nitrite, and selenium)

Phase II VOCs (40 CFR 141.60(a)(2)) July 30, 1992
(corresponding with Section 611.311(a))
(o-dichlorobenzene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, 1,2-dichloropropane, ethylbenzene, monochlorobenzene, styrene, tetrachloroethylene, toluene, and xylenes (total))

Phase II SOCs (40 CFR 141.60(a)(2)) July 30, 1992
(corresponding with Section 611.311(c))
(alachlor, atrazine, carbofuran, chlordane, dibromochloropropane, ethylene dibromide, heptachlor, heptachlor epoxide, lindane, methoxychlor, polychlorinated biphenyls, toxaphene, 2,4-D, and 2,4,5-TP (Silvex))

Lead and Copper (40 CFR, Subpart I) December 7, 1992
(corresponding with Subpart G of this Part)
(lead and copper corrosion control, water treatment, public education, and lead service line replacement requirements of 40 CFR 141.81 through 141.85)

Phase IIB IOC (40 CFR 141.60(b)(2)) January 1, 1993
(corresponding with Section 611.301(b))
(barium)

Phase IIB SOCs (40 CFR 141.60(a)(2)) January 1, 1993
(corresponding with Section 611.311(c))
(aldicarb, aldicarb sulfone, aldicarb sulfoxide, and pentachlorophenol; USEPA stayed the effective date as to the MCLs for aldicarb, aldicarb sulfone, and aldicarb sulfoxide, but the monitoring requirements became effective January 1, 1993)

Phase V IOCs (40 CFR 141.60(b)(3)) January 17, 1994
(corresponding with Section 611.301(b))
(antimony, beryllium, cyanide, nickel, and thallium)

Phase V VOCs (40 CFR 141.60(a)(3)) January 17, 1994
(corresponding with Section 611.311(a))
(dichloromethane, 1,2,4-trichlorobenzene, and 1,1,2-trichloroethane)

Phase V SOCs (40 CFR 141.60(a)(3)) January 17, 1994
(corresponding with Section 611.311(c))
(benzo[a]pyrene, dalapon, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate dinoseb, diquat, endothall, endrin, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram, simazine, and 2,3,7,8-TCDD)

(Source: Amended at 17 Ill. Reg. __________, effective ______ _________________)