ILLINOIS POLLUTION CONTROL BOARD
October 2, 2003

IN THE MATTER OF:)
) R03-15
SDWA UPDATE, USEPA AMENDMENTS) (Identical-in-Substance
(July 1, 2002 through December 31, 2002) Rulemaking - Public Water Supply)

Adopted Rule. Final Order.

ORDER OF THE BOARD (by W.A. Marovitz):

The Board today adopts amendments to the Illinois regulations that are "identical in substance" to drinking water regulations adopted by the United States Environmental Protection Agency (USEPA). The USEPA rules implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal Safe Drinking Water Act (SDWA) (42 U.S.C. §§ 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (1994)). This docket includes federal SDWA amendments that USEPA adopted in the period July 1, 2002 through December 31, 2002. The substantive amendments involved in this proceeding update the analytical methods approved for determining contaminants in drinking water. They also make minor changes to the consumer confidence report rule.

Sections 7.2 and 17.5 of the Environmental Protection Act (Act) (415 ILCS 5/7.2 and 17.5 (2002)) provide for quick adoption by the Board of regulations that are identical in substance to federal regulations that USEPA adopts to implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal SDWA. Section 17.5 also provides that Title VII of the Act and Section 5 of the Administrative Procedure Act (APA) (5 ILCS 100/5-35 and 5-40 (2002)) do not apply to the Board's adoption of identical-in-substance regulations. The federal SDWA regulations are found at 40 C.F.R. 141 through 143.

This order is supported by an opinion that the Board also adopts today. The Board will cause the adopted amendments to be filed no later than October 23, 2003 and published in the *Illinois Register*.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above order on October 2, 2003, by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

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

PART 611
PRIMARY DRINKING WATER STANDARDS

SUBPART A: GENERAL

Section

SUBPART B: FILTRATION AND DISINFECTION

Section

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

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SUBPART ~~X~~ X: ENHANCED FILTRATION AND DISINFECTION--SYSTEMS SERVING FEWER THAN 10,000 PEOPLE

Section

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

SOURCE: Adopted in R88-26 at 14 Ill. Reg. 16517, effective September 20, 1990; amended in R90-21 at 14 Ill. Reg. 20448, effective December 11, 1990; amended in R90-13 at 15 Ill. Reg. 1562, effective January 22, 1991; amended in R91-3 at 16 Ill. Reg. 19010, effective December 1, 1992; amended in R92-3 at 17 Ill. Reg. 7796, effective May 18, 1993; amended in R93-1 at 17 Ill. Reg.

12650, effective July 23, 1993; amended in R94-4 at 18 Ill. Reg. 12291, effective July 28, 1994; amended in R94-23 at 19 Ill. Reg. 8613, effective June 20, 1995; amended in R95-17 at 20 Ill. Reg. 14493, effective October 22, 1996; amended in R98-2 at 22 Ill. Reg. 5020, effective March 5, 1998; amended in R99-6 at 23 Ill. Reg. 2756, effective February 17, 1999; amended in R99-12 at 23 Ill. Reg. 10348, effective August 11, 1999; amended in R00-8 at 23 Ill. Reg. 14715, effective December 8, 1999; amended in R00-10 at 24 Ill. Reg. 14226, effective September 11, 2000; amended in R01-7 at 25 Ill. Reg. 1329, effective January 11, 2001; amended in R01-20 at 25 Ill. Reg. 13611, effective October 9, 2001; amended in R02-5 at 26 Ill. Reg. 3522, effective February 22, 2002; amended in R03-4 at 27 Ill. Reg. 1183, effective January 10, 2003; amended in R03-15 at 27 Ill. Reg. ________, effective ______________________.

SUBPART A: GENERAL

Section 611.100 Purpose, Scope, and Applicability

a) This Part satisfies the requirement of Section 17.5 of the Environmental Protection Act (Act) [415 ILCS 5/17.5] that the Board adopt regulations ~~which~~ that are identical in substance with federal regulations promulgated by the United States Environmental Protection Agency (USEPA) pursuant to Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the Safe Drinking Water Act (SDWA) (42 ~~U.S.C. 300f et seq.~~ USC 300g-1(b), 300g-3(c), 300g-6(a), and 300j-4(a)).

b) This Part establishes primary drinking water regulations (NPDWRs) pursuant to the SDWA, and also includes additional, related State requirements ~~which~~ that are consistent with and more stringent than the USEPA regulations (Section 7.2(a)(6) of the Act [415 ILCS 5/7.2(a)(6)]). The latter provisions are specifically marked as "additional State requirements". They apply only to community water systems (CWSs).

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

  1) CWS suppliers are required to obtain permits from the Illinois Environmental Protection Agency (Agency) pursuant to 35 Ill. Adm. Code 602.

  2) Non-CWS suppliers are subject to additional regulations promulgated by the Illinois Department of Public Health (Public Health or DPH) pursuant to Section 9 of the Illinois Groundwater Protection Act [415 ILCS 55/9], including 77 Ill. Adm. Code 900.

  3) Non-CWS suppliers are not required to obtain permits or other approvals from the Agency, or to file reports or other documents with the Agency. Any provision in this Part so providing is to be understood as requiring the

non-CWS supplier to obtain the comparable form of approval from, or to file the comparable report or other document with Public Health.

BOARD NOTE: Derived from 40 CFR 141.1 ~~(1994)~~ (2002).

d) This Part applies to each PWS, unless the PWS meets all of the following conditions:

1) Consists only of distribution and storage facilities (and does not have any collection and treatment facilities);

2) Obtains all of its water from, but is not owned or operated by, a supplier to which such regulations apply;

3) Does not sell water to any person; and

4) Is not a carrier ~~which~~ that conveys passengers in interstate commerce.

BOARD NOTE: Derived from 40 CFR 141.3 ~~(1994)~~ (2002).

e) Some subsection labels have been omitted in order to maintain local consistency between USEPA subsection labels and the subsection labels in this Part.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.101 Definitions

As used in this Part, the ~~term~~ following terms have the given meanings:

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

"Agency" means the Illinois Environmental Protection Agency.
BOARD NOTE: The Department of Public Health (Public Health or DPH) 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" will mean the Department of 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) (2002). The Board cannot compile an exhaustive listing of all federal,~~ state~~ 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], the Bottled Water Act [815 ILCS 310], the DPH Water Well Construction Code (77 Ill. Adm. Code 920), the DPH Water Well Pump Installation Code (77 Ill. Adm. Code 925), the federal bottled water quality standards (21 CFR 103.35), the federal drinking water processing and bottling standards (21 CFR 129), the federal Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food (21 CFR 110), the federal Fair Packaging and Labeling Act (15 USC 1451 et seq.), and the federal Fair Packaging and Labeling regulations (21 CFR 201).

“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” 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~~ℓ determined before or at the first customer, and the corresponding “disinfectant contact time” (T) in minutes. If a supplier applies disinfectants at more than one point prior to the first customer, it must determine the CT of each disinfectant sequence before or at the first customer to determine the total percent inactivation or “total inactivation ratio.” In determining the total inactivation ratio, the supplier must determine the RDC of each disinfection sequence and corresponding contact time before any subsequent disinfection application points. (See “$\text{CT}_{99.9}$.”)

“$\text{CT}_{99.9}$” is the CT value required for 99.9 percent (3-log) inactivation of Giardia lamblia cysts. $\text{CT}_{99.9}$ for a variety of disinfectants and conditions appear in Tables 1.1-1.6, 2.1 and 3.1 of~~ Section 611.Appendix B~~ Appendix B of this Part. (See “Inactivation Ratio.”)
BOARD NOTE: Derived from the definition of “CT” in 40 CFR 141.2~~ (2000)~~ (2002).

“Coagulation” means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

“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: 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~~ began January 1, 1993, and ~~ends~~ ended December 31, 2001; the second ~~begins~~ began January 1, 2002, and ends December 31, 2010; the third begins January 1, 2011, and ends December 31, 2019.

"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~~ ran 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.

"Comprehensive performance evaluation" or "CPE" is a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation, and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements.
BOARD NOTE: The final sentence of the definition of "comprehensive performance evaluation" in 40 CFR 141.2 is codified as Section 611.160(a)(2), since it contains substantive elements that are more ~~appropriate~~ appropriately codified in a substantive provision.

"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.

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

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

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

> 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.

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

“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.

“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 the point where RDC is measured.

Where more than one RDC is measured, T is as follows:

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.

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

“Disinfection byproduct” or “DBP” means a chemical byproduct that forms when disinfectants used for microbial control react with naturally occurring compounds already present in source water. DBPs include, but are not limited to, bromodichloromethane, bromoform, chloroform, dichloroacetic acid, bromate, chlorite, dibromochloromethane, and certain haloacetic acids.

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

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

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

"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).

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

"Enhanced softening" means the improved removal of disinfection byproduct (DBP) precursors by precipitative softening.

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

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

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

"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.

"GAC10" means granular activated carbon (GAC) filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days.

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

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

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

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

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

"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 (2002).

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

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

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

"Inactivation ratio" (Ai) means as follows:

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

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

$$B = \sum(Ai)$$

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 (2002).

"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~~ a supplier whose system has fewer than 150 service connections, for which it means the three-year compliance period that ~~begins~~ began on January 1, 1996.

"Inorganic contaminants" or "IOCs" refers to that group of contaminants designated as such in United States Environmental Protection Agency (USEPA) regulatory discussions and guidance documents. IOCs include antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, mercury, nickel, nitrate, nitrite, selenium, and thallium.
BOARD NOTE: The IOCs are derived from 40 CFR 141.23(a)(4) (2002).

"~~L~~ℓ" means "liter."

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

"Man-made beta particle and photon emitters" means all radionuclides emitting beta particles 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.

"Maximum contaminant level" or "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.)

"Maximum contaminant level goal" or "MCLG" means the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MCLGs are nonenforceable health goals.
BOARD NOTE: The Board has not routinely adopted the regulations relating to the federal MCLGs because they are outside the scope of the Board's identical-in-substance mandate under Section 17.5 of the Act [415 ILCS 5/17.5].

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

"Maximum residual disinfectant level goal" or "MRDLG" means the maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MRDLGs are nonenforceable health goals and do not reflect the benefit of the addition of the chemical for control of waterborne microbial contaminants.

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

"MFL" means millions of fibers per liter larger than 10 micrometers.
BOARD NOTE: Derived from 40 CFR 141.23(a)(4)(i) ~~(2000)~~ (2002).

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

"mg/~~L~~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 (2002).

"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.

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

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

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

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

"NTU" means "nephelometric turbidity units."

"Old MCL" means one of the inorganic maximum contaminant levels (MCLs), codified at Section 611.300, or organic MCLs, codified at Section 611.310, including any marked as "additional State requirements."
BOARD NOTE: Old MCLs are those derived prior to the implementation of the

USEPA “Phase II” regulations. The Section 611.640 definition of this term, which applies only to Subpart O of this Part, differs from this definition in that the definition does not include the Section 611.300 inorganic MCLs.

“P-A Coliform Test” means “Presence-Absence Coliform Test.”

“Paired sample” means two samples of water for Total Organic Carbon (TOC). One sample is of raw water taken prior to any treatment. The other sample is taken after the point of combined filter effluent and is representative of the treated water. These samples are taken at the same time. (See Section 611.382.)

“Performance evaluation sample” or “PE 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.

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

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

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

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

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

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

“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.

“Point-of-entry treatment device” or “POE” 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.

“Point-of-use treatment device” or “POU” is a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

“Public Health” or “DPH” 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” must mean Public Health.

“Public water system” or “PWS” means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. A PWS is either a community water system (CWS) or a non-community water system (non-CWS). Such term includes the following:

> 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: Where used in Subpart F of this Part, “public water supply” means the same as “public water system.”

“Radioactive contaminants” refers to that group of contaminants designated “radioactive contaminants” in USEPA regulatory discussions and guidance documents. “Radioactive contaminants” include tritium, strontium-89, strontium-90, iodine-131, cesium-134, gross beta emitters, and other nuclides.
BOARD NOTE: Derived from 40 CFR 141.25(c) Table B (2002). These radioactive contaminants must be reported in Consumer Confidence Reports under Subpart U of this Part when they are detected above the levels indicated in Section 611.720(c)(3).

“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 must base this determination on the consistency of analytical results, the degree below the MCL, the susceptibility of source water to variation, and other vulnerability factors pertinent to the 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) (2002).

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

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

"Representative" means that a sample 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~~ℓ in a representative sample of water. For purposes of the requirement of Section 611.241(d) of maintaining a detectable RDC in the distribution system, "RDC" means a residual of free or combined chlorine.

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

"Sanitary 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.

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

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

"Service connection," as used in the definition of public water system, does not include a connection to a system that delivers water by a constructed conveyance other than a pipe if any of the following is true:

> The water is used exclusively for purposes other than residential use (consisting of drinking, bathing, and cooking, or other similar uses);
>
> The Agency determines by issuing a SEP that alternative water for residential use or similar uses for drinking and cooking is provided to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulations; or
>
> The Agency determines by issuing a SEP that the water provided for residential use or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

BOARD NOTE: See sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42

USC 300f(4)(B)(i)(II) ~~&~~ and (4)(B)(i)(III) ~~(1996)~~ (2000)).

"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.

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

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

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

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

BOARD NOTE: Derived from 40 CFR 141.2 (2002) and sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42 USC 300f(4)(B)(i)(II) ~~&~~ and (4)(B)(i)(III) ~~(1996)~~ (2000)).

"Standard sample" means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.

"Subpart B system" means a public water system that uses surface water or groundwater under the direct influence of surface water as a source and which is subject to the requirements of Subpart B of this Part and the analytical and monitoring requirements of Sections 611.531, 611.532, 611.533, ~~611.~~Appendix B of this Part, and ~~611.~~Appendix C of this Part.

"Supplier of water" or "supplier" means any person who owns or operates a public water system (PWS). This term includes the "official custodian."

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

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

"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: Derived from 40 CFR 141.23(b)(2) and 141.24(f)(2) note (2002).

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

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

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

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

"Transient, non-community water system" or "transient non-CWS" means a non-CWS that does not regularly serve at least 25 of the same persons over six months of the year.
BOARD NOTE: The federal regulations apply to all "public water systems," which are defined as all systems having at least 15 service connections or regularly serving water to at least 25 persons. (See 42 USC 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 Section 3.28 of the Act [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 treatment device or a 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 the following compounds:

Trichloromethane (chloroform),

Dibromochloromethane,

Bromodichloromethane, and

Tribromomethane (bromoform)

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

"USEPA" ~~or "U.S. EPA"~~ means the U.S. Environmental Protection Agency.

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

"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," "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.

"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.

“Wellhead protection program” means the wellhead protection program for the State of Illinois, approved by USEPA under Section 1428 of the SDWA, 42 USC 300h-7.
BOARD NOTE: Derived from 40 CFR 141.71(b) (2002). The wellhead protection program includes the “groundwater protection needs assessment” under Section 17.1 of the Act [415 ILCS 5/17.1]~~,~~ and 35 Ill. Adm. Code 615~~ et seq~~-617.

BOARD NOTE: Derived from 40 CFR 141.2 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.102 Incorporations by Reference

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

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

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

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

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

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

“Hach FilterTrak Method 10133” means “Determination of Turbidity by Laser Nephelometry,” available from Hach Co.

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

“Kelada 01” means “Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, And Thiocyanate,” Revision 1.2, August 2001, EPA # 821–B–01–009, available from the National Technical Information Service (NTIS).

“Membrane Filter Technique using Chromocult Doliform Agar” means “Chromocult Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,” available from EM Science.

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

“NTIS” means “National Technical Information Service.”

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

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

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

“Palintest Method 1001” means “Method Number 1001,” available from Palintest, Ltd. or the Hach Company.

“QuikChem Method 10–204–00–1-X” means “Digestion and distillation of total cyanide in drinking and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis,” available from Lachat Instruments.

“Readycult Coliforms 100 Presence/Absence Test” means “Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,” available from EM Science.

“SimPlate Method” means “IDEXX SimPlate TM HPC Test Method for Heterotrophs in Water,” available from IDEXX Laboratories, Inc.

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

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

“Syngenta AG-625” means “Atrazine in Drinking Water by Immunoassay,” February 2001 is available from Syngenta Crop Protection, Inc.

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

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

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

“USEPA Asbestos Methods-100.1” means Method 100.1, “Analytical Method for Determination of Asbestos Fibers in Water,” September 1983, available from NTIS.

“USEPA Asbestos Methods-100.2” means Method 100.2, “Determination of Asbestos Structures over 10-mm in Length in Drinking Water,” June 1994, available from NTIS.

“USEPA Environmental Inorganics Methods” means “Methods for the Determination of Inorganic Substances in Environmental Samples,” August 1993, available from NTIS.

“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,” March 1983, available from NTIS.

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

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

Drinking Water--Supplement II, August 1992, for Method 552.1; “Methods for the Determination of Organic Compounds in Drinking Water--Supplement III,” August 1995, for Methods 502.2, 524.2, 551.1, and 552.2. Method 515.4, “Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Microextraction, Derivatization and Fast Gas Chromatography with Electron Capture Detection,” Revision 1.0, April 2000, EPA 815/B–00/001, and Method 531.2, “Measurement of N-methylcarbamoyloximes and N-methylcarbamates in Water by Direct Aqueous Injection HPLC with Postcolumn Derivatization,” Revision 1.0, September 2001, EPA 815/B/01/002, are both available on-line from USEPA, Office of Ground Water and Drinking Water.

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

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

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

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

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

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

b) The Board incorporates the following publications by reference:

~~Access Analytical Systems, Inc.~~

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

Amco-AEPA-1 Polymer. See 40 CFR 141.22(a) ~~(2000)~~ (2002). Also, as referenced in ASTM D1889.

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

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

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

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

“Standard Methods for the Examination of Water and Wastewater,” 20th Edition, 1998 (referred to as “Standard Methods, 20th ed.”).

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

“National Field Evaluation of a Defined Substrate Method for the Simultaneous Enumeration of Total Coliforms and Escherichia coli for Drinking Water: Comparison with the Standard Multiple Tube Fermentation Method,” S.C. Edberg, M.J. Allen & D.B. Smith, Applied Environmental Microbiology, vol. 54, iss. 6, pp 1595-1601 (1988).

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

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

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

Method 304, Radium in Water by Precipitation.

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

Method 306, Tritium in Water.

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

Method 7110 B, Gross Alpha and Gross Beta Radioactivity in Water (Total, Suspended, and Dissolved).

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

Method 7500-^{3}H B, Tritium in Water.

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

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

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

Method 7500-Ra B, Radium in Water by Precipitation.

Method 7500-Ra C, Radium 226 by Radon in Water (Soluble, Suspended, and Total).

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

Method 7500-Sr B, Total Radioactive Strontium and Strontium 90 in Water.

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

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

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

Method 2130 B, Turbidity, Nephelometric Method.

Method 2320 B, Alkalinity, Titration Method.

Method 2510 B, Conductivity, Laboratory Method.

Method 2550, Temperature, Laboratory and Field Methods.

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

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

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

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

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

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

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

Method 3500-Mg E, Magnesium, ~~EDTA Titrimetric~~ Calculation Method.

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

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

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

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

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

Method 4500-Cl D, Chlorine, Amperometric Titration Method.

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

Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method.

Method 4500-Cl G, Chlorine, DPD Colorimetric Method.

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

Method 4500-Cl I, Chlorine, Iodometric Electrode Method.

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

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

Method 4500-ClO_2 E, Chlorine Dioxide, Amperometric Method II (Proposed).

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

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

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

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

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

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

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

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

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

Cadmium Reduction Method.

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

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

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

Method 4500-Si D, Silica, Molybdosilicate Method.

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

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

~~Method 4500-SO42- C, Sulfate, Gravimetric Method with Ignition of Residue.~~

~~Method 4500-SO42- D, Sulfate, Gravimetric Method with Drying of Residue.~~

~~Method 4500-SO42- F, Sulfate, Automated Methylthymol Blue Method.~~

~~Method 6610, Carbamate Pesticide Method.~~

Method 6651, Glyphosate Herbicide (Proposed).

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

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

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

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

Method 7500-I B, Radioactive Iodine, Precipitation

Method.

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

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

Method 7500-Ra B, Radium, Precipitation Method.

Method 7500-Ra C, Radium, Emanation Method.

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

<u>Method 7500-Sr B, Total Radiactive Strontium and Strontium 90, Precipitation Method.</u>

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

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

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

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

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

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

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

<u>Method 9221 E, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Fecal Coliform Procedure.</u>

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

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

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

Method 9222 D, Membrane Filter Technique for Members of the Coliform Group, Fecal Coliform Membrane Filter Procedure.

Method 9223, Chromogenic Substrate Coliform Test (Proposed).

"Supplement to the 18th Edition of Standard Methods for the Examination of Water and Wastewater," American Public Health Association, 1994.

Method 6610, Carbamate Pesticide Method.

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

Method 2130 B, Turbidity, Nephelometric Method.

Method 2320 B, Alkalinity, Titration Method.

Method 2510 B, Conductivity, Laboratory Method.

Method 2550, Temperature, Laboratory, and Field Methods.

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

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

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

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

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

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

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

Method 3500-Mg E, Magnesium, ~~EDTA Titrimetric~~ Calculation Method.

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

Method 4500-Cl D, Chlorine, Amperometric Titration Method.

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

Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method.

Method 4500-Cl G, Chlorine, DPD Colorimetric Method.

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

Method 4500-Cl I, Chlorine, Iodometric Electrode Method.

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

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

Method 4500-ClO_2 E, Chlorine Dioxide, Amperometric Method II (Proposed).

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

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

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

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

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

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

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

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

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

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

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

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

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

<u>Method 4500-O_3 B, Ozone (Residual) (Proposed), Indigo Colorimetric Method.</u>

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

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

Method 4500-Si D, Silica, Molybdosilicate Method.

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

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

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

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

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

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

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

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

~~Method 4500-ClO2 D, Chlorine Dioxide, DPD Method.~~

~~Method 4500-ClO2 E, Chlorine Dioxide, Amperometric Method II.~~

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

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

Method 6651, Glyphosate Herbicide (Proposed).

Method 7110 B, Gross Alpha and Gross Beta Radioactivity, Evaporation Method for Gross Alpha-Beta.

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

Method ~~7120-B~~ 7120 B, Gamma-Emitting Radionuclides, Gamma Spectrometric Method.

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

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

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

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

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

Method 7500-Ra B, Radium, Precipitation Method.

Method 7500-Ra C, Radium, Emanation Method.

Method 7500-Ra D, Radium, Sequential Precipitation Method.

Method 7500-Sr B, Total Radiactive Strontium and Strontium 90, Precipitation Method.

Method 7500-U B, Uranium, Radiochemical Method.

Method 7500-U C, Uranium, Isotopic Method.

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

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

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

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

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

Method 9221 E, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Fecal Coliform

Procedure.

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

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

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

Method 9222 D, Membrane Filter Technique for Members of the Coliform Group, Fecal Coliform Membrane Filter Procedure.

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Method 2320 B, Alkalinity, Titration Method.

Method 2510 B, Conductivity, Laboratory Method.

Method 2550, Temperature, Laboratory, and Field Methods.

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

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

Method 3500-Mg B, Magnesium, EDTA Titrimetric Method.

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

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

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

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

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

Method 4500-Cl D, Chlorine, Amperometric Titration Method.

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

Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method.

Method 4500-Cl G, Chlorine, DPD Colorimetric Method.

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

Method 4500-Cl I, Chlorine, Iodometric Electrode Method.

Method 4500-ClO2 C, Chlorine Dioxide, Amperometric Method I.

Method 4500-ClO2 D, Chlorine Dioxide, DPD Method.

Method 4500-ClO2 E, Chlorine Dioxide, Amperometric Method II (Proposed).

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

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

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

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

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

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

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

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

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

Method 4500-O3 B, Ozone (Residual) (Proposed), Indigo Colorimetric Method.

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

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

Method 4500-Si C, Silica, Molybdosilicate Method.

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

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

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

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

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

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Method 6651, Glyphosate Herbicide (Proposed).

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Method 7120-B, Gamma-Emitting Radionuclides, Gamma Spectrometric Method.

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

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

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

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

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

Method 7500-Ra B, Radium, Precipitation Method.

Method 7500-Ra C, Radium, Emanation Method.

Method 7500-Sr B, Total Radiactive Strontium and Strontium 90, Precipitation Method.

Method 7500-U B, Uranium, Radiochemical Method.

Method 7500-U C, Uranium, Isotopic Method.

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

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

Method 9221 E, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Fecal Coliform Procedure.

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

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

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

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

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ASTM Method D2036-91 A or B, “Standard Test Methods for Cyanide in Water,” “Test Method A--Total Cyanides after Distillation” & “Test Method B--Cyanides Amenable to Chlorination by Difference,” approved September 15, 1991.

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

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

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

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EM Science (an affiliate of Merck KGgA, Darmstadt, Germany), 480 S. Democrat Road, Gibbstown, NJ 08027–1297. Telephone: 800-222–0342. E-mail: adellenbusch@emscience.com.

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BOARD NOTE: USEPA made the following assertion with regard to this reference at 40 CFR 141.23(k)(1) and 141.24(e) and (n)(11) ~~(1995)~~ (2002): "This document contains other analytical test procedures and approved analytical methods that remain available for compliance monitoring until July 1, 1996."

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

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

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

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Palintest, Ltd., 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY 800-835-9629÷.

“Lead in Drinking Water by Differential Pulse Anodic Stripping Voltammetry,” Method 1001, August 1999.

Syngenta Crop Protection, Inc., 410 Swing Road, Post Office Box 18300, Greensboro, NC 27419. Telephone: 336-632–6000.

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

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

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

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Waters Corporation, Technical Services Division, 34 Maple St., Milford, MA 01757 800-252-4752~~:~~.

“Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography,” Method B-1011, August 1987 (referred to as “Waters Method B-1011”).

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

40 CFR 136, ~~Appendix~~ Appendices B and C ~~(2000)~~ (2002).

d) This Part incorporates no later amendments or editions.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.103 Severability

If any provision of this Part is adjudged invalid, or if its application to any person or in any circumstance is adjudged invalid, such ~~invlidity~~ invalidity does not affect the validity of this Part as a whole, or any other Subpart, Section, subsection, sentence, or clause not adjudged invalid.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.107 Agency Inspection of PWS Facilities

~~(~~a) THE AGENCY SHALL HAVE AUTHORITY TO CONDUCT A PROGRAM OF CONTINUING SURVEILLANCE AND OF REGULAR OR PERIODIC INSPECTION OF PUBLIC WATER SUPPLIES. (Section 4(c) of the Act [415 ILCS 5/4(c)].)

~~(~~b) IN ACCORDANCE WITH CONSTITUTIONAL LIMITATIONS, THE AGENCY SHALL HAVE AUTHORITY TO ENTER AT ALL REASONABLE TIMES UPON ANY PRIVATE OR PUBLIC PROPERTY FOR THE PURPOSE OF INSPECTING AND INVESTIGATING TO ASCERTAIN POSSIBLE VIOLATIONS OF THE ACT OR OF REGULATIONS THEREUNDER, OR OF PERMITS OR CONDITIONS THEREOF. (Section 4(d) of the Act [415 ILCS 5/4(d)].)

BOARD NOTE: In setting forth this provision to make clear the Agency's statutory authority to conduct inspections, the Board does not intend to either broaden or circumscribe that authority or to modify it in any way. Rather, the Board sets this provision forth to make that authority clear for the benefit of the regulated community.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.108 Delegation to Local Government

The Agency may delegate portions of its inspection, investigating and enforcement functions to units of local government pursuant to Section 4(r) of the Act [415 ILCS 5/4(r)].

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.109 Enforcement

a) Any person may file an enforcement action pursuant to Title VIII of the Act [415 ILCS 5/Title VIII].

b) The results of monitoring required under this Part may be used in an enforcement action.

BOARD NOTE: Derived from 40 CFR 141.22(e) ~~(1989), as amended at 54 Fed. Reg. 27526, June 29, 1989,~~ and ~~from 40 CFR~~ 141.23(a)(4) ~~(1989)~~ (2002).

(Source: Amended at 27 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 [415 ILCS 5/39(a)]. Such permit is titled a "special exception" permit ("SEP").

b) No person may 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 [415 ILCS 5/40].

d) A SEP may be initiated in either of the following ways:

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 this subsection (d)(2) ~~of this Section~~. Rather, the Board intends to clarify by this subsection (d)(2) that the Agency may opt to initiate a SEP without receiving a request from the supplier.

e) The Agency must evaluate a request for a SEP from the monitoring requirements of Section 611.601, 611.602, or 611.603 (~~inorganic chemical contaminants,~~ IOCs, excluding the Section 611.603 monitoring frequency requirements for cyanide); Section 611.646(e) and (f) (Phase I, Phase II, and Phase V VOCs); Section 611.646(d), only as to initial monitoring for 1,2,4-trichlorobenzene; Section 611.648(d) (for Phase II, Phase IIB, and Phase V SOCs); or Section 611.510 (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~~:~~.

BOARD NOTE: The Agency must grant a SEP from the Section 611.603 monitoring frequency requirements for cyanide only on the basis of subsection (g) of this Section, not on the basis of this subsection (e).

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

2) If the contaminant was previously used or the previous use was unknown, the Agency must 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, well casing integrity, and wellhead protection; and

      ii) A SWS must consider watershed protection;

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

      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 (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.

g) The Agency must grant a supplier a SEP that allows it to discontinue monitoring for cyanide if it determines that the supplier's water is not vulnerable due to a lack of any industrial source of cyanide.

BOARD NOTE: Subsection (e) of this Section is derived from 40 CFR 141.24(f)(8) and (h)(6) ~~(2000)~~ (2002). Subsection (f) of this Section is derived from 40 CFR 141.82(d)(2), and 141.83(b)(2) ~~(2000)~~ (2002). Subsection (g) is derived from 40 CFR 141.23(c)(2) ~~(2000)~~ (2002). USEPA has reserved the discretion, at 40 CFR 142.18 ~~(2000)~~ (2002), 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 ~~(2000)~~ (2002), 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 27 Ill. Reg. ________, effective ______________________)

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

This Section is intended to describe how the Board grants State relief equivalent to that available from USEPA under ~~Section~~ section 1415(a)(1)(A) and (a)(1)(B) of the SDWA (42 USC 300g-4(a)(1)(A) and (a)(1)(B)). SDWA ~~Section~~ section 1415 variances do not require ultimate compliance within five years in every situation. Variances under Sections 35-37 of the Act [415 ILCS 5/35-37] do require compliance within five years in every case. Consequently, a PWS may have the option of seeking State regulatory relief equivalent to a SDWA ~~Section~~ section 1415 variance through one of three procedural mechanisms: a variance under Sections 35-37 of the Act [415 ILCS 5/35-37] and Subpart B of 35 Ill. Adm. Code 104; a site-specific rule under Sections 27-28 of the Act [415 ILCS 5/27-28] and 35 Ill. Adm. Code 102; or an adjusted standard under Section 28.1 of the Act [415 ILCS 5/28.1] and Subpart D of 35 Ill. Adm. Code ~~106~~ 104.

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

1) The PWS ~~shall~~ must file a petition pursuant to 35 Ill. Adm. Code 102~~,~~ or 104, ~~or 106,~~ as applicable.

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

b) Relief from an MCL.

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

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

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

i) The number of persons served by the system;

ii) Physical conditions related to engineering feasibility; and

iii) Costs of compliance; and

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

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

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

B) Implementation by the PWS of each additional control measure for each MCL with respect to which the relief is granted, during the period ending on the date compliance with such requirement is required.

3) Schedule of compliance for relief from an MCL.

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

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

i) Document its rationale for the extended compliance schedule;

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

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

c) Relief from a treatment technique requirement.

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

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

d) The Board will hold at least one public hearing. In addition the Board will accept comments as appropriate pursuant to 35 Ill. Adm. Code 102~~,~~ or 104~~, or 106~~.

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

1) From the MCL for total coliforms. However, the Board may grant a variance from the total coliform MCL of Section 611.325 for PWSs that prove that the violation of the total coliform MCL is due to persistent growth of total coliform in the distribution system, rather than from fecal or pathogenic contamination, from a treatment lapse or deficiency, or from a problem in the operation or maintenance of the distribution system.

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

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

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

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

BOARD NOTE: Derived from 40 CFR 141.4~~ (1998)~~ (2002), from ~~Section~~ section 1415(a)(1)(A) and (a)(1)(B) of the SDWA and from the "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems using Surface Water Sources", incorporated by reference in Section 611.102. USEPA has reserved the discretion to review and modify or nullify Board determinations made pursuant to this Section at 40 CFR 142.23~~ (1998)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.112 Relief Equivalent to SDWA Section 1416 Exemptions

This Section is intended to describe how the Board grants State relief equivalent to that available from USEPA under ~~Section~~ section 1416 of the SDWA (42 USC 300g-5). SDWA ~~Section~~ section 1416 exemptions do not require ultimate compliance within five years in every situation. Variances under Sections 35-37 of the Act [415 ILCS 5/35-37] do require compliance within five years in every case. Consequently, a PWS may have the option of seeking State regulatory relief equivalent to a SDWA ~~Section~~ section 1416 exemption through one of three procedural mechanisms: a variance under Sections 35-37 of the Act [415 ILCS 5/35-37] and Subpart B of 35 Ill. Adm. Code 104; a site-specific rule under Sections 27-28 of the Act [415 ILCS 5/27-28] and 35 Ill. Adm. Code 102; or an adjusted standard under Section 28.1 of the Act [415 ILCS 5/28.1] and Subpart D of 35 Ill. Adm. Code ~~106~~ 104.

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

1) The PWS ~~shall~~ must file a petition pursuant to 35 Ill. Adm. Code 102~~,~~ or 104, ~~or 106,~~ as applicable.

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

b) As part of the justification for relief under this Section, the PWS ~~shall~~ must demonstrate the following:

1) Due to compelling factors (which may include economic factors), the PWS is unable to comply with the MCL or treatment technique requirement, or to implement measures to develop an alternative source of water supply;

2) The PWS was either of the following:

A) In operation on the effective date of the MCL or treatment technique requirement; or

B) Not in operation on the effective date of the MCL or treatment technique requirement and no reasonable alternative source of drinking water is available to the PWS;

3) The relief will not result in an unreasonable risk to health; and

4) Management or restructuring changes cannot reasonably be made that will result in compliance with the NPDWR or, if compliance cannot be achieved, improve the quality of the drinking water.

BOARD NOTE: In determining that management or restructuring changes cannot reasonably be made that will result in compliance with the NPDWR, the Board will consider the factors required by USEPA under 40 CFR 142.20(b)(1).

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

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

2) Implementation by the PWS, of each additional control measure for each contaminant subject to the MCL or treatment technique requirement, with respect to which relief is granted.

d) Schedule of compliance. A schedule of compliance will require compliance with each MCL or treatment technique requirement with respect to which relief was granted as expeditiously as practicable, but not later than three years after the otherwise applicable compliance date established in ~~Section~~ section 1412(b)(10) of the SDWA (42 USC 300g-1(b)(10)), except as follows:

1) No relief may be granted unless the PWS establishes that it is taking all practicable steps to meet the NPDWR; and

A) The PWS cannot meet the NPDWR without capital improvements that cannot be completed within 12 months;

B) In the case of a PWS that needs financial assistance for the necessary improvements, the PWS has entered into an agreement to obtain such financial assistance; or

C) The PWS has entered into an enforceable agreement to become a part of a regional PWS.

2) In the case of a PWS ~~which~~ that serves 3,300 or fewer persons that needs financial assistance for the necessary improvements, relief may be renewed for one or more additional two year periods, not to exceed a total of six years, if the PWS establishes that it is taking all practicable steps to meet the final date for compliance.

3) A PWS may not receive relief under this Section if the PWS was granted relief under Section 611.111 or 611.131.

e) The Board will hold at least one public hearing. In addition the Board will accept comments as appropriate pursuant to 35 Ill. Adm. Code 102~~,~~ or 104~~, or 106~~.

f) The Agency ~~shall~~ must promptly send USEPA the Opinion and Order of the Board granting relief pursuant to this Section. The Board may reconsider and modify a grant of relief, or relief conditions, if USEPA notifies the Board of a finding pursuant to ~~Section~~ section 1416 of the SDWA (42 USC 300g-5).

BOARD NOTE: Derived from ~~Section~~ section 1416 of the SDWA (42 USC 300g-5).

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

1) From the MCL for total coliforms. However, the Board may grant relief from the total coliform MCL of Section 611.325 for PWSs that prove that the violation of the total coliform MCL is due to persistent growth of total coliforms in the distribution system, rather than from fecal or pathogenic contamination, from a treatment lapse or deficiency, or from a problem in the operation or maintenance of the distribution system.

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

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

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

BOARD NOTE: Derived from 40 CFR 141.4 ~~(1998)~~ (2002). USEPA has reserved the discretion to review and modify or nullify Board determinations made pursuant to this Section at 40 CFR 142.23 ~~(1998)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.113 Alternative Treatment Techniques

This Section is intended to be equivalent to ~~Section~~ section 1415(a)(3) of the SDWA (42 USC 300g-4(a)(3)).

a) Pursuant to this Section, the Board may grant an adjusted standard from a treatment technique requirement.

b) The supplier seeking an adjusted standard ~~shall~~ must file a petition pursuant to Subpart D of 35 Ill. Adm. Code ~~106.Subpart G~~ 104.

c) As justification the supplier ~~shall~~ must demonstrate that an alternative treatment technique is at least as effective in lowering the level of the contaminant with respect to which the treatment technique requirement was prescribed.

d) As a condition of any adjusted standard, the Board will require the use of the alternative treatment technique.

e) The Board will grant adjusted standards for alternative treatment techniques subject to the following conditions:

1) All adjusted standards ~~shall~~ must be subject to the limitations of 40 CFR 142, Subpart G, incorporated by reference in Section 611.102~~,~~; and

2) All adjusted standards ~~shall~~ must be subject to review and approval by ~~U.S. EPA~~ USEPA pursuant to 40 CFR 142.46 before they become effective.

BOARD NOTE: Derived from ~~Section~~ section 1415(a)(3) of the SDWA (42 USC 300g-4(a)(3)).

f) The provisions of Section 611.130 apply to determinations made pursuant to this Section.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.114 Siting ~~requirements~~ Requirements

Before a person enters into a financial commitment for or initiates construction of a new PWS or increases the capacity of an existing PWS, the person ~~shall~~ must obtain a construction permit pursuant to 35 Ill. Adm. Code 602.101 and, to the extent practicable, avoid locating part or all of the new or expanded facility at a site of which the following is true:

a) Is subject to a significant risk from earthquakes, floods, fires, or other disasters ~~which~~ that could cause a breakdown of the PWS or a portion of the PWS. As used in this subsection, "significant risk" means a greater risk to the new or expanded facility than would exist at other locations within the area served by the PWS~~. Or,~~; or

b) Except for intake structures, is within the floodplain of a 100-year flood.

BOARD NOTE: Derived from 40 CFR 141.5 ~~(1989)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.115 Source Water Quantity

a) Surface Supply. - The quantity of surface water at the source ~~shall~~ must be adequate to supply the total water demand of that CWS, as well as a reasonable surplus for anticipated growth.

b) Groundwater supply. ~~-~~ The quantity of groundwater from the source of supply ~~shall~~ must be adequate to supply the total water demand of that CWS, as well as a reasonable surplus for anticipated growth, without excessive depletion of the aquifer.

c) In determining the adequacy of supply for compliance with this Section, each individual CWS ~~shall~~ must be considered in relation to the percentage of the total requirements it is expected to provide.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.120 Effective ~~dates~~ Dates

Except as otherwise provided, this Part becomes effective when filed.

BOARD NOTE: Derived from 40 CFR 141.60 ~~(1989)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.121 Maximum Contaminant Levels and Finished Water Quality

a) Maximum Contaminant Levels: No person ~~shall~~ may cause or allow water that is delivered to any user to exceed the MCL for any contaminant.

b) Finished Water Quality~~:~~.

1) The finished water delivered to any user at any point in the distribution system ~~shall~~ must contain no impurity at a concentration that may be hazardous to the health of the consumer or that would be excessively corrosive or otherwise deleterious to the water supply. Drinking water delivered to any user at any point in the distribution system ~~shall~~ must contain no impurity that could reasonably be expected to cause offense to the sense of sight, taste, or smell.

2) No substance used in treatment should remain in the water at a concentration greater than that required by good practice. A substance that may have a deleterious physiological effect, or one for which physiological effects are not known, ~~shall~~ must not be used in a manner that would permit it to reach the consumer.

c) ~~A~~ An MCL for a particular contaminant ~~shall~~ ~~apply~~ applies in lieu of any finished water quality narrative standard.

BOARD NOTE: Derived from the definition of "MCL" in 40 CFR 141.2 ~~(1991)~~ (2002) and former 35 Ill. Adm. Code 604.201, repealed in R88-26, at 14 Ill. Reg. 16435, effective September 20, 1990.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.125 Fluoridation Requirement

All CWSs ~~which~~ that are required to add fluoride to the water ~~shall~~ must maintain a fluoride ion concentration reported as F of 0.9 to 1.2 mg/1 in its distribution system, as required by Section 7a of the Public Water Supply Regulation Act [415 ILCS 40/7a].

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.126 Prohibition on Use of Lead

a) In general. Prohibition. Any pipe, any pipe or plumbing fitting or fixture, any solder or any flux~~,~~ must be lead free, as defined by subsection (b) of this Section, if it is used after June 19, 1986 in the installation or repair of either of the following:

  1) Any PWS~~,~~; or

  2) Any plumbing in a residential or nonresidential facility providing water for human consumption that is connected to a PWS. This subsection (a) does not apply to leaded joints necessary for the repair of cast iron pipes.

b) Definition of lead free. For purposes of this Section, the term "lead free" means as follows:

  1) When used with respect to solders and flux, refers to solders and flux containing not more than 0.2 percent lead;

  2) When used with respect to pipes and pipe fittings, refers to pipes and pipe fittings containing not more than 8.0 percent lead; and

  3) When used with respect to plumbing fittings and fixtures that are intended by the manufacturer to dispense water for human ingestion, refers to plumbing fittings and fixtures in compliance with NSF Standard 61, section 9, incorporated by reference in Section 611.102.

BOARD NOTE: Derived from 40 CFR 141.43(a) and (d) ~~(1999), as amended at 65 Fed. Reg. 2003 (Jan. 12, 2000)~~ (2002), and section 1417 of SDWA, 42 USC 300g-6(a)(1) ~~(1998)~~ (2000). USEPA has stated that NSF Standard 61 is the standard for plumbing fittings and fixtures developed pursuant to 42 USC 300g-6(e). See 62 Fed. Reg. 44684 (Aug. 22, 1997).

(Source: Amended at 27 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 ~~which~~ 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) of this Section 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 that the application 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) The introduction of off-line water storage for THM precursor reduction;

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

iii) The introduction of clarification, where not presently practiced;

iv) The use of alternative sources of raw water; and

v) The 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 must petition the Board to reconsider or modify a variance or adjusted standard, pursuant to Subpart I of 35 Ill. Adm. Code 101, if it determines that an alternative method identified by the supplier pursuant to subsection (a)(2) of this Section is technically feasible and would result

in a significant reduction in TTHM.

4) Best available technology for TTHM reduction is as follows:

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

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

C) Improved existing clarification for THM precursor reduction.

BOARD NOTE: Subsection (a) derived from 40 CFR 142.60 ~~(2000)~~ (2002).

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) of this Section 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 fluoride, according to a definite schedule:

i) A modification of lime softening;

ii) Alum coagulation;

iii) Electrodialysis;

iv) Anion exchange resins;

v) Well field management;

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

4) Best available technology for fluoride reduction is as follows:

A) Activated alumina absorption centrally applied~~,~~; and

B) Reverse osmosis centrally applied.

BOARD NOTE: Subsection (b) derived from 40 CFR 142.61 ~~(2000)~~ (2002).

c) Relief from an ~~inorganic chemical contaminant~~ IOC, 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~~ IOC, listed in Section 611.301, the supplier must have first applied the best available technology (BAT) identified at Section 611.311(b) (VOCs and SOCs) or Section 611.301(c) (~~inorganic chemical contaminants~~ IOCs) 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), for the purposes of variances and exemptions (adjusted standards). That list is identical to the list at 40 CFR 141.61(b).

2) The Board may require any of the following as a condition for relief from an 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 must petition the Board to reconsider or modify a variance or adjusted standard, pursuant to Subpart I of 35 Ill. Adm. Code 101, if it determines that an alternative method identified by the supplier pursuant to subsection (c)(2) of this Section is technically feasible.

BOARD NOTE: Subsection (c) derived from 40 CFR 142.62(a) through (e) ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001)~~ (2002).

d) Conditions requiring use of bottled water, a point-of-use treatment device, or a point-of-entry treatment device. 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, a point-of-entry treatment device, or a point-of-use treatment device to avoid an unreasonable risk to health, limited as provided in subsections (e) and (f) of this Section.

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, a point-of-entry treatment device, a point-of-use treatment device, 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, a point-of-use treatment device, or other means, but not a point-of-entry treatment device, 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 a point-of-entry treatment device to avoid an unreasonable risk to health.

BOARD NOTE: Subsection (d) derived from 40 CFR 142.62(f) ~~(2000)~~ (2002).

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) of this Section~~:~~.

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 (e).

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 must 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 (g)(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 must provide the certification required by subsection (e)(4) of this Section to the Agency during the first quarter after it begins supplying bottled water and annually thereafter.

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

BOARD NOTE: Subsection (e) derived from 40 CFR 142.62(g) ~~(2000)~~ (2002).

f) Use of a point-of-entry treatment device. 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 treatment 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: Subsection (f) derived from 40 CFR 142.62(h) ~~(2000)~~ (2002).

g) Relief from the maximum contaminant levels for radionuclides (effective December 8, 2003).

1) Relief from the maximum contaminant levels for combined radium-226 and radium-228, uranium, gross alpha particle activity (excluding radon and uranium), and beta particle and photon radioactivity.

A) Section 611.330(g) sets forth what USEPA has identified as the best available technology (BAT), treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in Section 611.330(b), (c), (d), and (e), for the purposes of issuing relief equivalent to a federal section 1415 variance or a section 1416 exemption.

B) In addition to the technologies listed in Section 611.330(g), Section 611.330(h) sets forth what USEPA has identified as the BAT, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in Section 611.330(b), (c), (d), and (e), for the purposes of issuing relief equivalent to a federal section 1415 variance or a section 1416 exemption to small drinking water systems, defined here as those serving 10,000 persons or fewer, as shown in the second table set forth at Section 611.330(h).

2) The Board will require a CWS supplier to install and use any treatment technology identified in Section 611.330(g), or in the case of small water systems (those serving 10,000 persons or fewer), listed in Section 611.330(h), as a condition for granting relief equivalent to a federal section 1415 variance or a section 1416 exemption, except as provided in

subsection (a)(3) of this Section. If, after the system's installation of the treatment technology, the system cannot meet the MCL, that system will be eligible for relief.

3) If a CWS supplier can demonstrate through comprehensive engineering assessments, which may include pilot plant studies, that the treatment technologies identified in this Section would only achieve a de minimus reduction in the contaminant level, the Board may issue a schedule of compliance that requires the system being granted relief equivalent to a federal section 1415 variance or a section 1416 exemption to examine other treatment technologies as a condition of obtaining the relief.

4) If the Agency determines that a treatment technology identified under subsection (a)(3) of this Section is technically feasible, it may request that the Board require the supplier to install and use that treatment technology in connection with a compliance schedule issued pursuant to Section 36 of the Act [415 ILCS 5/36]. The Agency's determination must be based upon studies by the system and other relevant information.

5) The Board may require a CWS to use bottled water, point-of-use devices, point-of-entry devices, or other means as a condition of granting relief equivalent to a federal section 1415 variance or a section 1416 exemption from the requirements of Section 611.330, to avoid an unreasonable risk to health.

6) A CWS supplier that uses bottled water as a condition for receiving relief equivalent to a federal section 1415 variance or a section 1416 exemption from the requirements of Section 611.330 must meet the requirements specified in either subsections (e)(1) through (e)(3) or (e)(4) through (e)(6) of this Section.

7) A CWS supplier that uses point-of-use or point-of-entry devices as a condition for obtaining relief equivalent to a federal section 1415 variance or a section 1416 exemption from the radionuclides NPDWRs must meet the conditions in subsections (g)(1) through (g)(6) of this Section.

BOARD NOTE: Subsection (g) derived from 40 CFR 142.65~~, as added at 65 Fed. Reg. 76751 (December 7, 2000), effective December 8, 2003~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.131 Relief Equivalent to SDWA Section 1415(e) Small System Variance

This Section is intended as a State equivalent of ~~Section~~ section 1415(e) of the federal SDWA (42 USC 300g-4(e)).

a) Variances may be obtained from the requirement to comply with an MCL or treatment technique to a PWS serving fewer than 10,000 persons in this Section. The PWS must file a variance petition pursuant to Subpart B of 35 Ill. Adm. Code 104, except as modified or supplemented by this Section.

b) The Board will grant a small system variance to a PWS serving fewer than 3,300 persons. The Board will grant a small system variance to a PWS serving more than 3,300 persons but fewer than 10,000 persons with the approval of the USEPA. In determining the number of persons served by the PWS, the Board will include persons served by consecutive systems. A small system variance granted to a PWS also applies to any consecutive system served by it.

c) Availability of a variance.

1) A small system variance is not available under this Section for an NPDWR for a microbial contaminant (including a bacterium, virus, or other organism) or an indicator or treatment technique for a microbial contaminant.

2) A small system variance under this Section is available for compliance with a requirement specifying an MCL or treatment technique for a contaminant with respect to which the following is true:

A) An NPDWR was promulgated on or after January 1, 1986; and

B) The USEPA has published a small system variance technology pursuant to ~~Section~~ section 1412(b)(15) of the federal SDWA (42 USC 300g-1(b)(15)).

BOARD NOTE: Small system variances are not available for PWSs above the pre-1986 MCL even if subsequently revised. If the USEPA revises a pre-1986 MCL and makes it more stringent, then a variance would be available for that contaminant, but only up to the pre-1986 maximum contaminant level.

d) No small system variance will be in effect until the later of the following:

1) 90 days after the Board proposes to grant the small system variance;

2) If the Board is proposing to grant a small system variance to a PWS serving fewer than 3,300 persons and the USEPA objects to the small system variance, the date on which the Board makes the recommended modifications or responds in writing to each objection; or

3) If the Board is proposing to grant a small system variance to a PWS serving a population of more than 3,300 and fewer than 10,000 persons, the date the

USEPA approves the small system variance.

e) As part of the showing of arbitrary or unreasonable hardship, the PWS must prove and document the following to the Board:

1) That the PWS is eligible for a small system variance pursuant to subsection (c) of this Section;

2) That the PWS cannot afford to comply with the NPDWR for which a small system variance is sought, including by the following:

A) Treatment;

B) Alternative sources of water supply;

C) Restructuring or consolidation changes, including ownership change or physical consolidation with another PWS; or

D) Obtaining financial assistance pursuant to Section 1452 of the federal SDWA or any other federal or State program;

3) That the PWS meets the source water quality requirements for installing the small system variance technology developed pursuant to guidance published under ~~Section~~ section 1412(b)(15) of the federal SDWA (42 USC 300g-1(b)(15));

4) That the PWS is financially and technically capable of installing, operating, and maintaining the applicable small system variance technology; and

5) That the terms and conditions of the small system variance ensure adequate protection of human health, considering the following:

A) The quality of the source water for the PWS; and

B) Removal efficiencies and expected useful life of the small system variance technology.

f) Terms and Conditions.

1) The Board will set the terms and conditions of a small system variance issued under this Section and will include, at a minimum, the following requirements:

A) Proper and effective installation, operation, and maintenance of the applicable small system variance technology in accordance with guidance published by the USEPA, taking into consideration any relevant source water characteristics and any other site-specific conditions that may affect proper and effective operation and maintenance of the technology;

B) Monitoring requirements for the contaminant for which a small system variance is sought; and

C) Any other terms or conditions that are necessary to ensure adequate protection of public health, which may include the following:

i) Public education requirements; and

ii) Source water protection requirements.

2) The Board will establish a schedule for the PWS to comply with the terms and conditions of the small system variance that will include, at a minimum, the following requirements:

A) Increments of progress, such as milestone dates for the PWS to apply for financial assistance and begin capital improvements;

B) Quarterly reporting to the Agency of the PWSs compliance with the terms and conditions of the small system variance;

C) Schedule for the Board to review the small system variance; and

BOARD NOTE: Corresponding 40 CFR 142.307(d) ~~(1999)~~ (2002) provides that the states must review variances no less frequently than every five years. Section 36 of the Act [415 ILCS 5/36] provides that 5 years is the maximum term of a variance.

D) Compliance with the terms and conditions of the small system variance as soon as practicable, but not later than three years after the date on which the small system variance is granted. The Board may allow up to two additional years if the Board determines that additional time is necessary for the PWS to do the following:

i) Complete necessary capital improvements to comply with the small system variance technology, secure an alternative source of water, or restructure or consolidate; or

ii) Obtain financial assistance provided pursuant to Section 1452 of the SDWA or any other federal or State program.

g) The Board will provide notice and opportunity for a public hearing as provided in Subpart B of 35 Ill. Adm. Code 104, except as modified or supplemented by this

Section.

1) At least 30 days before the public hearing to discuss the proposed small system variance, the PWS must provide notice to all persons served by the PWS. For billed customers, this notice must include the information listed in subsection (g)(2) of this Section. For other persons regularly served by the PWS, notice must provide sufficient information to alert readers to the proposed variance and direct them to where to receive additional information, and must be as provided in subsection (g)(1)(B) of this Section. Notice must be by the following means:

A) Direct mail or other home delivery to billed customers or other service connections~~,~~; and

B) Any other method reasonably calculated to notify, in a brief and concise manner, other persons regularly served by the PWS. Such methods may include publication in a local newspaper, posting in public places or delivery to community organizations.

2) The notice in subsection (g)(1)(A) of this Section must include, at a minimum, the following:

A) Identification of the contaminants for which a small system variance is sought;

B) A brief statement of the health effects associated with the contaminants for which a small system variance is sought, using language in Appendix H of this Part;

C) The address and telephone number at which interested persons may obtain further information concerning the contaminant and the small system variance;

D) A brief summary, in easily understandable terms, of the terms and conditions of the small system variance;

E) A description of the consumer petition process under subsection (h) of this Section and information on contacting the USEPA Regional Office;

F) A brief statement announcing the public meeting required under subsection (g)(3) of this Section, including a statement of the purpose of the meeting, information regarding the time and location for the meeting, and the address and telephone number at which interested persons may obtain further information concerning the meeting; and

G) In communities with a large proportion of non-English-speaking residents, as determined by the Board, information in the appropriate language regarding the content and importance of the notice.

3) The Board will provide for at least one public hearing on the small system variance. The PWS must provide notice in the manner required under subsection (g)(1) of this Section at least 30 days prior to the public hearing.

4) Prior to promulgating the final variance, the Board will respond in writing to all significant public comments received relating to the small system variance. Response to public comment and any other documentation supporting the issuance of a variance will be made available to the public after final promulgation.

h) Any person served by the PWS may petition the USEPA to object to the granting of a small system variance within 30 days after the Board proposes to grant a small system variance for the PWS.

i) The Agency must promptly send the USEPA the Opinion and Order of the Board granting the proposed small system variance. The Board will make the recommended modifications, respond in writing to each objection, or withdraw the proposal to grant the small system variance if USEPA notifies the Board of a finding pursuant to ~~Section~~ section 1415 of the SDWA (42 USC 300g-4).

j) In addition to the requirements of this Section, the provisions of Section 611.111, 611.112, or 611.130 may apply to relief granted pursuant to this Section.

BOARD NOTE: Derived from 40 CFR 142, Subpart K ~~(1999)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.160 Composite Correction Program

a) The Agency may require in writing that a PWS conduct a Composite Correction Program (CCP). The CCP ~~shall~~ must consist of two elements: a Comprehensive Performance Evaluation (CPE) and a Comprehensive Technical Assistance (CTA).

1) A CPE is a thorough review and analysis of a plant's performance-based capabilities and associated administrative, operation, and maintenance practices. It must identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasize approaches that can be implemented without significant capital improvements.

2) For purposes of compliance with Subparts R and X of this Part, the comprehensive performance evaluation must consist of at least the following components: Assessment of plant performance; evaluation of major unit processes; identification and prioritization of performance limiting factors; assessment of the applicability of comprehensive technical assistance; and preparation of the CPE report.

BOARD NOTE: Subsection (a)(2) of this Section is derived from the third sentence of the definition of “comprehensive performance evaluation” in 40 CFR 141.2 (2002).

3) A CTA is the performance improvement phase that is implemented if the CPE results indicate improved performance potential. During the CTA phase, the PWS ~~shall~~ must identify and systematically address plant-specific factors. The CTA is a combination of utilizing CPE results as a basis for followup, implementing process control priority-setting techniques and maintaining long-term involvement to systematically train staff and administrators.

b) A PWS ~~shall~~ must implement any followup recommendations made in writing by the Agency that result as part of the CCP.

c) A PWS may appeal to the Board, pursuant to Section 40 of the Act [415 ILCS 5/40], any Agency requirement that it conduct a CCP or any followup recommendations made in writing by the Agency that result as part of the CCP, except when a CPE is required under Section 611.745(b)(4).

BOARD NOTE: Derived from 40 CFR 142.16 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART B: FILTRATION AND DISINFECTION

Section 611.201 Requiring a Demonstration

The Agency ~~shall~~ must notify each supplier in writing of the date on which any demonstrations pursuant to the Section are required. The Agency ~~shall~~ must require demonstrations at times ~~which~~ that meet the ~~U.S. EPA~~ USEPA requirements for that type of demonstration, allowing sufficient time for the supplier to collect the necessary information.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.202 Procedures for Agency Determinations

The determinations in this Subpart B are by ~~special exception permit~~ a SEP issued pursuant to Section 611.110.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.211 Filtration Required

The Agency ~~shall~~ must determine that filtration is required unless the PWS meets the following criteria:

a) Source water quality criteria:

1) Coliforms, see Section 611.231(a)

2) Turbidity, see Section 611.231(b)

b) ~~Site specfic~~ Site-specfic criteria:

1) Disinfection, see Section 611.241(b)

2) Watershed control, see Section 611.232(b)

3) On-site inspection, see Section 611.232(c)

4) Absence of waterborne disease outbreaks, see Section 611.232(d)

5) Total coliform MCL, see Sections 611.232(e) and 611.325~~.~~

6) TTHMs MCL, see Section 611.310~~.~~

BOARD NOTE: Derived from 40 CFR 141.71~~, adopted at 54 Fed. Reg. 27526, June 29, 1989,~~ 2002 and from the ~~Preamble~~ preamble discussion at 54 Fed. Reg. 27505~~, June 29, 1989~~ (June 29, 1989).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.212 Groundwater under Direct Influence of Surface Water

The Agency shall, pursuant to Section 611.201, require all CWSs to demonstrate whether they are using "groundwater under the direct influence of surface water". The Agency ~~shall~~ must determine with information provided by the supplier whether a PWS uses "groundwater under the direct influence of surface water" on an individual basis. The Agency ~~shall~~ must determine that a groundwater source is under the direct influence of surface water based upon the following:

a) Physical characteristics of the source: whether the source is obviously a surface water source, such as a lake or stream. Other sources ~~which~~ that may be subject to influence from surface waters include: springs, infiltration galleries, wells, or other collectors in subsurface aquifers.

b) Well construction characteristics and geology with field evaluation.

  1) The Agency may use the wellhead protection program’s requirements, which include delineation of wellhead protection areas, assessment of sources of contamination and implementation of management control systems, to determine if the wellhead is under the influence of surface water.

  2) Wells less than or equal to 50 feet in depth are likely to be under the influence of surface water.

  3) Wells greater than 50 feet in depth are likely to be under the influence of surface water, unless they include the following:

    A) A surface sanitary seal using bentonite clay, concrete, or similar material,

    B) A well casing that penetrates consolidated (slowly permeable) material~~,~~; and

    C) A well casing that is only perforated or screened below consolidated (slowly permeable) material.

  4) A source ~~which~~ that is less than 200 feet from any surface water is likely to be under the influence of surface water.

c) Any structural modifications to prevent the direct influence of surface water and eliminate the potential for Giardia lamblia cyst contamination.

d) Source water quality records. The following are indicative that a source is under the influence of surface water:

  1) A record of total coliform or fecal coliform contamination in untreated samples collected over the past three years~~,~~;

  2) A history of turbidity problems associated with the source~~,~~; or

  3) A history of known or suspected outbreaks of Giardia lamblia, Cryptosporidium or other pathogenic organisms associated with surface water that has been attributed to that source.

e) Significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH.

1) A variation in turbidity of 0.5 NTU or more over one year is indicative of surface influence.

2) A variation in temperature of 9 Fahrenheit degrees or more over one year is indicative of surface influence.

f) Significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH ~~which~~ that closely correlate to climatological or surface water conditions are indicative of surface water influence.

1) Evidence of particulate matter associated with the surface water~~.~~; or~~,~~

2) Turbidity or temperature data ~~which~~ that correlates to that of a nearby surface water source.

g) Particulate analysis: Significant occurrence of insects or other macroorganisms, algae, or large diameter pathogens such as Giardia lamblia is indicative of surface influence.

1) "Large diameter" particulates are those over 7 micrometers.

2) Particulates must be measured as specified in the "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems using Surface Water Sources", incorporated by reference in Section 611.102.

h) The potential for contamination by small-diameter pathogens, such as bacteria or viruses, does not alone render the source "under the direct influence of surface water".

BOARD NOTE: Derived from the definition of "groundwater under the direct influence of surface water" in 40 CFR 141.2 ~~(1998)~~ (2002); from the Preamble at 54 Fed. Reg. 27489 (June 29, 1989); and from the USEPA "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems using Surface Water Sources", incorporated by reference in Section 611.102.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.213 No Method of HPC Analysis

This Section is used in Sections 611.241(d)(2), 611.242(c)(2), 611.261(b)(8)(G), 611.262(b)(3)(G), 611.532(f)(2), and 611.533(c)(2). The Agency ~~shall~~ must determine that a system has no means for having a sample analyzed for HPC if the Agency determines that such action is warranted, based on the following site-specific conditions:

a) There is no certified laboratory ~~which~~ that can analyze the sample within the time and temperatures specified in Standard Methods, 16th Edition, Method 907A, incorporated by reference in Section 611.102, considering the following:

1) Transportation time to the nearest laboratory pursuant to Section 611.490; and

2) Based on the size of the PWS, whether it should acquire in-house laboratory capacity to measure HPC; and

b) The supplier is providing adequate disinfection in the distribution system, considering the following:

1) Other measurements ~~which~~ that show the presence of RDC in the distribution system;

2) The size of the distribution system;

3) The adequacy of the supplier's cross connection control program.

c) The PWS cannot maintain an RDC in the distribution system.

BOARD NOTE: Derived from 40 CFR 141.72(a)(4)(ii) ~~(1989), adopted at 54 Fed. Reg. 27526, June 29, 1989, and from the Preamble at 54 Fed. Reg. 27495, June 29, 1989~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.220 General Requirements

a) The requirements of this Subpart B constitute NPDWRs. This Subpart B establishes criteria under which filtration is required as a treatment technique for PWSs supplied by a surface water source and PWSs supplied by a groundwater source under the direct influence of surface water. In addition, these regulations establish treatment technique requirements in lieu of MCLs for the following contaminants: Giardia lamblia, viruses, HPC bacteria, Legionella, and turbidity. Each supplier with a surface water source or a groundwater source under the direct influence of surface water ~~shall~~ must provide treatment of that source water that complies with these treatment technique requirements. The treatment technique requirements consist of installing and properly operating water treatment processes ~~which~~ that reliably achieve the following:

1) At least 99.9 percent (3-log) removal or inactivation of Giardia lamblia cysts between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer; and

2) At least 99.99 percent (4-log) removal or inactivation of viruses between a

point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer.

b) A supplier using a surface water source or a groundwater source under the direct influence of surface water is considered to be in compliance with the requirements of subsection (a) if either of the following is true:

1) ~~It~~ The supplier meets the requirements for avoiding filtration in Sections 611.230 through 611.232 and the disinfection requirements in Section 611.241; or

2) ~~It~~ The supplier meets the filtration requirements in Section 611.250 and the disinfection requirements in Section 611.242.

c) Each supplier using a surface water source or a groundwater source under the direct influence of surface water ~~shall~~ must have a certified operator pursuant to 35 Ill. Adm. Code 603.103 and the Public Water Supply Operations Act [415 ILCS 45].

d) Additional requirements for PWSs serving 10,000 or more persons. In addition to complying with requirements in this Subpart B, PWSs serving 10,000 or more persons must also comply with the requirements in Subpart R of this Part.

e) Additional requirements for systems serving fewer than 10,000 people. In addition to complying with requirements in this Subpart B, systems serving fewer than 10,000 people must also comply with the requirements in Subpart X of this Part.

BOARD NOTE: Derived from 40 CFR 141.70 (2002). The Public Water Supply Operations Act [415 ILCS 45] applies only to CWSs, which are regulated by the Agency. It does not apply to non-CWSs, which are regulated by Public Health. Public Health has its own requirements for personnel operating water supplies that it regulates, e.g., 77 Ill. Adm. Code 900.40(e).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.230 Filtration Effective Dates

a) A supplier that uses a surface water source ~~shall~~ must meet all of the conditions of Section 611.231 and 611.232, and is subject to Section 611.233, beginning December 30, 1991, unless the Agency has determined that filtration is required.

b) A supplier that uses a groundwater source under the direct influence of surface water ~~shall~~ must meet all of the conditions of Section 611.231 and 611.232, and is subject to Section 611.233, beginning 18 months after the Agency determines that it is under the direct influence of surface water, or December 30, 1991, whichever is later, unless the Agency has determined that filtration is required.

c) If the Agency determines, before December 30, 1991, that filtration is required, the system ~~shall~~ must have installed filtration and ~~shall~~ must meet the criteria for filtered systems specified in Section 611.242 and Section 611.250 by June 29, 1993.

d) Within 18 months of the failure of a system using surface water or a groundwater source under the direct influence of surface water to meet any one of the requirements of ~~Section~~ Sections 611.231 and 611.232, or after June 29, 1993, whichever is later, the system ~~shall~~ must have installed filtration and meet the criteria for filtered systems specified in Sections 611.242 and 611.250.

BOARD NOTE: Derived from 40 CFR 141.71 preamble ~~(1989), as amended at 54 Fed. Reg. 27526, June 29, 1989~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.231 Source Water Quality Conditions

The Agency ~~shall~~ must consider the following source water quality conditions in determining whether to require filtration pursuant to Section 611.211:

a) The fecal coliform concentration must be equal to or less than 20/100 ml, or the total coliform concentration must be equal to or less than 100/100 ml (measured as specified in Section 611.531(a) or (b) and 611.532(a)) in representative samples of the source water immediately prior to the first or only point of disinfectant application in at least 90 percent of the measurements made for the 6 previous months that the system served water to the public on an ongoing basis. If a system measures both fecal and total coliforms, the fecal coliform criterion, but not the total coliform criterion, in this subsection, must be met.

b) The turbidity level cannot exceed 5 NTU (measured as specified in Section 611.531(d) and 611.532(b) in representative samples of the source water immediately prior to the first or only point of disinfectant application unless the following are true:

   1) The Agency determines that any such event was caused by circumstances that were unusual and unpredictable; and

   2) As a result of any such event there have not been more than two events in the past 12 months the system served water to the public, or more than five events in the past 120 months the system served water to the public, in which the turbidity level exceeded 5 NTU. An "event" is a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

BOARD NOTE: Derived from 40 CFR 141.71(a)~~ (1989), as amended at 54 Fed. Reg. 27526, June 29, 1989~~ (2002).

c) Each CWS must take its raw water from the best available source ~~which~~ that is economically reasonable and technically possible.

BOARD NOTE: This is an additional State requirement.

d) Use of recycled sewage treatment plant effluent by a CWS on a routine basis ~~shall~~ must not be permitted.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.232 ~~Site-specific~~ Site-Specific Conditions

The Agency must consider the following site specific criteria in determining whether to require filtration pursuant to Section 611.211:

a) Disinfection.

1) The supplier must meet the requirements of Section 611.241(a) at least 11 of the 12 previous months that the system served water to the public, on an ongoing basis, unless the system fails to meet the requirements during 2 of the 12 previous months that the system served water to the public, and the Agency determines that at least one of these failures was caused by circumstances that were unusual and unpredictable.

2) The supplier must meet the following requirements at the times specified for each:

A) The requirements of Section 611.241(b)(1) at all times the system serves water to the public; and

B) The requirements of Section 611.241(b)(2) at all times the system serves water to the public, unless the Agency determines that any such failure was caused by circumstances that were unusual and unpredictable.

3) The supplier must meet the requirements of Section 611.241(c) at all times the system serves water to the public, unless the Agency determines that any such failure was caused by circumstances that were unusual and unpredictable.

4) The supplier must meet the requirements of Section 611.241(d) on an

ongoing basis, unless the Agency determines that failure to meet these requirements was not caused by a deficiency in treatment of the source water.

b) Watershed control program. The supplier must maintain a watershed control program that minimizes the potential for contamination by Giardia lamblia cysts and viruses in the source water.

1) The Agency must determine whether the watershed control program is adequate to meet this goal. The Agency must determine the adequacy of a watershed control program based on the following:

A) The comprehensiveness of the watershed review;

B) The effectiveness of the supplier's program to monitor and control detrimental activities occurring in the watershed; and

C) The extent to which the water supplier has maximized land ownership or controlled the land use within the watershed. At a minimum, the watershed control program must do the following:

i) Characterize the watershed hydrology and land ownership;

ii) Identify watershed characteristics and activities that may have an adverse effect on source water quality; and

iii) Monitor the occurrence of activities that may have an adverse effect on source water quality.

2) The supplier must demonstrate through ownership or written agreements with landowners within the watershed that it can control all human activities that may have an adverse impact on the microbiological quality of the source water. The supplier must submit an annual report to the Agency that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and describes how the supplier expects to address them. For systems using a groundwater source under the direct influence of surface water, an approved wellhead protection program may be used, if appropriate, to meet these requirements.

c) On-site inspection. The supplier must be subject to an annual on-site inspection to assess the watershed control program and disinfection treatment process. The Agency must conduct the inspection. A report of the on-site inspection summarizing all findings must be prepared every year. The on-site inspection must demonstrate that the watershed control program and disinfection treatment process are adequately designed and maintained. The on-site inspection must include the following:

1) A review of the effectiveness of the watershed control program;

2) A review of the physical condition of the source intake and how well it is protected;

3) A review of the supplier's equipment maintenance program to ensure there is low probability for failure of the disinfection process;

4) An inspection of the disinfection equipment for physical deterioration;

5) A review of operating procedures;

6) A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and

7) Identification of any improvements that are needed in the equipment, system maintenance, and operation or data collection.

d) Absence of waterborne disease outbreaks. The PWS must not have been identified as a source of a waterborne disease outbreak, or if it has been so identified, the system must have been modified sufficiently to prevent another such occurrence.

e) Total coliform MCL. The supplier must comply with the MCL for total coliforms in Section 611.325 at least 11 months of the 12 previous months that the system served water to the public, on an ongoing basis, unless the Agency determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water.

f) TTHM MCL. The supplier must comply with the MCL for TTHM in Section 611.310. The PWS must comply with the requirements for trihalomethanes until December 31, 2001. After December 31, 2001, the supplier must comply with the requirements for total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide in Subpart I of this Part.

BOARD NOTE: Derived from 40 CFR 141.71(b) ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.233 Treatment Technique Violations

a) A supplier is in violation of a treatment technique requirement if the following is true:

1) Filtration is required because either of the following:

A) The supplier fails to meet any one of the criteria in Section 611.231 and 611.232; or

B) The Agency has determined, pursuant to Section 611.211, that filtration is required; and

2) The supplier fails to install filtration by the date specified in Section 611.230.

b) A supplier ~~which~~ that has not installed filtration is in violation of a treatment technique requirement if either of the following is true:

1) The turbidity level (measured as specified in Section 611.531(d) and 611.532(b)) in a representative sample of the source water immediately prior to the first or only point of disinfection application exceeds 5 NTU; or

2) The system is identified as a source of a waterborne disease outbreak.

BOARD NOTE: Derived from 40 CFR 141.71(c) ~~(1989), as amended at 54 Fed. Reg. 27526, June 29, 1989~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.240 Disinfection

a) A supplier that uses a surface water source and does not provide filtration treatment ~~shall~~ must 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~~ must 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~~ a SEP issued pursuant to Section 611.110, 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~~

must 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~~ must 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 ~~(1992)~~ (2002).

g) CWS suppliers using groundwater ~~which~~ that is not under the direct influence of surface water ~~shall~~ must 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 [415 ILCS 5/17(b)].

1) All GWS supplies that are required to chlorinate pursuant to this Section ~~shall~~ must 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~~ that 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 27 Ill. Reg. ________, effective ______________________)

Section 611.241 Unfiltered PWSs

Each supplier that does not provide filtration treatment ~~shall~~ must provide disinfection treatment as follows:

a) The disinfection treatment must be sufficient to ensure at least 99.9 percent (3-log) inactivation of Giardia lamblia cysts and 99.99 percent (4-log) inactivation of viruses, every day the system serves water to the public, except any one day each month. Each day a system serves water to the public, the supplier ~~shall~~ must calculate the $CT_{99.9}$ ~~value(s)~~ values from the system's treatment parameters using the procedure specified in Section 611.532(c) and determine whether this ~~value(s)~~ values is sufficient to achieve the specified inactivation rates for Giardia lamblia cysts and viruses.

1) If a system uses a disinfectant other than chlorine, the system may demonstrate to the Agency, through the use of an Agency-approved protocol for on-site disinfection challenge studies or other information, that $CT_{99.9}$ values other than those specified in ~~Section 611.~~Appendix B of this Part, Tables 2.1 and 3.1 or other operational parameters are adequate to demonstrate that the system is achieving minimum inactivation rates required by this subsection.

2) The demonstration must be made by way of ~~special exception permit~~ a SEP application pursuant to Section 611.110.

b) The disinfection system must have either of the following:

1) Redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system; or

2) Automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 mg/~~L~~ℓ of RDC in the water. If the Agency determines, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, that automatic shut-off would cause unreasonable risk to health or interfere with fire protection, the system ~~shall~~ must comply with subsection (b)(1).

c) The RDC in the water entering the distribution system, measured as specified in ~~Section~~ Sections 611.531(e) and 611.532(e), cannot be less than 0.2 mg/~~L~~ℓ for more than 4 hours.

d) RDC in the distribution system.

1) The RDC in the distribution system, measured as total chlorine, combined chlorine or chlorine dioxide, as specified in ~~Section Section~~ Sections 611.531(e) and 611.532(f), cannot be undetectable in more than 5 percent of the samples each month for any two consecutive months that the system serves water to the public. Water in the distribution system with HPC less than or equal to 500/ml, measured as specified in Section 611.531(c), is deemed to have a detectable RDC for purposes of determining compliance with this requirement. Thus, the value "V" in the following formula cannot exceed 5 percent in one month, for any two consecutive months.

~~V = 100(c + d + e) / (a + b)~~

$$V = \frac{100(c + d + e)}{(a + b)}$$

where the terms mean the following:

a = Number of instances where the RDC is measured~~.~~;

b = Number of instances where the RDC is not measured, but HPC is measured~~.~~;

c = Number of instances where the RDC is measured but not detected and no HPC is measured~~.~~;

d = Number of instances where the RDC is measured but not detected, and where the HPC is greater than 500/ml~~. And,~~; and

e = Number of instances where the RDC is not measured and HPC is greater than 500/ml.

2) Subsection (d)(1) does not apply if the Agency determines, pursuant to Section 611.213, that a supplier has no means for having a sample analyzed for HPC.

BOARD NOTE: Derived from 40 CFR 141.72(a)~~ (1991)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.242 Filtered PWSs

Each supplier that provides filtration treatment ~~shall~~ must provide disinfection treatment as follows:

a) The disinfection treatment must be sufficient to ensure that the total treatment processes of that system achieve at least 99.9 percent (3-log) inactivation ~~and/~~or removal of Giardia lamblia cysts and at least 99.99 percent (4-log) inactivation ~~and/~~or removal of viruses.

b) The RDC in the water entering the distribution system, measured as specified in Section 611.531(e) and 611.533(b), cannot be less than 0.2 mg/~~L~~ℓ for more than 4 hours.

c) RDC in the distribution system.

1) The RDC in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in Section 611.531(e) and 611.533(c), cannot be undetectable in more than 5 percent of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with HPC less than or equal to 500/ml, measured as specified in Section 611.531(c), is deemed to have a detectable RDC for purposes of determining compliance with this requirement. Thus, the value "V" in the following formula cannot exceed 5 percent in one month, for any two consecutive months.

$$V = 100(c + d + e) / (a + b)$$

where the terms mean the following:

a = Number of instances where the RDC is measured.

b = Number of instances where the RDC is not measured, but HPC is measured.

c = Number of instances where the RDC is measured but not detected and no HPC is measured.

d = Number of instances where the RDC is measured but not detected, and where HPC is greater than 500/ml~~. And,~~; and

e = Number of instances where the RDC is not measured and HPC is greater than 500/ml.

2) Subsection (c)(1) does not apply if the Agency determines, pursuant to Section 611.213, that a supplier has no means for having a sample analyzed for HPC.

BOARD NOTE: Derived from 40 CFR 141.72(b)~~ (1989), as amended at 54 Fed. Reg. 27526, June 29, 1989~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.250 Filtration

A supplier that uses a surface water source or a groundwater source under the direct influence of surface water, and does not meet all of the criteria in Sections 611.231 and 611.232 for avoiding filtration, must provide treatment consisting of both disinfection, as specified in Section 611.242, and filtration treatment that complies with the requirements of subsection (a), (b), (c), (d), or (e) by June 29, 1993, or within 18 months after the failure to meet any one of the criteria for avoiding filtration in Sections 611.231 and 611.232, whichever is later. Failure to meet any requirement after the date specified in this introductory paragraph is a treatment technique violation.

a) Conventional filtration treatment or direct filtration.

1) For a system using conventional filtration or direct filtration, the turbidity level of representative samples of the system's filtered water must be less than or equal to 0.5 NTU in at least 95 percent of the measurements taken each month, except that if the Agency determines, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, that the system is capable of achieving at least 99.9 percent removal or inactivation of Giardia lamblia cysts at some turbidity level higher than 0.5 NTU in at least 95 percent of the measurements taken each month, the Agency must substitute this higher turbidity limit for that system. However, in no case may the Agency approve a turbidity limit that allows more than 1 NTU in more than ~~5~~ five percent of the samples taken each month.

2) The turbidity level of representative samples of a system's filtered water must at no time exceed 5 NTU.

3) Beginning January 1, 2001, a supplier serving at least 10,000 or more persons must meet the turbidity requirements of Section 611.743(a).

4) Beginning January 1, 2005, a supplier that serves fewer than 10,000 people must meet the turbidity requirements in Section 611.955.

b) Slow sand filtration.

1) For a system using slow sand filtration, the turbidity level of representative samples of the system's filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month, except that if the Agency determines, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, that there is no significant interference with disinfection at a higher level, the Agency must substitute the higher turbidity limit for that system.

2) The turbidity level of representative samples of a system's filtered water must at no time exceed 5 NTU.

c) Diatomaceous earth filtration.

1) For a system using diatomaceous earth filtration, the turbidity level of representative samples of the system's filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month.

2) The turbidity level of representative samples of a system's filtered water

must at no time exceed 5 NTU.

d) Other filtration technologies. A supplier may use a filtration technology not listed in subsections (a) through (c) if it demonstrates, by ~~special exception permit~~ a SEP application pursuant to Section 611.110, to the Agency, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of Section 611.242, consistently achieves 99.9 percent removal or inactivation of Giardia lamblia cysts and 99.99 percent removal or inactivation of viruses. For a supplier that makes this demonstration, the requirements of subsection (b) apply. Beginning January 1, 2002, a supplier serving 10,000 or more persons must meet the requirements for other filtration technologies in Section 611.743(b). Beginning January 1, 2005, a supplier that serves fewer than 10,000 people must meet the requirements for other filtration technologies in Section 611.955.

BOARD NOTE: Derived from 40 CFR 141.73 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.261 Unfiltered PWSs: Reporting and Recordkeeping

A supplier that uses a surface water source and does not provide filtration treatment must report monthly to the Agency the information specified in this Section beginning December 31, 1990, unless the Agency has determined that filtration is required, in which case the Agency must, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, specify alternative reporting requirements, as appropriate, until filtration is in place. A supplier that uses a groundwater source under the direct influence of surface water and does not provide filtration treatment must report monthly to the Agency the information specified in this Section beginning December 31, 1990, or six months after the Agency determines that the groundwater source is under the direct influence of surface water, whichever is later, unless the Agency has determined that filtration is required, in which case the Agency must, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, specify alternative reporting requirements, as appropriate, until filtration is in place.

a) Source water quality information must be reported to the Agency within ten days after the end of each month the system serves water to the public. Information that must be reported includes the following:

1) The cumulative number of months for which results are reported.

2) The number of fecal or total coliform samples, whichever are analyzed during the month (if a system monitors for both, only fecal coliforms must be reported), the dates of sample collection, and the dates when the turbidity level exceeded 1 NTU.

3) The number of samples during the month that had equal to or fewer than

20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever are analyzed.

4) The cumulative number of fecal or total coliform samples, whichever are analyzed, during the previous six months the system served water to the public.

5) The cumulative number of samples that had equal to or fewer than 20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever are analyzed, during the previous six months the system served water to the public.

6) The percentage of samples that had equal to or fewer than 20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever are analyzed, during the previous six months the system served water to the public.

7) The maximum turbidity level measured during the month, the dates of occurrence for any measurements that exceeded 5 NTU and the dates the occurrences were reported to the Agency.

8) For the first 12 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after one year of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 12 months the system served water to the public.

9) For the first 120 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after ten years of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 120 months the system served water to the public.

b) Disinfection information specified in Section 611.532 must be reported to the Agency within ten days after the end of each month the system serves water to the public. Information that must be reported includes the following:

1) For each day, the lowest measurement of RDC in mg/~~L~~ℓ in water entering the distribution system.

2) The date and duration of each period when the RDC in water entering the distribution system fell below 0.2 mg/~~L~~ℓ and when the Agency was notified of the occurrence.

3) The daily RDCs (in mg/~~L~~ℓ) and disinfectant contact times (in minutes) used for calculating the CT values.

4) If chlorine is used, the daily measurements of pH of disinfected water following each point of chlorine disinfection.

5) The daily measurements of water temperature in degrees C following each point of disinfection.

6) The daily CTcalc and Ai values for each disinfectant measurement or sequence and the sum of all Ai values (B) before or at the first customer.

7) The daily determination of whether disinfection achieves adequate Giardia cyst and virus inactivation, i.e., whether Ai is at least 1.0 or, where disinfectants other than chlorine are used, other indicator conditions that the Agency, pursuant to Section 611.241(a)(1), determines are appropriate, are met.

8) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to Section 611.240 through 611.242:

A) Number of instances where the RDC is measured;

B) Number of instances where the RDC is not measured but HPC is measured;

C) Number of instances where the RDC is measured but not detected and no HPC is measured;

D) Number of instances where no RDC is detected and where HPC is greater than 500/ml;

E) Number of instances where the RDC is not measured and HPC is greater than 500/ml;

F) For the current and previous month the system served water to the public, the value of “V” in the following formula:

$$V = \frac{100(c + d + e)}{(a + b)}$$

where the terms mean the following:

a = Value in subsection (b)(8)(A) of this Section;

b = Value in subsection (b)(8)(B) of this Section;

c = Value in subsection (b)(8)(C) of this Section;

d = Value in subsection (b)(8)(D) of this Section; and

e = Value in subsection (b)(8)(E) of this Section.

G) The requirements of subsections (b)(8)(A) through (b)(8)(F) of this Section do not apply if the Agency determines, pursuant to Section 611.213, that a system has no means for having a sample analyzed for HPC.

9) A system need not report the data listed in subsections (b)(1) and (b)(3) through (b)(6) of this Section, if all data listed in subsections (b)(1) through (b)(8) of this Section remain on file at the system, and the Agency determines, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, that the following is true:

A) The system has submitted to the Agency all the information required by subsections (b)(1) through (b)(8) of this Section for at least 12 months; and

B) The Agency has determined that the system is not required to provide filtration treatment.

c) By October 10 of each year, each system must provide to the Agency a report that summarizes its compliance with all watershed control program requirements specified in Section 611.232(b).

d) By October 10 of each year, each system must provide to the Agency a report on the on-site inspection conducted during that year pursuant to Section 611.232(c), unless the on-site inspection was conducted by the Agency. If the inspection was conducted by the Agency, the Agency must provide a copy of its report to the supplier.

e) Reporting health threats.

1) Each system, upon discovering that a waterborne disease outbreak potentially attributable to that water system has occurred, must report that occurrence to the Agency as soon as possible, but no later than by the end of the next business day.

2) If at any time the turbidity exceeds 5 NTU, the system must consult with the Agency as soon as practical, but no later than 24 hours after the exceedence is known, in accordance with the public notification requirements under Section 611.903(b)(3).

3) If at any time the RDC falls below 0.2 mg/~~L~~ℓ in the water entering the distribution system, the system must notify the Agency as soon as possible, but no later than by the end of the next business day. The system also must notify the Agency by the end of the next business day whether or not the RDC was restored to at least 0.2 mg/~~L~~ℓ within four hours.

BOARD NOTE: Derived from 40 CFR 141.75(a) ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.262 Filtered PWSs: Reporting and Recordkeeping

A supplier that uses a surface water source or a groundwater source under the direct influence of surface water and provides filtration treatment must report monthly to the Agency the information specified in this Section.

a) Turbidity measurements as required by Section 611.533(a) must be reported within ten days after the end of each month the supplier serves water to the public. Information that must be reported includes the following:

1) The total number of filtered water turbidity measurements taken during the month.

2) The number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits specified in Section 611.250 for the filtration technology being used.

3) The date and value of any turbidity measurements taken during the month that exceed 5 NTU.

b) Disinfection information specified in Section 611.533 must be reported to the Agency within ten days after the end of each month the supplier serves water to the public. Information that must be reported includes the following:

1) For each day, the lowest measurement of RDC in mg/~~L~~ℓ in water entering the distribution system.

2) The date and duration of each period when the RDC in water entering the distribution system fell below 0.2 mg/~~L~~ℓ and when the Agency was notified of the occurrence.

3) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to Sections 611.240 through 611.242:

A) Number of instances where the RDC is measured;

B) Number of instances where the RDC is not measured but HPC is measured;

C) Number of instances where the RDC is measured but not detected and no HPC is measured;

D) Number of instances where no RDC is detected and where HPC is greater than 500/ml;

E) Number of instances where the RDC is not measured and HPC is greater than 500/ml;

F) For the current and previous month the supplier serves water to the public,the value of "V" in the following formula:

$$V = \frac{100(c + d + e)}{(a + b)}$$

where the terms mean the following:

a = Value in subsection (b)(3)(A) of this Section;

b = Value in subsection (b)(3)(B) of this Section;

c = Value in subsection (b)(3)(C) of this Section;

d = Value in subsection (b)(3)(D) of this Section; and

e = Value in subsection (b)(3)(E) of this Section.

G) Subsections (b)(3)(A) through (b)(3)(F) of this Section do not apply if the Agency determines, pursuant to Section 611.213, that a supplier has no means for having a sample analyzed for HPC.

c) Reporting health threats.

1) Each supplier, upon discovering that a waterborne disease outbreak potentially attributable to that water system has occurred, must report that

occurrence to the Agency as soon as possible, but no later than by the end of the next business day.

2) If at any time the turbidity exceeds 5 NTU, the supplier must consult with the Agency as soon as practical, but no later than 24 hours after the exceedence is known, in accordance with the public notification requirements under Section 611.903(b)(3).

3) If at any time the residual falls below 0.2 mg/~~L~~ℓ in the water entering the distribution system, the supplier must notify the Agency as soon as possible, but no later than by the end of the next business day. The supplier also must notify the Agency by the end of the next business day whether or not the residual was restored to at least 0.2 mg/~~L~~ℓ within four hours.

BOARD NOTE: Derived from 40 CFR 141.75(b)~~ (2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.271 Protection during Repair Work

The supplier ~~shall~~ must prevent contamination of water at the source or in the CWS during repair, reconstruction, or alteration.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.272 Disinfection ~~following~~ Following Repair

a) After any portion of the CWS has been repaired, reconstructed, or altered, the supplier ~~shall~~ must disinfect that portion before putting it into operation.

b) The disinfection procedure must be approved by~~ special exception permit~~ a SEP issued pursuant to Section 611.110.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.276 Recycle Provisions

a) Applicability. A Subpart B system supplier that employs conventional filtration or direct filtration treatment and which recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet the requirements in subsections (b) through (d) of this Section.

b) Reporting. A supplier must notify the Agency in writing by December 8, 2003, if the supplier recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must include, at a minimum, the information specified in subsections (b)(1) and (b)(2) of this Section, as follows:

1) A plant schematic showing the origin of all flows that are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are re-introduced back into the treatment plant.

2) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and Agency-approved operating capacity for the plant where the Agency has made such a determination.

c) Treatment technique requirement. Any supplier that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of the supplier's existing conventional or direct filtration system, as defined in Section 611.101, or at an alternative location approved by a permit issued by the Agency by June 8, 2004. If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements must be completed no later than June 8, 2006.

d) Recordkeeping. The supplier must collect and retain on file recycle flow information specified in subsections (d)(1) through (d)(6) of this Section for review and evaluation by the Agency beginning June 8, 2004, as follows:

1) A copy of the recycle notification and information submitted to the State under subsection (b) of this Section.

2) A list of all recycle flows and the frequency with which they are returned.

3) The average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

4) The typical filter run length and a written summary of how filter run length is determined.

5) The type of treatment provided for the recycle flow.

6) Data on the physical dimensions of the equalization or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which

solids are removed, if applicable.

BOARD NOTE: Derived from 40 CFR 141.76~~, as added at 66 Fed. Reg. 31103 (June 8, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART C: USE OF NON-CENTRALIZED TREATMENT DEVICES

Section 611.280 Point-of-Entry Devices

a) Suppliers may use point-of-entry devices to comply with MCLs only if they meet the requirements of this Section.

b) It is the responsibility of the supplier to operate and maintain the point-of entry treatment system.

c) The supplier ~~shall~~ must develop a monitoring plan before point-of-entry devices are installed for compliance.

1) Point-of-entry devices must provide health protection equivalent to central water treatment. “Equivalent” means that the water would meet all NPDWR and would be of acceptable quality similar to water distributed by a well-operated central treatment plant.

2) In addition to the VOCs, monitoring must include physical measurements and observations such as total flow treated and mechanical condition of the treatment equipment.

3) Use of point-of-entry devices must be approved by a SEP granted by the Agency pursuant to Section 611.110.

d) Effective technology must be properly applied under a plan approved by the Agency and the microbiological safety of the water must be maintained.

1) The Agency ~~shall~~ must require adequate certification of performance, field testing, and, if not included in the certification process, a rigorous engineering design review of the point-of-entry devices.

2) The design and application of the point-of-entry devices must consider the tendency for increase in heterotrophic bacteria concentrations in water treated with activated carbon. The Agency may require, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, frequent backwashing, post-contactor disinfection and HPC monitoring to ensure that the microbiological safety of the water is not compromised.

e) All consumers must be protected. Every building connected to the system must have a point-of-entry device installed, maintained and adequately monitored. The Agency must be assured that every building is subject to treatment and monitoring, and that the rights and responsibilities of the PWS customer convey with title upon sale of property.

f) Use of any point-of-entry device must 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 141.100 and 142.62(h)(7) ~~(1992)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.290 Use of Point-of-Use Devices or Bottled Water

a) Suppliers ~~shall~~ must not use bottled water to achieve compliance with an MCL.

b) Bottled water or point-of-use devices may be used on a temporary basis to avoid an unreasonable risk to health pursuant to a SEP granted by the Agency under Section 611.110.

c) Any use of bottled water must comply with the substantive requirements of Section 611.130(e), except that the supplier ~~shall~~ must submit its quality control plan for Agency review as part of its SEP request, rather than for Board review.

BOARD NOTE: Derived from 40 CFR 141.101 ~~(1998)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART D: TREATMENT TECHNIQUES

Section 611.295 General Requirements

The requirements of this Subpart D constitute NPDWRs. This Subpart D establishes treatment techniques in lieu of MCLs for specified contaminants.

BOARD NOTE: Derived from 40 CFR 141.110 ~~(1991)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.296 Acrylamide and Epichlorohydrin

a) Each supplier ~~shall~~ must certify annually in writing to the Agency that when products containing acrylamide or epichlorohydrin are used in the PWS, the product of monomer level and dose does not exceed the levels specified in subsection (b). The product of monomer level and dose are computed as follows:

P = ~~A * B~~ A × B

Where the terms mean the following:

A = Percent by weight of unreacted monomer in the product used~~.~~;

B = Parts per million by weight of finished water at which the product is dosed~~.~~; and

P = Product of monomer level and dose~~:~~.

b) Maximum Product of monomer level and dose is the following:

1) For acrylamide, P = 0.05; and

2) For epichlorohydrin, P = 0.20.

c) Suppliers' certifications may rely on manufacturers or third parties, as approved by the Agency.

BOARD NOTE: Derived from 40 CFR 141.111 ~~(1991)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

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

Section 611.300 Old MCLs for Inorganic ~~Chemicals~~ Chemical Contaminants

a) The old MCLs listed in subsection (b) of this Section for inorganic ~~chemicals~~ chemical contaminants (IOCs) apply only to CWS suppliers. Compliance with old MCLs for inorganic chemicals is calculated pursuant to Section 611.612, except that analyses and determination of compliance with the 0.05 mg/~~L~~ℓ MCL for arsenic are to be performed pursuant to Sections 611.600 through 611.611.

BOARD NOTE: Derived from 40 CFR 141.11(a) ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

b) The following are the old MCLs for ~~inorganic chemicals~~ IOCs:

Contaminant	Level, mg/~~L~~ℓ	Additional State Requirement (*)

Arsenic, until January 23, 2006	0.05	
Iron	1.0	*
Manganese	0.15	*
Zinc	5.	*

BOARD NOTE: Derived from 40 CFR 141.11(b)~~ (2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002). This subsection (b) will become an additional State requirement after expiration of the old arsenic MCL on the January 23, 2006 effective date of the federal amendments that instituted a new MCL for Arsenic.

c) This subsection corresponds with 40 CFR 141.11(c)~~ (2000)~~, marked as reserved by USEPA. This statement maintains structural parity with the federal rules.

d) Nitrate.

Non-CWSs may exceed the MCL for nitrate under the following circumstances:

1) The nitrate level must not exceed 20 mg/~~L~~ℓ,

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

3) The NCWS supplier is meeting the public notification requirements under Section 611.909, including continuous posting of the fact that the nitrate level exceeds 10 mg/~~L~~ℓ together with the potential health effects of exposure,

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

5) No adverse public health effects result.

BOARD NOTE: Derived from 40 CFR 141.11(d)~~ (2000)~~ (2002). The Department of 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 MCLs listed in subsection (b) of this Section for iron and manganese:

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

2) The Agency may, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, 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~~ a SEP issued pursuant to Section 611.110.

BOARD NOTE: The requirements of this subsection (e) ~~of this Section~~ are an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.301 Revised MCLs for Inorganic ~~Chemicals~~ Chemical Contaminants

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

b) The MCLs in the following table apply to CWSs. Except for fluoride, the MCLs also apply to NTNCWSs. The MCLs for nitrate, nitrite, and total nitrate and nitrite also apply to transient non-CWSs.

Contaminant	MCL	Units
Antimony	0.006	mg/~~L~~ℓ
Arsenic (effective January 23, 2006)	0.01	mg/~~L~~ℓ
Asbestos	7	MFL
Barium	2	mg/~~L~~ℓ
Beryllium	0.004	mg/~~L~~ℓ
Cadmium	0.005	mg/~~L~~ℓ
Chromium	0.1	mg/~~L~~ℓ
Cyanide (as free CN^-)	0.2	mg/~~L~~ℓ
Fluoride	4.0	mg/~~L~~ℓ
Mercury	0.002	mg/~~L~~ℓ
Nitrate (as N)	10	mg/~~L~~ℓ
Nitrite (as N)	1	mg/~~L~~ℓ
Total Nitrate and Nitrite (as N)	10	mg/~~L~~ℓ
Selenium	0.05	mg/~~L~~ℓ
Thallium	0.002	mg/~~L~~ℓ

BOARD NOTE: See Section 611.300(d) for an elevated nitrate level for non-CWSs. USEPA removed and reserved the MCL for nickel on June 29, 1995, at 60 Fed. Reg. 33932, as a result of a judicial order in Nickel Development Institute v. EPA, No. 92-1407, and Specialty Steel Industry of the U.S. v. Browner, No. 92-1410 (D.C. Cir. Feb. 23 & Mar. 6, 1995), while retaining the contaminant, analytical methodology, and detection limit listings for this contaminant.

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

Contaminant	~~BAT(s)~~ BATs
Antimony	C/F RO
Arsenic (BATs for As^{V}. Pre-oxidation may be required to convert As^{III} to As^{V}.)	AAL C/F IX LIME RO ED O/F (To obtain high removals, the iron to arsenic ratio must be at least 20:1)
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~~ℓ GAC LIME, BAT only if influent Hg concentrations ≤ 10 µg/~~L~~ℓ RO, BAT only if influent Hg concentrations ≤ 10 µg/~~L~~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 (not BAT for a system that has fewer than 500 service connections)
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

O/F Oxidation/filtration

d) At 40 CFR 141.62(d)~~, as added at 66 Fed. Reg. 7064 (January 22, 2001)~~ (2002), USEPA identified the following as the affordable technology, treatment technique, or other means available to systems serving 10,000 persons or fewer for achieving compliance with the maximum contaminant level for arsenic:

Small System Compliance Technologies (SSCTs)[1] for Arsenic[2]

Small system compliance technology	Affordable for listed small system categories[3]
Activated alumina (centralized)	All size categories
Activated alumina (point-of-use)[4]	All size categories
Coagulation/filtration[5]	501-3,300 persons, 3,301-10,000 persons
Coagulation-assisted microfiltration	501-3,300 persons, 3,301-10,000 persons
Electrodialysis reversal[6]	501-3,300 persons, 3,301-10,000 persons
Enhanced coagulation/filtration	All size categories
Enhanced lime softening (pH> 10.5)	All size categories
Ion exchange	All size categories
Lime softening[5]	501-3,300 persons, 3,301-10,000 persons
Oxidation/filtration[7]	All size categories
Reverse osmosis (centralized)[6]	501-3,300 persons, 3,301-10,000 persons
Reverse osmosis (point-of-use)[4]	All size categories

[1] Section 1412(b)(4)(E)(ii) of the federal SDWA (42 USC 300g-1(b)(4)(E)(ii)) specifies that SSCTs must be affordable and technically feasible for a small system supplier.

[2] SSCTs for As^{V}. Pre-oxidation may be required to convert As^{III} to As^{V}.

[3] The federal SDWA specifies three categories of small system suppliers: (1) those serving 25 or more, but fewer than 501 persons, (2) those serving more than 500 but fewer than 3,301 persons, and (3) those serving more than 3,300 but fewer than 10,001 persons.

[3] The federal SDWA specifies three categories of small system suppliers: (1) those serving 25 or more, but fewer than 501, (2) those serving more than 500, but fewer than 3,301, and (3) those serving more than 3,300, but fewer than 10,001.

[4] When POU or POE devices are used for compliance, programs to ensure proper long-term operation, maintenance, and monitoring must be provided by the water supplier to ensure adequate performance.

[5] Unlikely to be installed solely for arsenic removal. May require pH adjustment to optimal range if high removals are needed.

[6] Technologies reject a large volume of water--may not be appropriate for areas where water quantity may be an issue.

[7] To obtain high removals, iron to arsenic ratio must be at least 20:1.

BOARD NOTE: Derived from 40 CFR 141.62 ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

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

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

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

BOARD NOTE: Originally derived from 40 CFR 141.12(a)(1994), USEPA removed the last entry in this subsection and marked it reserved at 57 Fed. Reg. 31838 (July 17, 1992). USEPA added another listing of organic MCLs at 40 CFR 141.61 ~~(2000)~~ (2002). Heptachlor, heptachlor epoxide, and 2,4-D appear in both this Section and in Section 611.311, with a different MCL in each Section. The heptachlor, heptachlor epoxide, and 2,4-D MCLs in this Section are Illinois limitations that are more stringent than the federal requirements. However, detection of these contaminants or violation of their federally-derived revised Section 611.311 MCLs imposes more stringent monitoring, reporting, and notice requirements.

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

BOARD NOTE: Originally derived from 40 CFR 141.12(b) ~~(2000)~~ (2002), USEPA removed the last entry in this subsection and marked it reserved at 56 Fed. Reg. 3578 (Jan. 30, 1991). See the preceding Board Note regarding the dual listing of MCLs for 2,4-D.

c) TTHM 0.10 *

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

2) The MCL of 0.10 mg/~~L~~ℓ for TTHM applies to a CWS supplier that uses only groundwater not under the direct influence of surface water and serves 10,000 or more persons, until December 31, 2003.

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

BOARD NOTE: Derived from 40 CFR 141.12 ~~(2000)~~ (2002). This is an additional State requirement to the extent that it applies to a supplier other than a CWS supplier that adds a disinfectant at any part of treatment and which provides water to 10,000 or more persons. The new MCL for TTHM is listed in Section 611.312.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.311 Revised MCLs for Organic Chemical Contaminants

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

CAS No.	Contaminant	MCL (mg/~~L~~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) ~~U.S. EPA~~ USEPA has identified, as indicated below, granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OX) as BAT for achieving compliance with the MCLs for volatile organic chemical contaminants (VOCs) and synthetic organic chemical contaminants (SOCs) in subsections (a) and (c) 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
93-72-1	2,4,5-TP	GAC
75-01-4	Vinyl chloride	PTA
1330-20-7	Xylene	GAC, PTA

* See the Board note appended to the end of this Section.

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~~ were effective January 17, 1994.

CAS Number	Contaminant	MCL (mg/~~L~~ℓ)
15972-60-8	Alachlor	0.002
116-06-3	Aldicarb*	0.002
1646-87-4	Aldicarb sulfone*	0.002
1646-87-3	Aldicarb sulfoxide*	0.004
1912-24-9	Atrazine	0.003
50-32-8	Benzo~~[~~(a~~]~~)pyrene	0.0002
1563-66-2	Carbofuran	0.04
57-74-9	Chlordane	0.002
94-75-7	2,4-D	0.07

75-99-0	Dalapon	0.2
96-12-8	Dibromochloropropane	0.0002
103-23-1	Di(2-ethylhexyl)adipate	0.4
117-81-7	Di(2-ethylhexyl)phthalate	0.006
88-85-7	Dinoseb	0.007
85-00-7	Diquat	0.02
145-73-3	Endothall	0.1
72-20-8	Endrin	0.002
106-93-4	Ethylene dibromide	0.00005
1071-53-6	Glyphosate	0.7
76-44-8	Heptachlor	0.0004
1024-57-3	Heptachlor epoxide	0.0002
118-74-1	Hexachlorobenzene	0.001
77-47-4	Hexachlorocyclopentadiene	0.05
58-89-9	Lindane	0.0002
72-43-5	Methoxychlor	0.04
23135-22-0	Oxamyl (Vydate)	0.2
87-86-5	Pentachlorophenol	0.001
1918-02-1	Picloram	0.5
1336-36-3	Polychlorinated biphenyls (PCBs)	0.0005
122-34-9	Simazine	0.004
1746-01-6	2,3,7,8-TCDD (Dioxin)	0.00000003
8001-35-2	Toxaphene	0.003
93-72-1	2,4,5-TP	0.05

* See the Board note appended to the end of this Section.

BOARD NOTE: Derived from 40 CFR 141.61 ~~(1994)~~ (2002). See the definition of "initial compliance period" at Section 611.101. More stringent state MCLs for 2,4-D, heptachlor, and heptachlor epoxide appear at Section 611.310. See the Board Note at that provision. In 40 C.F.R. 141.6(g), USEPA postponed 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~~until it took further action on those MCLs. ~~However, suppliers must monitor for these three SOCs pursuant to Section 611.648.~~ See 40 CFR 141.6(g) ~~(1994)~~ and 57 Fed. Reg. 22178 (May 27, 1992). USEPA has stated that it anticipates taking no action until 2005 on a federal national primary drinking water regulation (NPDWR) applicable to the aldicarbs. 68 Fed. Reg. 31108 (May 27, 2003). No aldicarb requirements apply in Illinois until after USEPA adopts such requirements, and the Board removes this statement.

(Source: Amended at 27 Ill. Reg. ________, effective _______________________)

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

a) The maximum contaminant levels (MCLs) for disinfection byproducts (DBPs) are as follows:

Disinfection byproduct	MCL (mg/~~L~~ℓ)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060
Bromate	0.010
Chlorite	1.0

b) Compliance dates.

1) CWSs and NTNCWSs. A Subpart B system supplier serving 10,000 or more persons must comply with this Section beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons or a supplier using only groundwater not under the direct influence of surface water must comply with this Section beginning January 1, 2004.

2) A PWS that is installing GAC or membrane technology to comply with this Section may apply to the Board for an extension of up to 24 months past the dates in subsection (b)(1) of this Section, but not beyond December 31, 2003. The Board must grant the extension, and must set a schedule for compliance and may specify any interim measures that the PWS must take. Failure to meet the schedule or interim treatment requirements constitutes a violation of an NPDWR.

c) The following are identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for disinfection byproducts (DBPs) identified in subsection (a) of this Section.

Disinfection byproduct (DBP)	Best available technology (BAT)
TTHM	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant
HAA5	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant
Bromate	Control of ozone treatment process to reduce production of bromate
Chlorite	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels

BOARD NOTE: Derived from 40 CFR 141.64 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.313 Maximum Residual Disinfectant Levels (MRDLs)

a) Maximum residual disinfectant levels (MRDLs) are as follows:

Disinfectant residual	MRDL (mg/~~L~~ℓ)
Chlorine	4.0 (as Cl_2)
Chloramines	4.0 (as Cl_2)
Chlorine dioxide	0.8 (as ClO_2)

b) Compliance dates.

1) CWSs and NTNCWSs. A Subpart B system supplier serving 10,000 or more persons must comply with this Section beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons or a supplier using only groundwater not under the direct influence of surface water must comply with this Section beginning January 1, 2004.

2) Transient NCWSs. A Subpart B system supplier serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant or a supplier using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

c) The following are identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum residual disinfectant levels identified in subsection (a) of this Section: control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

BOARD NOTE: Derived from 40 CFR 141.65~~ (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.320 Turbidity (Repealed)

~~This Section applies to unfiltered PWSs until December 30, 1991, unless the Agency or Public Health has determined, pursuant to Section 611.211, prior to that date that filtration is required. This Section applies to filtered systems until June 29, 1993. This Section applies to unfiltered systems that the Agency has determined, pursuant to Section 611.211, must install filtration, until June 29, 1993, or until filtration is installed, whichever is later. The MCLs for turbidity are applicable to both CWS suppliers and non-CWS suppliers using surface water sources in whole~~

~~or in part. The MCLs for turbidity in drinking water, measured at a representative entry point(s) to the distribution system, are:~~

~~a) One turbidity unit, as determined by a monthly average pursuant to Subpart M, except that five or fewer turbidity units are allowed if the supplier demonstrates, by special exception permit application, that the higher turbidity does not do any of the following:~~

~~1) Interfere with disinfection;~~

~~2) Prevent maintenance of an effective disinfectant agent throughout the distribution system; or~~

~~3) Interfere with microbiological determinations.~~

~~b) Five turbidity units based on an average for two consecutive days pursuant to Subpart M.~~

~~BOARD NOTE: Derived from 40 CFR 141.13 (1991).~~

(Source: Repealed at 27 Ill. Reg. ________, effective ______________________)

Section 611.325 Microbiological Contaminants

a) The MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.

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

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

b) Any fecal coliform-positive repeat sample or E. coli-positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positive or E. coli-positive routine sample, constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in Subpart V of this Part, this is a violation that may pose an acute risk to health.

c) A supplier must determine compliance with the MCL for total coliforms in subsections (a) and (b) of this Section for each month in which it is required to monitor for total coliforms.

d) BATs for achieving compliance with the MCL for total coliforms in subsections (a) and (b) of this Section are the following:

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

2) Maintenance of RDC throughout the distribution system;

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

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

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

BOARD NOTE: Derived from 40 CFR 141.63 ~~(1999), as amended at 65 Fed. Reg. 26022, May 4, 2000~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.330 Maximum Contaminant Levels for Radionuclides

a) This subsection corresponds with 40 CFR 141.66(a), marked reserved by USEPA. This statement maintains structural consistency with USEPA rules.

b) MCL for combined radium-226 and –228. The maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/~~L~~ℓ. The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium-226 and the analysis for radium-228.

c) MCL for gross alpha particle activity (excluding radon and uranium). The maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/~~L~~ℓ.

d) Effective December 8, 2003, MCL for beta particle and photon radioactivity.

1) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than

4 millirem/year (mrem/year).

2) Except for the radionuclides listed in the following table, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents must be calculated on the basis of two liters per day drinking water intake, using the 168-hour data list set forth in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," incorporated by reference in Section 611.102, available from the NTIS. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ must not exceed 4 mrem/year.

Average Annual Concentrations Assumed to Produce a Total Body or Organ Dose of 4 mrem/yr

Radionuclide	Critical organ	pCi per liter
1. Tritium	Total body	20,000
2. Strontium-90	Bone Marrow	8

e) MCL for uranium. Effective December 8, 2003, the maximum contaminant level for uranium is 30 μg/~~L~~ℓ.

f) Compliance dates for combined radium-226 and -228, gross alpha particle activity, gross beta particle and photon radioactivity, and uranium: Effective December 8, 2003, a CWS supplier must comply with the MCLs listed in subsections (b) through (e) of this Section beginning December 8, 2003, and compliance must be determined in accordance with the requirements of Subpart Q of this Part. Compliance with reporting requirements for the radionuclides under Appendices A, G, and H of this Part is required before December 8, 2003.

g) Best available technologies (BATs) for radionuclides. USEPA has identified the technologies indicated in the following table as the BAT for achieving compliance with the MCLs for combined radium-226 and -228, uranium, gross alpha particle activity, and beta particle and photon radioactivity.

BAT for Combined Radium-226 and Radium-228, Uranium, Gross Alpha Particle Activity, and Beta Particle and Photon Radioactivity

Contaminant	BAT
1. Combined radium-226 and radium-228	Ion exchange, reverse osmosis, lime softening.
2. Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration.
3. Gross alpha particle activity (excluding Radon and Uranium)	Reverse osmosis.
4. Beta particle and photon radioactivity	Ion exchange, reverse osmosis.

h) Small systems compliance technologies list for radionuclides.

List of Small Systems Compliance Technologies for Radionuclides and Limitations to Use

Unit technologies	Limitations (see footnotes)	Operator skill level required[1]	Raw water quality range and considerations[1]
1. Ion exchange (IE)	(a)	Intermediate	All ground waters.
2. Point of use (POU[2]) IE	(b)	Basic	All ground waters.
3. Reverse osmosis (RO)	(c)	Advanced	Surface waters usually require pre-filtration.
4. POU[2] RO	(b)	Basic	Surface waters usually require pre-filtration.
5. Lime softening	(d)	Advanced	All waters.
6. Green sand filtration	(e)	Basic	
7. Co-precipitation with Barium sulfate	(f)	Intermediate to Advanced	Ground waters with suitable water quality.
8. Electrodialysis/ electrodialysis reversal		Basic to Intermediate	All ground waters.
9. Pre-formed hydrous Manganese oxide filtration	(g)	Intermediate	All ground waters.
10. Activated alumina	(a), (h)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency.
11. Enhanced coagulation/ filtration	(i)	Advanced	Can treat a wide range of water qualities.

[1] National Research Council (NRC). "Safe Water from Every Tap: Improving Water Service to Small Communities," National Academy Press, Washington, D.C. 1997.

[2] A POU, or "point-of-use" technology is a treatment device installed at a

single tap used for the purpose of reducing contaminants in drinking water at that one tap. POU devices are typically installed at the kitchen tap.
BOARD NOTE: USEPA refers the reader to the notice of data availability (NODA) at 66 Fed. Reg. 21576 (April 21, 2000) for more details.

Limitations Footnotes: Technologies for Radionuclides:

(a) The regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology.

(b) When POU devices are used for compliance, programs for long-term operation, maintenance, and monitoring must be provided by water utility to ensure proper performance.

(c) Reject water disposal options should be carefully considered before choosing this technology.

BOARD NOTE: In corresponding 40 CFR 141.66, Table C, footnote c states in part as follows: "See other RO limitations described in the SWTR Compliance Technologies Table." Table C was based in significant part on "Table 13.—Technologies for Radionuclides" that appears at 63 Fed. Reg. 42032 at 42043 (August 6, 1998), which refers to "Table 2.—SWTR Compliance Technology Table: Filtration." That Table 2 lists the limitations on RO as follows:

[d] Blending (combining treated water with untreated raw water) cannot be practiced at risk of increasing microbial concentrations in finished water.

[e] Post-disinfection recommended as a safety measure and for residual maintenance.

[f] Post-treatment corrosion control will be needed prior to distribution.

63 Fed. Reg. at 42036.

(d) The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for small surface water systems.

(e) Removal efficiencies can vary depending on water quality.

(f) This technology may be very limited in application to small systems. Since the process requires static mixing, detention basins, and filtration, it is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.

(g) This technology is most applicable to small systems that already have filtration in place.

(h) Handling of chemicals required during regeneration and pH adjustment may be too difficult for small systems without an adequately trained operator.

(i) Assumes modification to a coagulation/filtration process already in place.

Compliance Technologies by System Size Category for Radionuclide NPDWRs

Contaminant	Compliance technologies[1] for system size categories (population served)		
	25-500	501-3,300	3,300-10,000
1. Combined radium-226 and radium-228	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9
2. Gross alpha particle activity	3, 4	3, 4	3, 4
3. Beta particle activity and photon activity	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
4. Uranium	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11	1, 2, 3, 4, 5, 10, 11

Note: [1] Numbers correspond to those technologies found listed in the table, "List of Small Systems Compliance Technologies for Radionuclides and Limitations to Use," set forth above.

BOARD NOTE: Derived from 40 CFR 141.66~~, as added at 65 Fed. Reg. 76748 (December 7, 2000), effective December 8, 2003~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.331 Beta Particle and Photon Radioactivity

The following provisions apply until December 8, 2003:

a) The average annual concentration of beta particle and photon radio-activity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 mrem/year.

b) Except for the radionuclides listed below, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents must be calculated on the basis of a 2 liter per day drinking water intake using the 168 hour data 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. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ must not exceed 4 mrem/year.

AVERAGE ANNUAL CONCENTRATIONS ASSUMED TO PRODUCE A TOTAL BODY OR ORGAN DOSE OF 4 mrem/year

Radionuclide	Critical Organ	pCi/~~L~~ℓ
Tritium	Total body	20,000
Strontium-90	Bone marrow	8

BOARD NOTE: Derived from 40 CFR 141.16~~ (1989), as removed at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART G: LEAD AND COPPER

Section 611.350 General Requirements

a) Applicability and Scope

1) Applicability. The requirements of this Subpart G constitute national primary drinking water regulations for lead and copper. This Subpart G applies to all community water systems (CWSs) and non-transient, non-community water systems (NTNCWSs).

2) Scope. This Subpart G establishes a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

b) Definitions. For the purposes of only this Subpart G, the following terms have the following meanings:

"Action level" means that concentration of lead or copper in water computed pursuant to subsection (c) of this Section that determines, in some cases, the treatment requirements of this Subpart G that a supplier must complete. The action level for lead is 0.015 mg/~~L~~ℓ. The action level for copper is 1.3 mg/~~L~~ℓ.

"Corrosion inhibitor" means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

"Effective corrosion inhibitor residual" means a concentration of inhibitor in the drinking water sufficient to form a passivating film on the interior walls of a pipe.

"Exceed," as this term is applied to either the lead or the copper action level, means that the 90th percentile level of the supplier's samples collected during a six-month monitoring period is greater than the action level for that contaminant.

"First draw sample" means a one-liter sample of tap water, collected in accordance with Section 611.356(b)(2), that has been standing in plumbing pipes for at least six hours and which is collected without flushing the tap.

"Large system" means a water system that regularly serves water to more than 50,000 persons.

"Lead service line" means a service line made of lead that connects the water main to the building inlet, including any lead pigtail, gooseneck, or other fitting that is connected to such lead line.

"Maximum permissible concentration" or "MPC" means that concentration of lead or copper for finished water entering the supplier's distribution system, designated by the Agency by a SEP pursuant to Sections 611.110 and 611.353(b) that reflects the contaminant removal capability of the treatment properly operated and maintained.
BOARD NOTE: Derived from 40 CFR 141.83(b)(4)~~ (2000)~~ (2002). (See Section 611.353(b)(4)(B).)~~.~~

"Medium-sized system" means a water system that regularly serves water to more than 3,300 up to 50,000 or fewer persons.

"Meet," as this term is applied to either the lead or the copper action level, means that the 90th percentile level of the supplier's samples collected during a six-month monitoring period is less than or equal to the action level for that contaminant.

"Method detection limit" or "MDL" is as defined at Section 611.646(a). The MDL for lead is 0.001 mg/~~L~~ℓ. The MDL for copper is 0.001 mg/~~L~~ℓ, or 0.020 mg/~~L~~ℓ by atomic absorption direct aspiration method.
BOARD NOTE: Derived from 40 CFR 141.89(a)(1)(iii)~~ (2000)~~ (2002).

"Monitoring period" means any of the six-month periods of time during which a supplier must complete a cycle of monitoring under this Subpart G.
BOARD NOTE: USEPA refers to these as "monitoring periods." The Board uses "six-month monitoring period" to avoid confusion with "compliance period," as used elsewhere in this Part and defined at Section

611.101.

"Multiple-family residence" means a building that is currently used as a multiple-family residence, but not one that is also a "single-family structure."

"90th percentile level" means that concentration of lead or copper contaminant exceeded by ten percent or fewer of all samples collected during a six-month monitoring period pursuant to Section 611.356 (i.e., that concentration of contaminant greater than or equal to the results obtained from 90 percent of the samples). The 90th percentile levels for copper and lead must be determined pursuant to subsection (c)(3) of this Section.
BOARD NOTE: Derived from 40 CFR 141.80(c) ~~(2000)~~ (2002).

"Optimal corrosion control treatment" means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while ensuring that the treatment does not cause the water system to violate any national primary drinking water regulations.

"Practical quantitation limit" or "PQL" means the lowest concentration of a contaminant that a well-operated laboratory can reliably achieve within specified limits of precision and accuracy during routine laboratory operating conditions. The PQL for lead is 0.005 mg/~~L~~ℓ. The PQL for copper is 0.050 mg/~~L~~ℓ.
BOARD NOTE: Derived from 40 CFR 141.89(a)(1)(ii) and (a)(1)(iv) ~~(2000)~~ (2002).

"Service line sample" means a one-liter sample of water, collected in accordance with Section 611.356(b)(3), that has been standing for at least six hours in a service line.

"Single-family structure" means a building that was constructed as a single-family residence and which is currently used as either a residence or a place of business.

"Small system" means a water system that regularly serves water to 3,300 or fewer persons.
BOARD NOTE: Derived from 40 CFR 141.2 ~~(2000)~~ (2002).

c) Lead and Copper Action Levels~~:~~.

1) The lead action level is exceeded if the 90th percentile lead level is greater than 0.015 mg/~~L~~ℓ.

2) The copper action level is exceeded if the 90th percentile copper level is

greater than 1.3 mg/~~L~~ℓ.

3) Suppliers must compute the 90th percentile lead and copper levels as follows:

A) List the results of all lead or copper samples taken during a six-month monitoring period in ascending order, ranging from the sample with the lowest concentration first to the sample with the highest concentration last. Assign each sampling result a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level must be equal to the total number of samples taken.

B) Determine the number for the 90th percentile sample by multiplying the total number of samples taken during the six-month monitoring period by 0.9.

C) The contaminant concentration in the sample with the number yielded by the calculation in subsection (c)(3)(B) of this Section is the 90th percentile contaminant level.

D) For suppliers that collect five samples per six-month monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

d) Corrosion Control Treatment Requirements~~:~~.

1) All suppliers must install and operate optimal corrosion control treatment.

2) Any supplier that complies with the applicable corrosion control treatment requirements specified by the Agency pursuant to Sections 611.351 and 611.352 is deemed in compliance with the treatment requirement of subsection (d)(1) of this Section.

e) Source water treatment requirements. Any supplier whose system exceeds the lead or copper action level must implement all applicable source water treatment requirements specified by the Agency pursuant to Section 611.353.

f) Lead service line replacement requirements. Any supplier whose system exceeds the lead action level after implementation of applicable corrosion control and source water treatment requirements must complete the lead service line replacement requirements contained in Section 611.354.

g) Public education requirements. Any supplier whose system exceeds the lead action level must implement the public education requirements contained in

Section 611.355.

h) Monitoring and analytical requirements. Suppliers must complete all tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under this Subpart G in compliance with Sections 611.356, 611.357, 611.358, and 611.359.

i) Reporting requirements. Suppliers must report to the Agency any information required by the treatment provisions of this Subpart G and Section 611.360.

j) Recordkeeping requirements. Suppliers must maintain records in accordance with Section 611.361.

k) Violation of national primary drinking water regulations. Failure to comply with the applicable requirements of this Subpart G, including conditions imposed by the Agency by ~~special exception permit (~~SEP~~)~~ pursuant to these provisions and Section 611.110, will constitute a violation of the national primary drinking water regulations for lead or copper.

BOARD NOTE: Derived from 40 CFR 141.80 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.351 Applicability of Corrosion Control

a) Corrosion control required. Suppliers must complete the applicable corrosion control treatment requirements described in Section 611.352 on or before the deadlines set forth in this Section.

  1) Large systems. Each large system supplier (one regularly serving more than 50,000 persons) must complete the corrosion control treatment steps specified in subsection (d) of this Section, unless it is deemed to have optimized corrosion control under subsection (b)(2) or (b)(3) of this Section.

  2) Medium-sized and small systems. Each small system supplier (one regularly serving 3,300 or fewer persons) and each medium-sized system (one regularly serving more than 3,300 up to 50,000 persons) must complete the corrosion control treatment steps specified in subsection (e) of this Section, unless it is deemed to have optimized corrosion control under one of subsections (b)(1), (b)(2), or (b)(3) of this Section.

b) Suppliers deemed to have optimized corrosion control. A supplier is deemed to have optimized corrosion control, and is not required to complete the applicable corrosion control treatment steps identified in this Section, if the supplier satisfies one of the criteriaspecified in subsections (b)(1) through (b)(3) of this Section. Any such system deemed to have optimized corrosion control under this subsection, and which has treatment in place, must continue to operate and maintain optimal corrosion control treatment and meet any requirements that the Agency determines are appropriate to ensure optimal corrosion control treatment is maintained.

1) ~~Small~~ Small- or medium-sized system meeting action levels. A small system or medium-sized system supplier is deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six-month monitoring periods with monitoring conducted in accordance with Section 611.356.

2) SEP for equivalent activities to corrosion control. The Agency must, by a SEP granted pursuant to Section 611.110, deem any supplier to have optimized corrosion control treatment if it determines that the supplier has conducted activities equivalent to the corrosion control steps applicable under this Section. In making this determination, the Agency must specify the water quality control parameters representing optimal corrosion control in accordance with Section 611.352(f). A water supplier that is deemed to have optimized corrosion control under this subsection (b)(2) must operate in compliance with the Agency-designated optimal water quality control parameters in accordance with Section 611.352(g) and must continue to conduct lead and copper tap and water quality parameter sampling in accordance with Sections 611.356(d)(3) and 611.357(d), respectively. A supplier must provide the Agency with the following information in order to support an Agency SEP determination under this subsection (b)(2):

A) The results of all test samples collected for each of the water quality parameters in Section 611.352(c)(3);

B) A report explaining the test methods the supplier used to evaluate the corrosion control treatments listed in Section 611.352(c)(1), the results of all tests conducted, and the basis for the supplier's selection of optimal corrosion control treatment;

C) A report explaining how the supplier has installed corrosion control and how the supplier maintains it to insure minimal lead and copper concentrations at consumer's taps; and

D) The results of tap water samples collected in accordance with Section 611.356 at least once every six months for one year after corrosion control has been installed.

3) Results less than practical quantitation level (PQL) for lead. Any supplier

is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with Section 611.356 and source water monitoring conducted in accordance with Section 611.358 that demonstrate that for two consecutive six-month monitoring periods the difference between the 90th percentile tap water lead level, computed pursuant to Section 611.350(c)(3), and the highest source water lead concentration is less than the practical quantitation level for lead specified in Section 611.359(a)(1)(B)(i).

A) Those systems whose highest source water lead level is below the method detection limit (MDL) may also be deemed to have optimized corrosion control under this subsection (b) if the 90th percentile tap water lead level is less than or equal to the PQL for lead for two consecutive six-month monitoring periods.

B) Any water system deemed to have optimized corrosion control in accordance with this subsection (b) must continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in Section 611.356(c) and collecting the samples at times and locations specified in Section 611.356(d)(4)(D). Any such system that has not conducted a round of monitoring pursuant to Section 611.356(d) since September 30, 1997, must complete a round of monitoring pursuant to this subsection (b) no later than September 30, 2000.

~~BOARD NOTE: USEPA specified September 30, 2000 at 40 CFR 141.81(b)(3)(ii) (2000). In order to remain identical-in-substance and to retain State primacy, the Board retained this date despite the fact that this Section became effective after that date.~~

C) Any water system deemed to have optimized corrosion control pursuant to this subsection (b) must notify the Agency in writing pursuant to Section 611.360(a)(3) of any change in treatment or the addition of a new source. The Agency must require any such system to conduct additional monitoring or to take other action if the Agency determines that the additional monitoring is necessary and appropriate to ensure that the supplier maintains minimal levels of corrosion in its distribution system.

D) As of July 12, 2001, a supplier is not deemed to have optimized corrosion control under this subsection (b), and must implement corrosion control treatment pursuant to subsection (b)(3)(E) of this Section, unless it meets the copper action level.

E) Any supplier triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this subsection must implement corrosion control treatment in accordance with the deadlines in subsection (e) of this Section. Any such large system supplier must adhere to the schedule specified in that subsection (e) for a medium-sized system supplier, with the time periods for completing each step being triggered by the date the supplier is no longer deemed to have optimized corrosion control under this subsection (b).

c) Suppliers not required to complete corrosion control steps for having met both action levels.

1) Any small system or medium-sized system supplier, otherwise required to complete the corrosion control steps due to its exceedence of the lead or copper action level, may cease completing the treatment steps after the supplier has fulfilled both of the following conditions:

A) It has met both the copper action level and the lead action level during each of two consecutive six-month monitoring periods conducted pursuant to Section 611.356~~,~~; and

B) The supplier has submitted the results for those two consecutive six-month monitoring periods to the Agency.

2) A supplier that has ceased completing the corrosion control steps pursuant to subsection (c)(1) of this Section (or the Agency, if appropriate) must resume completion of the applicable treatment steps, beginning with the first treatment step that the supplier previously did not complete in its entirety, if the supplier thereafter exceeds the lead or copper action level during any monitoring period.

3) The Agency may, by SEP, require a supplier to repeat treatment steps previously completed by the supplier where it determines that this is necessary to properly implement the treatment requirements of this Section. Any such SEP must explain the basis for this decision.

4) The requirement for any ~~small~~ small- or medium-sized system supplier to implement corrosion control treatment steps in accordance with subsection (e) of this Section (including systems deemed to have optimized corrosion control under subsection (b)(1) of this Section) is triggered whenever any ~~small~~ small- or medium-sized system supplier exceeds the lead or copper action level.

d) Treatment steps and deadlines for large systems. Except as provided in subsections (b)(2) and (b)(3) of this Section, large system suppliers must complete the following corrosion control treatment steps (described in the referenced portions of Sections 611.352, 611.356, and 611.357) on or before the indicated dates.

1) Step 1: The supplier must conduct initial monitoring (Sections 611.356(d)(1) and 611.357(b)) during two consecutive six-month monitoring periods on or before January 1, 1993.

   ~~BOARD NOTE: USEPA specified January 1, 1993 at 40 CFR 141.81(d)(1) (2000). In order to remain identical-in-substance and to retain State primacy, the Board retained this date despite the fact that this Section became effective after that date.~~

2) Step 2: The supplier must complete corrosion control studies (Section 611.352(c)) on or before July 1, 1994.

3) Step 3: The Agency must approve optimal corrosion control treatment (Section 611.352(d)) by a SEP issued pursuant to Section 611.110 on or before January 1, 1995.

4) Step 4: The supplier must install optimal corrosion control treatment (Section 611.352(e)) by January 1, 1997.

5) Step 5: The supplier must complete follow-up sampling (Sections 611.356(d)(2) and 611.357(c)) by January 1, 1998.

6) Step 6: The Agency must review installation of treatment and approve optimal water quality control parameters (Section 611.352(f)) by July 1, 1998.

7) Step 7: The supplier must operate in compliance with the Agency-specified optimal water quality control parameters (Section 611.352(g)) and continue to conduct tap sampling (Sections 611.356(d)(3) and 611.357(d)).

e) Treatment steps and deadlines for ~~small~~ small- and medium-sized system suppliers. Except as provided in subsection (b) of this Section, ~~small~~ small- and medium-sized system suppliers must complete the following corrosion control treatment steps (described in the referenced portions of Sections 611.352, 611.356, and 611.357) by the indicated time periods.

1) Step 1: The supplier must conduct initial tap sampling (Sections 611.356(d)(1) and 611.357(b)) until the supplier either exceeds the lead action level or the copper action level or it becomes eligible for reduced monitoring under Section 611.356(d)(4). A supplier exceeding the lead action level or the copper action level must recommend optimal corrosion control treatment (Section 611.352(a)) within six months after it exceeds

one of the action levels.

2) Step 2: Within 12 months after a supplier exceeds the lead action level or the copper action level, the Agency may require the supplier to perform corrosion control studies (Section 611.352(b)). If the Agency does not require the supplier to perform such studies, the Agency must, by a SEP issued pursuant to Section 611.110, specify optimal corrosion control treatment (Section 611.352(d)) within the following timeframes:

   A) for medium-sized systems, within 18 months after such supplier exceeds the lead action level or the copper action level,

   B) for small systems, within 24 months after such supplier exceeds the lead action level or the copper action level.

3) Step 3: If the Agency requires a supplier to perform corrosion control studies under step 2 (subsection (e)(2) of this Section), the supplier must complete the studies (Section 611.352(c)) within 18 months after the Agency requires that such studies be conducted.

4) Step 4: If the supplier has performed corrosion control studies under step 2 (subsection (e)(2) of this Section), the Agency must, by a SEP issued pursuant to Section 611.110, approve optimal corrosion control treatment (Section 611.352(d)) within six months after completion of step 3 (subsection (e)(3) of this Section).

5) Step 5: The supplier must install optimal corrosion control treatment (Section 611.352(e)) within 24 months after the Agency approves such treatment.

6) Step 6: The supplier must complete follow-up sampling (Sections 611.356(d)(2) and 611.357(c)) within 36 months after the Agency approves optimal corrosion control treatment.

7) Step 7: The Agency must review the supplier’s installation of treatment and, by a SEP issued pursuant to Section 611.110, approve optimal water quality control parameters (Section 611.352(f)) within six months after completion of step 6 (subsection (e)(6) of this Section).

8) Step 8: The supplier must operate in compliance with the Agency-approved optimal water quality control parameters (Section 611.352(g)) and continue to conduct tap sampling (Sections 611.356(d)(3) and 611.357(d)).

BOARD NOTE: Derived from 40 CFR 141.81 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.352 Corrosion Control Treatment

Each supplier must complete the corrosion control treatment requirements described below that are applicable to such supplier under Section 611.351.

a) System recommendation regarding corrosion control treatment.

1) Based on the results of lead and copper tap monitoring and water quality parameter monitoring, ~~small~~ small- and medium-sized system suppliers exceeding the lead action level or the copper action level must recommend to the Agency installation of one or more of the corrosion control treatments listed in subsection (c)(1) of this Section that the supplier believes constitutes optimal corrosion control for its system.

2) The Agency may, by a SEP issued pursuant to Section 611.110, require the supplier to conduct additional water quality parameter monitoring in accordance with Section 611.357(b) to assist it in reviewing the supplier's recommendation.

b) Agency-required studies of corrosion control treatment. The Agency may, by a SEP issued pursuant to Section 611.110, require any ~~small~~ small- or medium-sized system supplier that exceeds the lead action level or the copper action level to perform corrosion control studies under subsection (c) of this Section to identify optimal corrosion control treatment for its system.

c) Performance of studies~~:~~.

1) Any supplier performing corrosion control studies must evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments, to identify the optimal corrosion control treatment for its system:

A) Alkalinity and pH adjustment;

B) Calcium hardness adjustment; and

C) The addition of a phosphate- or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

2) The supplier must evaluate each of the corrosion control treatments using ~~either~~ pipe rig/loop tests; metal coupon tests; partial-system tests; or analyses based on documented analogous treatments in other systems of similar size, water chemistry, and distribution system configuration.

3) The supplier must measure the following water quality parameters in any tests conducted under this subsection (c) before and after evaluating the corrosion control treatments listed above:

A) Lead;

B) Copper;

C) pH;

D) Alkalinity;

E) Calcium;

F) Conductivity;

G) Orthophosphate (when an inhibitor containing a phosphate compound is used);

H) Silicate (when an inhibitor containing a silicate compound is used); and

I) Water temperature.

4) The supplier must identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment, and document such constraints with at least one of the following:

A) Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another supplier with comparable water quality characteristics; or

B) Data and documentation demonstrating that the supplier has previously attempted to evaluate a particular corrosion control treatment, finding either that the treatment is ineffective or that it adversely affects other water quality treatment processes.

5) The supplier must evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

6) On the basis of an analysis of the data generated during each evaluation, the supplier must recommend to the Agency, in writing, that treatment option the corrosion control studies indicate constitutes optimal corrosion

control treatment for its system. The supplier must provide a rationale for its recommendation, along with all supporting documentation specified in subsections (c)(1) through (c)(5) of this Section.

d) Agency approval of treatment~~:~~.

1) Based on consideration of available information including, where applicable, studies performed under subsection (c) of this Section and a supplier's recommended treatment alternative, the Agency must, by a SEP issued pursuant to Section 611.110, either approve the corrosion control treatment option recommended by the supplier, or deny and require investigation and recommendation of alternative corrosion control treatments from among those listed in subsection (c)(1) of this Section. When approving optimal treatment, the Agency must consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

2) The Agency must, in any SEP issued under subsection (d)(1) of this Section, notify the supplier of the basis for this determination.

e) Installation of optimal corrosion control. Each supplier must properly install and operate, throughout its distribution system, that optimal corrosion control treatment approved by the Agency pursuant to subsection (d) of this Section.

f) Agency review of treatment and specification of optimal water quality control parameters. The Agency must evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the supplier and determine whether it has properly installed and operated the optimal corrosion control treatment approved pursuant to subsection (d) of this Section.

1) Upon reviewing the results of tap water and water quality parameter monitoring by the supplier, both before and after the installation of optimal corrosion control treatment, the Agency must, by a SEP issued pursuant to Section 611.110, specify the following:

A) A minimum value or a range of values for pH measured at each entry point to the distribution system;

B) A minimum pH value, measured in all tap samples. Such value must be equal to or greater than 7.0, unless the Agency determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the supplier to optimize corrosion control;

C) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the

Agency determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

D) If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;

E) If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

2) The values for the applicable water quality control parameters listed in subsection (f)(1) of this Section must be those that the Agency determines reflect optimal corrosion control treatment for the supplier.

3) The Agency may, by a SEP issued pursuant to Section 611.110, approve values for additional water quality control parameters determined by the Agency to reflect optimal corrosion control for the supplier's system.

4) The Agency must, in issuing a SEP, explain these determinations to the supplier, along with the basis for its decisions.

g) Continued Operation and Monitoring. All suppliers optimizing corrosion control must continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameter values at or above minimum values or within ranges approved by the Agency under subsection (f) of this Section, in accordance with this subsection (g) for all samples collected under ~~Sections~~ Section 611.357(d) through (f). Compliance with the requirements of this subsection (g) must be determined every six months, as specified under Section 611.357(d). A water system is out of compliance with the requirements of this subsection for a six-month period if it has excursions for any Agency-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the Agency. Daily values are calculated as provided in subsections (g)(1) through (g)(3) of this Section. The Agency must delete results that it determines are obvious sampling errors from this calculation.

1) On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value must be the average of all results collected during the day regardless of whether the samples are collected through continuous monitoring, grab sampling, or a combination of both.

BOARD NOTE: Corresponding 40 CFR 141.82(g)(1) further provides as follows: If USEPA approves an alternative formula under 40 CFR 142.16 in the State's application for a program revision submitted pursuant to 40 CFR 142.12, the State's formula must be used to aggregate multiple measurements taken at a sampling point for the water quality parameter in lieu of the formula in this subsection (g).

2) On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value must be the result of that measurement.

3) On days when no measurement is collected for the water quality parameter at the sampling location, the daily value must be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

h) Modification of Agency treatment decisions.

1) On its own initiative, or in response to a request by a supplier, the Agency may, by a SEP issued pursuant to this subsection and Section 611.110, modify its determination of the optimal corrosion control treatment under subsection (d) of this Section or of the optimal water quality control parameters under subsection (f) of this Section.

2) A request for modification must be in writing, explain why the modification is appropriate, and provide supporting documentation.

3) The Agency may modify its determination where it determines that such change is necessary to ensure that the supplier continues to optimize corrosion control treatment. A revised determination must set forth the new treatment requirements, explain the basis for the Agency's decision, and provide an implementation schedule for completing the treatment modifications.

4) Any interested person may submit information to the Agency bearing on whether the Agency should, within its discretion, issue a SEP to modify its determination pursuant to subsection (h)(1) of this Section. An Agency determination not to act on a submission of such information by an interested person is not an Agency determination for the purposes of Sections 39 and 40 of the Act [415 ILCS 5/39 and 40].

i) Treatment decisions by USEPA. Pursuant to the procedures in 40 CFR 142.19, the USEPA Regional Administrator has reserved the prerogative to review treatment determinations made by the Agency under subsections (d), (f), or (h) of this Section and issue federal treatment determinations consistent with the requirements of 40 CFR 141.82(d), (e), or (h), where the Regional Administrator finds that the following is true:

1) The Agency has failed to issue a treatment determination by the applicable deadlines contained in Section 611.351 (40 CFR 141.81)~~,~~;

2) The Agency has abused its discretion in a substantial number of cases or in cases affecting a substantial population~~,~~; or

3) The technical aspects of the Agency's determination would be indefensible in an expected federal enforcement action taken against a supplier.

BOARD NOTE: Derived from 40 CFR 141.82~~ (1999), as amended at 65 Fed. Reg. 2004 (Jan. 12, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.353 Source Water Treatment

Suppliers must complete the applicable source water monitoring and treatment requirements (described in the referenced portions of subsection (b) of this Section, and in Sections 611.356 and 611.358) by the following deadlines.

a) Deadlines for~~ Completing Source Water Treatment Steps~~ completing source water treatment steps.

1) Step 1: A supplier exceeding the lead action level or the copper action level must complete lead and copper and source water monitoring (Section 611.358(b)) and make a treatment recommendation to the Agency (subsection (b)(1) of this Section) within six months after exceeding the pertinent action level.

2) Step 2: The Agency must, by a SEP issued pursuant to Section 611.110, make a determination regarding source water treatment (subsection (b)(2) of this Section) within six months after submission of monitoring results under step 1.

3) Step 3: If the Agency requires installation of source water treatment, the supplier must install that treatment (subsection (b)(3) of this Section) within 24 months after completion of step 2.

4) Step 4: The supplier must complete follow-up tap water monitoring (Section 611.356(d)(2)) and source water monitoring (Section 611.358(c)) within 36 months after completion of step 2.

5) Step 5: The Agency must, by a SEP issued pursuant to Section 611.110, review the supplier's installation and operation of source water treatment

and specify MPCs for lead and copper (subsection (b)(4) of this Section) within six months after completion of step 4.

6) Step 6: The supplier must operate in compliance with the Agency-specified lead and copper MPCs (subsection (b)(4) of this Section) and continue source water monitoring (Section 611.358(d)).

b) Description of Source Water Treatment Requirements.

1) System treatment recommendation. Any supplier that exceeds the lead action level or the copper action level must recommend in writing to the Agency the installation and operation of one of the source water treatments listed in subsection (b)(2) of this Section. A supplier may recommend that no treatment be installed based on a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

2) Agency determination regarding source water treatment.

A) The Agency must complete an evaluation of the results of all source water samples submitted by the supplier to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps.

B) If the Agency determines that treatment is needed, the Agency must, by a SEP issued pursuant to Section 611.110, either require installation and operation of the source water treatment recommended by the supplier (if any) or require the installation and operation of another source water treatment from among the following:

i) ion exchange~~,~~;

ii) reverse osmosis~~,~~;

iii) lime softening~~,~~; or

iv) coagulation/filtration.

C) The Agency may request and the supplier must submit such additional information, on or before a certain date, as the Agency determines is necessary to aid in its review.

D) The Agency must notify the supplier in writing of its determination and set forth the basis for its decision.

3) Installation of source water treatment. Each supplier must properly install and operate the source water treatment approved by the Agency under subsection (b)(2) of this Section.

4) Agency review of source water treatment and specification of maximum permissible source water levels (MPCs).

   A) The Agency must review the source water samples taken by the supplier both before and after the supplier installs source water treatment, and determine whether the supplier has properly installed and operated the approved source water treatment.

   B) Based on its review, the Agency must, by a SEP issued pursuant to Section 611.110, approve the lead and copper MPCs for finished water entering the supplier's distribution system. Such levels must reflect the contaminant removal capability of the treatment properly operated and maintained.

   C) The Agency must explain the basis for its decision under subsection (b)(4)(B) of this Section.

5) Continued operation and maintenance. Each supplier must maintain lead and copper levels below the MPCs approved by the Agency at each sampling point monitored in accordance with Section 611.358. The supplier is out of compliance with this subsection if the level of lead or copper at any sampling point is greater than the MPC approved by the Agency pursuant to subsection (b)(4)(B) of this Section.

6) Modification of Agency treatment decisions.

   A) On its own initiative, or in response to a request by a supplier, the Agency may, by a SEP issued pursuant to Section 611.110, modify its determination of the source water treatment under subsection (b)(2) of this Section, or the lead and copper MPCs under subsection (b)(4) of this Section.

   B) A request for modification by a supplier must be in writing, explain why the modification is appropriate, and provide supporting documentation.

   C) The Agency may, by a SEP issued pursuant to Section 611.110, modify its determination where it concludes that such change is necessary to ensure that the supplier continues to minimize lead and copper concentrations in source water.

   D) A revised determination made pursuant to subsection (b)(6)(C) of this Section must set forth the new treatment requirements, explain the basis for the Agency's decision, and provide an implementation schedule for completing the treatment modifications.

E) Any interested person may submit information to the Agency, in writing, that bears on whether the Agency should, within its discretion, issue a SEP to modify its determination pursuant to subsection (h)(1) of this Section. An Agency determination not to act on a submission of such information by an interested person is not an Agency determination for the purposes of Sections 39 and 40 of the Act [415 ILCS 5/39 and 40].

7) Treatment decisions by USEPA. Pursuant to the procedures in 40 CFR 142.19, the USEPA Regional Administrator reserves the prerogative to review treatment determinations made by the Agency under subsections (b)(2), (b)(4), or (b)(6) of this Section and issue federal treatment determinations consistent with the requirements of 40 CFR 141.83(b)(2), (b)(4), and (b)(6), where the Administrator finds that the following is true:

A) the Agency has failed to issue a treatment determination by the applicable deadline contained in subsection (a) of this Section~~,~~;

B) the Agency has abused its discretion in a substantial number of cases or in cases affecting a substantial population~~,~~; or

C) the technical aspects of the Agency's determination would be indefensible in an expected federal enforcement action taken against a supplier.

BOARD NOTE: Derived from 40 CFR 141.83 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.354 Lead Service Line Replacement

a) Suppliers required to replace lead service lines.

1) If the results from tap samples taken pursuant to Section 611.356(d)(2) exceed the lead action level after the supplier has installed corrosion control or source water treatment (whichever sampling occurs later), the supplier must recommence replacing lead service lines in accordance with the requirements of subsection (b) of this Section.

2) If a supplier is in violation of Section 611.351 or Section 611.353 for failure to install source water or corrosion control treatment, the Agency

may, by a SEP issued pursuant to Section 611.110, require the supplier to commence lead service line replacement under this Section after the date by which the supplier was required to conduct monitoring under Section 611.356(d)(2) has passed.

b) Annual replacement of lead service lines.

1) A supplier required to commence lead service line replacement pursuant to subsection (a) of this Section must annually replace at least seven percent of the initial number of lead service lines in its distribution system.

2) The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins.

3) The supplier must identify the initial number of lead service lines in its distribution system, including an identification of the portions of the system owned by the supplier, based on a materials evaluation, including the evaluation required under Section 611.356(a) and relevant legal authorities (e.g., contracts, local ordinances) regardi-ng the portion owned by the system.

4) The first year of lead service line replacement must begin on the date the supplier exceeded the action level in tap sampling referenced in subsection (a) of this Section.

c) Service lines not needing replacement. A supplier is not required to replace any individual lead service line for which the lead concentrations in all service line samples taken from that line pursuant to Section 611.356(b)(3) are less than or equal to 0.015 mg/~~L~~ℓ.

d) A water supplier must replace that portion of the lead service line that it owns. In cases where the supplier does not own the entire lead service line, the supplier must notify the owner of the line, or the owner’s authorized agent, that the supplier will replace the portion of the service line that it owns and must offer to replace the owner’s portion of the line. A supplier is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by State, local, or common law. A water supplier that does not replace the entire length of the service line also must complete the following tasks:

1) Notice Prior to Commencement of Work.

A) At least 45 days prior to commencing the partial replacement of a lead service line, the water supplier must provide notice to the residents of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead.

B) The Agency, by issuing an appropriate SEP, may allow the water supplier to provide notice under the previous sentence less than 45 days prior to commencing partial lead service line replacement where it determines that such replacement is in conjunction with emergency repairs.

C) In addition, the water supplier must inform the residents served by the line that the supplier will, at the supplier's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed by Section 611.356(b)(3), within 72 hours after the completion of the partial replacement of the service line. The supplier must collect the sample and report the results of the analysis to the owner and the residents served by the line within three business days of receiving the results.

D) Mailed notices post-marked within three business days of receiving the results must be considered "on time".

2) The water supplier must provide the information required by subsection (d)(1) of this Section to the residents of individual dwellings by mail or by other methods approved by the Agency by a SEP issued pursuant to Section 611.110. In instances where multi-family dwellings are served by the service line, the water supplier must have the option to post the information at a conspicuous location.

e) Agency determination of shorter replacement schedule.

1) The Agency must, by a SEP issued pursuant to Section 611.110, require a supplier to replace lead service lines on a shorter schedule than that otherwise required by this Section if it determines, taking into account the number of lead service lines in the system, that such a shorter replacement schedule is feasible.

2) The Agency must notify the supplier of its finding pursuant to subsection (e)(1) of this Section within six months after the supplier is triggered into lead service line replacement based on monitoring, as referenced in subsection (a) of this Section.

f) Cessation of service line replacement.

1) Any supplier may cease replacing lead service lines whenever it fulfills both of the following conditions:

A) First draw tap samples collected pursuant to Section 611.356(b)(2) meet the lead action level during each of two consecutive six-month monitoring periods; and

B) The supplier has submitted those results to the Agency.

2) If any of the supplier's first draw tap samples thereafter exceed the lead action level, the supplier must recommence replacing lead service lines pursuant to subsection (b) of this Section.

g) To demonstrate compliance with subsections (a) through (d) of this Section, a supplier must report to the Agency the information specified in Section 611.360(e).

BOARD NOTE: Derived from 40 CFR 141.84 ~~(1999), as amended at 65 Fed. Reg. 2005 (Jan. 12, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.355 Public Education and Supplemental Monitoring

A supplier that exceeds the lead action level based on tap water samples collected in accordance with Section 611.356 must deliver the public education materials required by subsections (a) and (b) of this Section in accordance with the requirements of subsection (c) of this Section.

a) Content of written materials.

1) Community water systems. A CWS supplier must include the text set forth in Appendix E of this Part in all of the printed materials it distributes through its lead public education program. A supplier may delete information pertaining to lead service lines, upon approval by the Agency by a SEP issued pursuant to Section 611.110, if no lead service lines exist anywhere in the water system service area. Public education language at paragraphs (4)(B)(5) and (4)(D)(2) of Appendix E of this Part may be modified regarding building permit record availability and consumer access to these records, if approved by the Agency by a SEP issued pursuant to Section 611.110. A supplier may also continue to utilize pre-printed materials that meet the public education language requirements in 40 CFR 141.85 (1991). Any additional information presented by a supplier must be consistent with the information in Appendix E of this Part and be in plain English that can be understood by lay persons.

BOARD NOTE: At corresponding 40 CFR 141.85(a)(1) ~~(1999), as amended at 65 Fed. Reg. 2005 (Jan. 12, 2000)~~ (2002), USEPA allowed the use of pre-printed copies of the public notices whose content met the requirements of the original lead and copper rule adopted on June 7, 1991 (56 Fed. Reg. 26548). Rather than reference a prior version of this Section of the Illinois rules, the Board has retained the federal reference to the prior requirements ~~in this subsection (a)(1)~~.

2) Non-transient non-community water systems. A NTNCWS must either include the text specified in subsection (a)(1) of this Section or must include the text set forth in Appendix F of this Part in all of the printed materials it distributes through its lead public education program. A water supplier may delete information pertaining to lead service lines upon approval by the Agency by a SEP issued pursuant to Section 611.110 if no lead service lines exist anywhere in the water system service area. Any additional information presented by a supplier must be consistent with the information below and be in plain English that can be understood by lay persons.

b) Content of broadcast materials. A supplier must include the following information in all public service announcements submitted under its lead public education program to television and radio stations for broadcast:

1) Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That’s why I urge you to do what I did. I had my water tested for ~~[~~(insert “free” or ~~$~~ the cost per sample~~]~~). You can contact the ~~[~~(insert the name of the city or supplier~~]~~) for information on testing and on simple ways to reduce your exposure to lead in drinking water.

2) To have your water tested for lead, or to get more information about this public health concern, please call ~~[~~(insert the phone number of the city or supplier~~]~~).

c) Delivery of a public education program.

1) In communities where a significant proportion of the population speaks a language other than English, public education materials must be communicated in the appropriate languages.

2) A CWS supplier that exceeds the lead action level on the basis of tap water samples collected in accordance with Section 611.356 and which is not already repeating public education tasks pursuant to subsection (c)(3), (c)(7), or (c)(8) of this Section must, within 60 days, do each of the following:

A) Insert notices in each customer's water utility bill or disseminate to each customer by separately mailing a notice containing the information required by subsection (a)(1) of this Section, along with the following alert in large print on the water bill itself: "SOME HOMES IN THIS COMMUNITY HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION." A CWS supplier having a billing cycle that does not include a billing within 60 days ~~of~~ after exceeding the action level or a CWS supplier that cannot insert information in the water utility bill without making major changes to its billing system may use a separate mailing to deliver the information in subsection (a)(1) of this Section, as long as the information is delivered to each customer within 60 days of exceeding the action level. Such a water supplier must also include the "alert" language specified in this subsection (c)(2)(A);

B) Submit the information required by subsection (a)(1) of this Section to the editorial departments of the major daily and weekly newspapers circulated throughout the community;

C) Deliver pamphlets or brochures that contain the public education materials in paragraphs (2) and (4) of Appendix E of this Part to facilities and organizations, including the following:

i) Public schools or local school boards;

ii) The city or county health department;

iii) Women, Infants, and Children (WIC) and Head Start programs, whenever available;

iv) Public and private hospitals and clinics;

v) Pediatricians;

vi) Family planning clinics; and

vii) Local welfare agencies; and

D) Submit the public service announcement in subsection (b) of this Section to at least five of the radio and television stations with the largest audiences within the community served by the supplier.

3) A CWS supplier must repeat the tasks contained in subsections (c)(2)(A) through (c)(2)(D) of this Section for as long as the supplier exceeds the lead action level, at the following minimum frequency:

A) Those of subsections (c)(2)(A) through (c)(2)(C) of this Section~~:~~, every 12 months~~,~~; and

B) Those of subsection (c)(2)(D) of this Section, every six months.

4) Within 60 days after it exceeds the lead action level (unless it already is repeating public education tasks pursuant to subsection (c)(5) of this Section), a NTNCWS supplier must deliver the public education materials contained in Appendix E or F of this Part, as follows:

A) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the supplier; and

B) Distribute informational pamphlets or brochures on lead in drinking water to each person served by the NTNCWS supplier. The Agency may, by a SEP granted pursuant to Section 611.110, allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

5) A NTNCWS supplier must repeat the tasks contained in subsection (c)(4) of this Section at least once during each calendar year in which the supplier exceeds the lead action level.

6) A supplier may discontinue delivery of public education materials after it has met the lead action level during the most recent six-month monitoring period conducted pursuant to Section 611.356. Such a supplier must begin public education anew in accordance with this Section if it subsequently exceeds the lead action level during any six-month monitoring period.

7) A CWS supplier may apply to the Agency, in writing, to use the text specified in Appendix F of this Part in lieu of the text in Appendix E of this Part and to perform the tasks listed in subsections (c)(4) and (c)(5) of this Section in lieu of the tasks in subsections (c)(2) and (c)(3) of this ~~section~~ Section if the following are true:

A) The supplier is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

B) The system provides water as part of the cost of services provided, and it does not separately charge for water consumption.

8) Reduced requirements for certain smaller CWS suppliers.

A) A CWS supplier serving 3,300 or fewer people may omit the task contained in subsection (c)(2)(D) of this Section. As long as it distributes notices containing the information contained in Appendix E of this Part to every household served by the system, such a supplier may further limit its public education programs as follows:

i) A supplier serving 500 or fewer people may forego the task contained in subsection (c)(2)(B) of this Section. Such a system may limit the distribution of the public education materials required under subsection (c)(2)(C) of this Section to facilities and organizations served by the supplier that are most likely to be visited regularly by pregnant women and children, unless it is notified by the Agency in writing that it must make a broader distribution.

ii) If approved by the Agency by a SEP issued pursuant to Section 611.110, a system serving 501 to 3,300 people may omit the task in subsection (c)(2)(B) of this Section or limit the distribution of the public education materials required under subsection (c)(2)(C) of this Section to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.

B) A CWS supplier serving 3,300 or fewer people that delivers public education in accordance with subsection (c)(8)(A) of this Section must repeat the required public education tasks at least once during each calendar year in which the supplier exceeds the lead action level.

d) Supplemental monitoring and notification of results. A supplier that fails to meet the lead action level on the basis of tap samples collected in accordance with Section 611.356 must offer to sample the tap water of any customer who requests it. The supplier is not required to pay for collecting or analyzing the sample, nor is the supplier required to collect and analyze the sample itself.

BOARD NOTE: Derived from 40 CFR 141.85~~ (1999), as amended at 65 Fed. Reg. 2005 (Jan. 12, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

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) of this Section, each supplier must 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) of this Section.

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

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

2) Materials evaluation.

A) A supplier must 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) of this Section, the supplier must review the following sources of information in order to identify a sufficient number of sampling sites:

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

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

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

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

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

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

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: Subsection (a)(3)(A) was derived from segments of 40 CFR 141.86(a)(3) ~~(2000)~~ (2002). This allows the pool of CWS tier 1 sampling sites to consist exclusively of structures served by lead service lines.

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

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: Subsection (a)(3)(B) was derived from segments of 40 CFR 141.86(a)(4) ~~(2000)~~ (2002). 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" must include the following single-family structures: those that contain copper pipes with lead solder installed before 1983.

BOARD NOTE: Subsection (a)(3)(C) was derived from segments of 40 CFR 141.86(a)(5) ~~(2000)~~ (2002).

D) NTNCWS Tier 1 sampling sites. "NTNCWS Tier 1 sampling sites" must 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: Subsection (a)(3)(D) was derived from segments of 40 CFR 141.86(a)(6) ~~(2000)~~ (2002). 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" must include the following buildings: those that contain copper pipes with lead solder installed before 1983.

BOARD NOTE: Subsection (a)(3)(E) was derived from segments of 40 CFR 141.86(a)(7) ~~(2000)~~ (2002).

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

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

BOARD NOTE: Subsection (a)(4)(A)(i) was derived from a segment of 40 CFR 141.86(a)(3)(ii) ~~(2000)~~ (2002).

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

BOARD NOTE: Subsection (a)(4)(A)(ii) was derived from a segment of 40 CFR 141.86(a)(4) ~~(2000)~~ (2002).

iii) If 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.

BOARD NOTE: Subsection (a)(4)(A)(iii) was derived from a segment of 40 CFR 141.86(a)(5) ~~(2000)~~ (2002).

iv) If the CWS supplier has an insufficient number of CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites, the supplier must use those CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites that it has and complete its sampling pool with representative sites throughout its distribution system for the balance of its sampling sites. For the purpose of this subsection (a)(4)(A)(iv), a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

BOARD NOTE: Subsection (a)(4)(A)(iv) was derived from segments of 40 CFR 141.86(a)(5) ~~(2000)~~ (2002).

B) NTNCWS suppliers.

i) An NTNCWS supplier must select NTNCWS tier 1 sampling sites for its sampling pool.

BOARD NOTE: Subsection (a)(4)(B)(i) was derived from segments of 40 CFR 141.86(a)(6) ~~(2000)~~ (2002).

ii) If the NTNCWS supplier has an insufficient number of NTNCWS tier 1 sampling sites, the supplier may complete its sampling pool with alternative NTNCWS sampling sites.

BOARD NOTE: Subsection (a)(4)(B)(ii) was derived from segments of 40 CFR 141.86(a)(7) ~~(2000)~~ (2002).

iii) If the NTNCWS supplier has an insufficient number of NTNCWS tier 1 sampling sites and NTNCWS alternative sampling sites, the supplier must use representative sites throughout its distribution system. For the purpose of this subsection (a)(4)(B)(ii), a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

BOARD NOTE: Subsection (a)(4)(B)(iii) was derived from segments of 40 CFR 141.86(a)(7) ~~(2000)~~ (2002).

C) Suppliers with lead service lines. Any supplier whose distribution system contains lead service lines must draw samples during each six-month monitoring period from 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 must collect first-draw samples from all of the sites identified as being served by such lines.

BOARD NOTE: Subsection (a)(4)(C) was derived from segments of 40 CFR 141.86(a)(8) ~~(2000)~~ (2002). 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 G, with the exception of lead service line samples collected under Section 611.354(c) and samples collected under subsection (b)(5) of this Section, must be first-draw samples.

2) First-draw tap samples.

A) Each first-draw tap sample for lead and copper must 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 must be collected from the cold water kitchen tap or bathroom sink tap.

C) First-draw samples from a non-residential building must be one liter in volume and must be collected at an interior tap from which water is typically drawn for consumption.

D) Non-first-draw samples collected in lieu of first-draw samples pursuant to subsection (b)(5) of this Section must be one liter in volume and must be collected at an interior tap from which water is typically drawn for consumption.

E) 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 (b).

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) After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved USEPA method before the sample can be analyzed.

F) If a supplier allows residents to perform sampling under subsection (b)(2)(D) of this Section, 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 must be one liter in volume and have stood motionless in the lead service line for at least six hours.

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

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

ii) Tapping directly into the lead service line; or

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

4) Follow-up first-draw tap samples.

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

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.

5) Substitute non-first-draw samples.

A) A NTNCWS supplier or a CWS supplier that meets the criteria of Sections 611.355(c)(7)(A) and (c)(7)(B), that does not have enough taps that can supply first-draw samples, as defined in Section 611.102, may apply to the Agency in writing to substitute non-first-draw samples by a SEP granted under Section 611.110.

B) A supplier approved to substitute non-first-draw samples must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites.

C) The Agency may grant a SEP that waives the requirement for prior Agency approval of non-first-draw sample sites selected by the system.

c) Number of samples.

1) Suppliers must collect at least one sample from the number of sites listed in the first column of Table D of this Part (labelled “standard monitoring”) during each six-month monitoring period specified in subsection (d) of this Section.

2) A supplier conducting reduced monitoring pursuant to subsection (d)(4) of this Section must collect one sample from the number of sites specified in the second column of Table D of this Part (labelled “reduced monitoring”) during each reduced monitoring period specified in subsection (d)(4) of this Section. Such reduced monitoring sites must be representative of the sites required for standard monitoring. The Agency may, by a SEP issued pursuant to Section 611.110, specify sampling locations when a system is conducting reduced monitoring.

d) Timing of monitoring.

1) Initial tap sampling. The first six-month monitoring period for small, medium-sized and large system suppliers must begin on the dates specified in Table E of this Part.

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

B) All ~~small~~ small- and medium-sized system suppliers must monitor during each consecutive six-month monitoring period until the following is true:

i) The supplier exceeds the lead action level or the copper action level and is therefore required to implement the corrosion control treatment requirements under Section 611.351, in which case the supplier must continue monitoring in accordance with subsection (d)(2) of this Section~~,~~; 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) of this Section.

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) must monitor during each of two consecutive six-month monitoring periods before the date specified in Section 611.351(d)(5).

B) Any ~~small~~ small- or medium-sized system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(e)(5) must 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) must 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 must 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~~ small- and medium-sized system suppliers meeting the lead and copper action levels. A ~~small~~ 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) of this Section, and reduce the frequency of sampling to once per year.

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

i) Any supplier that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f) during each of two consecutive six-month monitoring periods may reduce the frequency of monitoring to once per year and the number of lead and copper samples to that specified by subsection (c) of this Section if it receives written approval from the Agency in the form of a SEP granted pursuant to Section 611.110.

ii) The Agency must review monitoring, treatment, and other relevant information submitted by the water system in accordance with Section 611.360, and must notify the system in writing by a SEP granted pursuant to Sections 611.110 when it determines the system is eligible to reduce its monitoring frequency to once every three years pursuant to this subsection (d)(4).

iii) The Agency must review, and where appropriate, revise its determination under subsection (d)(4)(B)(i) of this Section 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~~ small- and medium-sized system suppliers.

i) ~~Small~~ Small- and medium-sized system suppliers meeting lead and copper action levels. A ~~small~~ 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. Any supplier that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f) during three consecutive years of monitoring may reduce its monitoring frequency from annual to once every three years if it receives written approval from the Agency in the form of a SEP granted pursuant to Section 611.110.

iii) The Agency must review, and where appropriate, revise its determination under subsection (d)(4)(C)(ii) of this Section when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency.

D) Sampling at a reduced frequency. A supplier that reduces the number and frequency of sampling must collect these samples from representative sites included in the pool of targeted sampling sites identified in subsection (a) of this Section, preferentially selecting those sampling sites from the highest tier first. Suppliers sampling annually or less frequently must conduct the lead and copper tap sampling during the months of June, July, August, or September unless the Agency has approved a different sampling period in accordance with subsection (d)(4)(D)(i) of this Section.

i) The Agency may grant a SEP pursuant to Section 611.110 that approves a different period for conducting the lead and copper tap sampling for systems collecting a reduced number of samples. Such a period must be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a NTNCWS supplier that does not operate during the months of June through September and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the Agency must designate a period that represents a time of normal operation for the system.

ii) A supplier monitoring annually that has been collecting samples during the months of June through September and which receives Agency approval to alter its sample collection period under subsection (d)(4)(D)(i) of this Section must collect its next round of samples during a time period that ends no later than 21 months after the previous round of sampling. A supplier monitoring once every three years that has been collecting samples during the months of June through September and which receives Agency approval to alter the sampling collection period as provided in subsection (d)(4)(D)(i) of this Section must collect its next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling must be collected annually or once every three years, as required by this Section. A small system supplier with a waiver granted pursuant to subsection (g) of this Section that has been collecting samples during the months of June through September and which receives Agency approval to alter its sample collection period under subsection (d)(4)(D)(i) of this Section must collect its next round of samples before the end of the nine-year compliance cycle (as that term is defined in Section 611.101).

E) Any water system that demonstrates for two consecutive six-month monitoring periods that the tap water lead level computed under Section 611.350(c)(3) is less than or equal to 0.005 mg/~~L~~ℓ and that the tap water copper level computed under Section 611.350(c)(3) is less than or equal to 0.65 mg/~~L~~ℓ may reduce the number of samples in accordance with subsection (c) of this Section and reduce the frequency of sampling to once every three calendar years.

F) Resumption of standard monitoring.

i) ~~Small~~ Small- or medium-sized suppliers exceeding lead or copper action level. A ~~small~~ small- or medium-sized system supplier subject to reduced monitoring that exceeds the lead action level or the copper action level must resume sampling in accordance subsection (d)(3) of this Section and collect the number of samples specified for standard monitoring under subsection (c) of this Section. Such a supplier must also conduct water quality parameter monitoring in accordance with Section 611.357 (b), (c), or (d) (as appropriate) during the six-month monitoring period in which it exceeded the action level. Any such supplier may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subsection (c) of this Section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of subsection (d)(4)(A) of this Section. Any such supplier may resume monitoring once every three years for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (d)(4)(C) or (d)(4)(E) of this Section.

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) for more than nine days in any six-month period specified in Section 611.357(d) must conduct tap water sampling for lead and copper at the frequency specified in subsection (d)(3) of this Section, must collect the number of samples specified for standard monitoring under subsection (c) of this Section, and must resume monitoring for water quality parameters within the distribution system in accordance with Section 611.357(d).

G) Any water supplier subject to a reduced monitoring frequency under subsection (d)(4) of this Section that either adds a new source of water or changes any water treatment must inform the Agency in writing in accordance with Section 611.360(a)(3). The Agency may, by a SEP granted pursuant to Section 611.110, require the system to resume sampling in accordance with subsection (d)(3) of this Section and collect the number of samples specified for standard monitoring under subsection (c) of this Section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

H) A supplier required under subsection (d)(4)(F) of this Section to resume monitoring in accordance with Section 611.357(d) may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

i) The supplier may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subsection (c) of this Section after it has completed two subsequent six-month rounds of monitoring that meet the criteria of subsection (d)(4)(B) of this Section and the supplier has received written approval from the Agency by a SEP pursuant to Section 611.110 that it is appropriate to resume reduced monitoring on an annual frequency.

ii) The supplier may resume monitoring for lead and copper once every three years at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (d)(4)(C) or (d)(4)(E) of this Section and the system has received a SEP under Section 611.110 from the Agency that it is appropriate to resume monitoring once every three years.

iii) The supplier may reduce the number of water quality parameter tap water samples required in accordance with Section 611.357(e)(1) and the frequency with which it collects such samples in accordance with Section 611.357(e)(2). Such a system may not resume monitoring once every three years for water quality parameters at the tap until it demonstrates, in accordance with the requirements of Section 611.357(e)(2), that it has re-qualified for monitoring once every three years.

BOARD NOTE: Subsections (d)(4)(H)(i) through (d)(4)(H)(iii) are derived from 40 CFR 141.86(d)(4)(vi)(B)(*1*) through (d)(4)(vi)(B)(*3*) ~~(2000)~~ (2002), since Illinois Administrative Code codification requirements allow only four indent levels of subsections.

e) Additional monitoring. The results of any monitoring conducted in addition to the minimum requirements of this Section must 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 G.

f) Invalidation of lead or copper tap water samples. A sample invalidated under this subsection does not count toward determining lead or copper 90th percentile levels under Section 611.350(c)(3) or toward meeting the minimum monitoring requirements of subsection (c) of this Section.

1) The Agency must invalidate a lead or copper tap water sample if it determines that one of the following conditions exists:

A) The laboratory establishes that improper sample analysis caused erroneous results;

B) The sample was taken from a site that did not meet the site selection criteria of this Section;

C) The sample container was damaged in transit; or

D) There is substantial reason to believe that the sample was subject to tampering.

2) The supplier must report the results of all samples to the Agency and all supporting documentation for samples the supplier believes should be invalidated.

3) To invalidate a sample under subsection (f)(1) of this Section, the decision and the rationale for the decision must be documented in writing. The Agency may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

4) The water supplier must collect replacement samples for any samples invalidated under this Section if, after the invalidation of one or more samples, the supplier has too few samples to meet the minimum requirements of subsection (c) of this Section. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the Agency invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period must not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples must be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

g) Monitoring waivers for small system suppliers. Any small system supplier that meets the criteria of this subsection (g) may apply to the Agency to reduce the frequency of monitoring for lead and copper under this Section to once every nine years (i.e., a "full waiver") if it meets all of the materials criteria specified in subsection (g)(1) of this Section and all of the monitoring criteria specified in subsection (g)(2) of this Section. Any small system supplier that meets the criteria in subsections (g)(1) and (g)(2) of this Section only for lead, or only for copper, may apply to the State for a waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (i.e., a "partial waiver").

1) Materials criteria. The supplier must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials or copper-containing materials, as those terms are defined in this subsection (g)(1), as follows:

A) Lead. To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (i.e., a "lead waiver"), the water supplier must provide certification and supporting documentation to the Agency that the system is free of all lead-containing materials, as follows:

i) It contains no plastic pipes that contain lead plasticizers, or plastic service lines that contain lead plasticizers; and

ii) It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of NSF Standard 61, section 9, incorporated by reference in Section 611.102.

BOARD NOTE: Corresponding 40 CFR 141.86(g)(1)(i)(B) specifies "any standard established pursuant to 42 USC 300g-6(e) (SDWA ~~Section~~ section 1417(e))." USEPA has stated that the NSF standard is that standard. See 62 Fed. Reg. 44684 (Aug. 22, 1997).

B) Copper. To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (i.e., a "copper waiver"), the water supplier must provide certification and supporting documentation to the Agency that the system contains no copper pipes or copper service lines.

2) Monitoring criteria for waiver issuance. The supplier must have completed at least one six-month round of standard tap water monitoring for lead and copper at sites approved by the Agency and from the number of sites required by subsection (c) of this Section and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing ~~and/~~or copper-containing materials, as appropriate, meet the following criteria:

A) Lead levels. To qualify for a full waiver, or a lead waiver, the supplier must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/~~L~~ℓ.

B) Copper levels. To qualify for a full waiver, or a copper waiver, the supplier must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/~~L~~ℓ.

3) State approval of waiver application. The Agency must notify the supplier of its waiver determination by a SEP issued pursuant to Section 611.110, in writing, setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the Agency may require the supplier to perform specific activities (e.g., limited monitoring, periodic outreach

to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small system supplier must continue monitoring for lead and copper at the tap as required by subsections (d)(1) through (d)(4) of this Section, as appropriate, until it receives written notification from the Agency that the waiver has been approved.

4) Monitoring frequency for suppliers with waivers.

  A) A supplier with a full waiver must conduct tap water monitoring for lead and copper in accordance with subsection (d)(4)(D) of this Section at the reduced number of sampling sites identified in subsection (c) of this Section at least once every nine years and provide the materials certification specified in subsection (g)(1) of this Section for both lead and copper to the Agency along with the monitoring results.

  B) A supplier with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with subsection (d)(4)(D) of this Section at the reduced number of sampling sites specified in subsection (c) of this Section at least once every nine years and provide the materials certification specified in subsection (g)(1) of this Section pertaining to the waived contaminant along with the monitoring results. Such a supplier also must continue to monitor for the non-waived contaminant in accordance with requirements of subsections (d)(1) through (d)(4) of this Section, as appropriate.

  C) If a supplier with a full or partial waiver adds a new source of water or changes any water treatment, the supplier must notify the Agency in writing in accordance with Section 611.360(a)(3). The Agency has the authority to require the supplier to add or modify waiver conditions (e.g., require recertification that the supplier's system is free of lead-containing or copper-containing materials, require additional rounds of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

  D) If a supplier with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate (e.g., as a result of new construction or repairs), the supplier must notify the Agency in writing no later than 60 days after becoming aware of such a change.

5) Continued eligibility. If the supplier continues to satisfy the requirements of subsection (g)(4) of this Section, the waiver will be renewed

automatically, unless any of the conditions listed in subsection (g)(5)(A) through (g)(5)(C) of this Section occur. A supplier whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring criteria of subsections (g)(1) and (g)(2) of this Section.

A) A supplier with a full waiver or a lead waiver no longer satisfies the materials criteria of subsection (g)(1)(A) of this Section or has a 90th percentile lead level greater than 0.005 mg/~~L~~ℓ.

B) A supplier with a full waiver or a copper waiver no longer satisfies the materials criteria of subsection (g)(1)(B) of this Section or has a 90th percentile copper level greater than 0.65 mg/~~L~~ℓ.

C) The State notifies the supplier, in writing, that the waiver has been revoked, setting forth the basis of its decision.

6) Requirements following waiver revocation. A supplier whose full or partial waiver has been revoked by the Agency is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

A) If the supplier exceeds the lead or copper action level, the supplier must implement corrosion control treatment in accordance with the deadlines specified in Section 611.351(e), and any other applicable requirements of this Subpart G.

B) If the supplier meets both the lead and the copper action level, the supplier must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in subsection (c) of this Section.

7) Pre-existing waivers. Small system supplier waivers approved by the Agency in writing prior to April 11, 2000 must remain in effect under the following conditions:

~~BOARD NOTE: Corresponding 40 CFR 141.86(g)(7) sets forth the April 11, 2000 date. The Board has retained that date to maintain consistency with the federal requirements, despite the fact that this subsection (g)(7) became effective after that date.~~

A) If the supplier has demonstrated that it is both free of lead-containing and copper-containing materials, as required by subsection (g)(1) of this Section and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of subsection (g)(2) of this Section, the waiver remains in effect so long as the supplier continues to meet the waiver eligibility criteria of subsection (g)(5) of this Section. The first round of tap water monitoring conducted pursuant to subsection (g)(4) of this Section must be completed no later than nine years after the last time the supplier monitored for lead and copper at the tap.

B) If the supplier has met the materials criteria of subsection (g)(1) of this Section but has not met the monitoring criteria of subsection (g)(2) of this Section, the supplier must conduct a round of monitoring for lead and copper at the tap demonstrating that it ~~meets~~ met the criteria of subsection (g)(2) of this Section no later than September 30, 2000. Thereafter, the waiver must remain in effect as long as the supplier meets the continued eligibility criteria of subsection (g)(5) of this Section. The first round of tap water monitoring conducted pursuant to subsection (g)(4) of this Section must be completed no later than nine years after the round of monitoring conducted pursuant to subsection (g)(2) of this Section.

~~BOARD NOTE: Corresponding 40 CFR 141.86(g)(7)(ii) sets forth the September 30, 2000 date. The Board has retained that date to maintain consistency with the federal requirements, despite the fact that this subsection (g)(7)(B) became effective after that date.~~

BOARD NOTE: Derived from 40 CFR 141.86 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.357 Monitoring for Water Quality Parameters

All large system suppliers, and all ~~small~~ small- and medium-sized system suppliers that exceed the lead action level or the copper action level, must monitor water quality parameters in addition to lead and copper in accordance with this Section. The requirements of this Section are summarized in Table G of this Part.

a) General Requirements.

1) Sample collection methods.

A) Use of tap samples. The totality of all tap samples collected by a supplier must be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the supplier, and seasonal variability. Although a supplier may conveniently conduct tap sampling for water quality parameters at sites used for coliform sampling performed pursuant to Subpart L of this Part, it is not required to do so, and a supplier is not required to perform tap sampling pursuant to this Section at taps targeted for lead and copper sampling under Section 611.356(a).

B) Use of entry point samples. Each supplier must collect samples at entry points to the distribution system from locations representative of each source after treatment. If a supplier draws water from more than one source and the sources are combined before distribution, the supplier must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

2) Number of samples.

A) Tap samples. Each supplier must collect two tap samples for applicable water quality parameters during each six-month monitoring period specified under subsections (b) through (e) of this Section from the number of sites indicated in the first column of Table E of this Part.

B) Entry point samples.

i) Initial monitoring. Except as provided in subsection (c)(3) of this Section, each supplier must collect two samples for each applicable water quality parameter at each entry point to the distribution system during each six-month monitoring period specified in subsection (b) of this Section.

ii) Subsequent monitoring. Each supplier must collect one sample for each applicable water quality parameter at each entry point to the distribution system during each six-month monitoring period specified in subsections (c) through (e) of this Section.

b) Initial Sampling.

1) Large systems. Each large system supplier must measure the applicable water quality parameters specified in subsection (b)(3) of this Section at taps and at each entry point to the distribution system during each six-month monitoring period specified in Section 611.356(d)(1).

2) ~~Small~~ Small- and medium-sized systems. Each ~~small~~ small- and medium-sized system supplier must measure the applicable water quality parameters specified in subsection (b)(3) of this Section at the locations

specified in this subsection during each six-month monitoring period specified in Section 611.356(d)(1) during which the supplier exceeds the lead action level or the copper action level.

3) Water quality parameters~~:~~.

A) pH;

B) Alkalinity;

C) Orthophosphate, when an inhibitor containing a phosphate compound is used;

D) Silica, when an inhibitor containing a silicate compound is used;

E) Calcium;

F) Conductivity; and

G) Water temperature.

c) Monitoring after installation of corrosion control.

1) Large systems. Each large system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(d)(4) must measure the water quality parameters at the locations and frequencies specified in subsections (c)(4) and (c)(5) of this Section during each six-month monitoring period specified in Section 611.356(d)(2)(A).

2) ~~Small~~ Small- and medium-sized systems. Each ~~small~~ small- or medium-sized system that installs optimal corrosion control treatment pursuant to Section 611.351(e)(5) must measure the water quality parameters at the locations and frequencies specified in subsections (c)(4) and (c)(5) of this Section during each six-month monitoring period specified in Section 611.356(d)(2)(B) in which the supplier exceeds the lead action level or the copper action level.

3) Any groundwater system can limit entry point sampling described in subsection (c)(2) of this Section to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated groundwater sources mixes with water from treated groundwater sources, the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this subsection, the system must provide to the Agency written information identifying the selected entry points and

documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

4) Tap water samples, two samples at each tap for each of the following water quality parameters:

A) pH;

B) Alkalinity;

C) Orthophosphate, when an inhibitor containing a phosphate compound is used;

D) Silica, when an inhibitor containing a silicate compound is used; and

E) Calcium, when calcium carbonate stabilization is used as part of corrosion control.

5) Entry point samples, except as provided in subsection (c)(3) of this Section, one sample at each entry point to the distribution system every two weeks (bi-weekly) for each of the following water quality parameters:

A) pH;

B) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

C) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

d) Monitoring after the Agency specifies water quality parameter values for optimal corrosion control.

1) Large ~~systems~~ system suppliers. After the Agency has specified the values for applicable water quality control parameters reflecting optimal corrosion control treatment pursuant to Section 611.352(f), each large system supplier must measure the applicable water quality parameters in accordance with subsection (c) of this Section and determine compliance with the requirements of Section 611.352(g) every six months with the first six-month period to begin on the date the State specifies the optimal values under Section 611.352(f).

2) ~~Small~~ Small- and medium-sized ~~systems~~ system suppliers. Each ~~small~~ small- or medium-sized system supplier must conduct such monitoring during each six-month monitoring period specified in this subsection (d) in which the supplier exceeds the lead action level or the copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to Section 611.356(d)(4) at the time of the action level exceedence, the end of the applicable six-month period under this subsection must coincide with the end of the applicable monitoring period under Section 611.356(d)(4).

3) Compliance with Agency-designated optimal water quality parameter values must be determined as specified under Section 611.352(g).

e) Reduced monitoring.

1) Reduction in tap monitoring. A supplier that has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under subsection (d) of this Section must continue monitoring at the entry points to the distribution system as specified in subsection (c)(4) of this Section. Such a supplier may collect two samples from each tap for applicable water quality parameters from the reduced number of sites indicated in the second column of Table E of this Part during each subsequent six-month monitoring period.

2) Reduction in monitoring frequency.

A) Staged reductions in monitoring frequency.

i) Annual monitoring. A supplier that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified pursuant to Section 611.352(f) during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subsection (e)(1) of this Section from every six months to annually.

ii) Triennial monitoring. A supplier that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified pursuant to Section 611.352(f) during three consecutive years of annual monitoring under subsection (e)(2)(A)(i) of this Section may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subsection (e)(1) of this Section from annually to once every three years.

B) A water supplier may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in subsection (e)(1) of this Section to every three years if it demonstrates the following during two consecutive monitoring periods:

i) That its tap water lead level at the 90th percentile is less than or equal to the PQL for lead specified in Section 611.359(a)(1)(B)~~,~~;

ii) That its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/~~L~~ℓ for copper in Section 611.350(c)(2)~~,~~; and

iii) That it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f).

3) A supplier that conducts sampling annually or every three years must collect these samples evenly throughout the calendar year so as to reflect seasonal variability.

4) Any supplier subject to a reduced monitoring frequency pursuant to this subsection that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified pursuant to Section 611.352(f) for more than nine days in any six-month period specified in Section 611.352(g) must resume tap water sampling in accordance with the number and frequency requirements of subsection (d) of this Section. Such a system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in subsection (e)(1) of this Section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that subsection or may resume monitoring once every three years for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (e)(2)(A) or (e)(2)(B) of this Section.

f) Additional monitoring by ~~systems~~ suppliers. The results of any monitoring conducted in addition to the minimum requirements of this Section must be considered by the supplier and the Agency in making any determinations (i.e., determining concentrations of water quality parameters) under this Section or Section 611.352.

BOARD NOTE: Derived from 40 CFR 141.87 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.358 Monitoring for Lead and Copper in Source Water

a) Sample location, collection methods, and number of samples.

1) A supplier that fails to meet the lead action level or the copper action level on the basis of tap samples collected in accordance with Section 611.356 must collect lead and copper source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods:

A) A groundwater supplier must take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment (hereafter called a sampling point). The supplier must take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

B) A surface water supplier must take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point that is representative of each source after treatment (hereafter called a sampling point). The system must take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

BOARD NOTE: For the purposes of this subsection (a)(1)(B), surface water systems include systems with a combination of surface and ground sources.

C) If a supplier draws water from more than one source and the sources are combined before distribution, the supplier must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

D) The Agency may, by a SEP issued pursuant to Section 611.110, reduce the total number of samples that must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to

0.001 mg/~~L~~ℓ or the copper concentration is greater than or equal to 0.160 mg/~~L~~ℓ, then the supplier must do either of the following:

i) The supplier must take and analyze a follow-up sample within 14 days at each sampling point included in the composite; or

ii) If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the supplier may use these instead of resampling.

2) SEP requiring an additional sample.

A) When the Agency determines that the results of sampling indicate an exceedence of the lead or copper MPC established under Section 611.353(b)(4), it must, by a SEP issued pursuant to Section 611.110, require the supplier to collect one additional sample as soon as possible after the initial sample at the same sampling point, but no later than two weeks after the supplier took the initial sample.

B) If a supplier takes an Agency-required confirmation sample for lead or copper, the supplier must average the results obtained from the initial sample with the results obtained from the confirmation sample in determining compliance with the Agency-specified lead and copper MPCs.

i) Any analytical result below the MDL must be considered as zero for the purposes of averaging.

ii) Any value above the MDL but below the PQL must either be considered as the measured value or be considered one-half the PQL.

b) Monitoring frequency after system exceeds tap water action level. A supplier that exceeds the lead action level or the copper action level in tap sampling must collect one source water sample from each entry point to the distribution system within six months after the exceedence.

c) Monitoring frequency after installation of source water treatment. A supplier that installs source water treatment pursuant to Section 611.353(a)(3) must collect an additional source water sample from each entry point to the distribution system during each of two consecutive six-month monitoring periods on or before the deadline specified in Section 611.353(a)(4).

d) Monitoring frequency after the Agency has specified the lead and copper MPCs or has determined that source water treatment is not needed.

1) A supplier must monitor at the frequency specified by subsection (d)(1)(A) or (d)(1)(B) of this Section where the Agency has specified the MPCs pursuant to Section 611.353(b)(4) or has determined that the supplier is not required to install source water treatment pursuant to Section 611.353(b)(2).

A) GWS suppliers.

i) A GWS supplier required to sample by subsection (d)(1) of this Section must collect samples once during the three-year compliance period (as that term is defined in Section 611.101) during which the Agency makes its determination pursuant to Section 611.353(b)(4) or 611.353(b)(2).

ii) A GWS supplier required to sample by subsection (d)(1) of this Section must collect samples once during each subsequent compliance period.

B) A SWS or mixed system supplier must collect samples annually, the first annual monitoring period to begin on the date on which the Agency makes its determination pursuant to Section 611.353(b)(4) or 611.353(b)(2).

2) A supplier is not required to conduct source water sampling for lead or copper if the supplier meets the action level for the specific contaminant in all tap water samples collected during the entire source water sampling period applicable under subsection (d)(1)(A) or (d)(1)(B) of this Section.

e) Reduced monitoring frequency.

1) A GWS supplier may reduce the monitoring frequency for lead and copper in source water to once during each nine-year compliance cycle (as that term is defined in Section 611.101) if the supplier meets one of the following criteria:

A) The supplier demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in Section 611.353(b)(4) during at least three consecutive compliance periods under subsection (d)(1) of this Section; or

B) The Agency has determined, by a SEP issued pursuant to Section 611.110, that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under subsection (d)(1) of this Section, the concentration of lead in source water was less than or equal to 0.005 mg/~~L~~ℓ and the concentration of copper in source water was less than or equal to 0.65 mg/~~L~~ℓ.

2) A SWS or mixed system supplier may reduce the monitoring frequency in subsection (d)(1) of this Section to once during each nine-year compliance cycle (as that term is defined in Section 611.101) if the supplier meets one of the following criteria:

A) The supplier demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Agency under Section 611.353(b)(4) for at least three consecutive years; or

B) The Agency has determined, by a SEP issued pursuant to Section 611.110, that source water treatment is not needed and the supplier demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/~~L~~ℓ and the concentration of copper in source water was less than or equal to 0.65 mg/~~L~~ℓ.

3) A supplier that uses a new source of water is not eligible for reduced monitoring for lead or copper until it demonstrates by samples collected from the new source during three consecutive monitoring periods, of the appropriate duration provided by subsection (d)(1) of this Section, that lead or copper concentrations are below the MPC as specified by the Agency pursuant to Section 611.353(a)(4).

BOARD NOTE: Derived from 40 CFR 141.88 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.359 Analytical Methods

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

a) Analyses for lead and copper performed for the purposes of compliance with this Subpart G must 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 do the following:

1) Analyze performance evaluation samples that include lead and copper

provided by USEPA Environmental Monitoring and Support Laboratory or equivalent samples provided by the Agency; and

2) Achieve quantitative acceptance limits as follows:

A) For lead: ±30 percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.005 mg/~~L~~ℓ (the PQL for lead is 0.005 mg/~~L~~ℓ);

B) For copper: ±10 percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.050 mg/~~L~~ℓ (the PQL for copper is 0.050 mg/~~L~~ℓ);

C) Achieve the method detection limit (MDL) for lead (0.001 mg/~~L~~ℓ, as defined in Section 611.350(a)) according to the procedures in 35 Ill. Adm. Code ~~183~~ 186 and 40 CFR 136, Appendix B: "Definition and Procedure for the Determination of the Method Detection Limit--Revision 1.11" ~~(1999)~~ (2002). This need only be accomplished if the laboratory will be processing source water composite samples under Section 611.358(a)(1)(C); and

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

BOARD NOTE: Subsection (a) is derived from 40 CFR 141.89(a) and (a)(1) (2002).

b) The Agency must, 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 G if the data were collected and analyzed in accordance with the requirements of this Subpart G.

BOARD NOTE: Subsection (b) is derived from 40 CFR 141.89(a)(2) (2002).

c) Reporting lead and copper levels.

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

2) All lead and copper levels measured less than the PQL and greater than the MDL (0.005 mg/~~L~~ℓ > Pb > MDL and 0.050 mg/~~L~~ℓ > Cu > MDL) must be either reported as measured or as one-half the PQL set forth in subsection (a) of this Section (i.e., reported as 0.0025 mg/~~L~~ℓ for lead or 0.025 mg/~~L~~ℓ for copper).

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

BOARD NOTE: ~~Derived~~ Subsection (c) is derived from 40 CFR 141.89(a)(3) and (a)(4) ~~(1999), as amended at 65 Fed. Reg. 2012 (Jan. 12, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.360 Reporting

A supplier must 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) Except as provided in subsection (a)(1)(viii) of this ~~section~~ Section, a supplier must report the following information for all samples specified in Section 611.356 and for all water quality parameter samples specified in Section 611.357 within ten days of the end of each applicable sampling period specified in Sections 611.356 and 611.357 (i.e., every six months, annually, every three 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 (a)(7) under which the site was selected for the supplier's sampling pool;

B) Documentation for each tap water lead or copper sample for which the water supplier requests invalidation pursuant to Section 611.356(f)(2);

C) This subsection (a)(1)(C) corresponds with 40 CFR 141.90(a)(1)(iii), a provision that USEPA removed and marked "reserved~~" at 65 Fed. Reg. 2012 (Jan. 12, 2000)~~." This statement preserves structural parity with the federal rules;

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)), unless the Agency calculates the system's 90th percentile lead and copper levels under subsection (h) of this Section;

E) With the exception of initial tap sampling conducted pursuant to Section 611.356(d)(1), the supplier must 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 points for applicable water quality parameters pursuant to Section 611.357(b) through (e).

H) A water supplier must report the results of all water quality parameter samples collected under Section 611.357(c) through (f) during each six-month monitoring period specified in Section 611.357(d) within the first 10 days following the end of the monitoring period, unless the Agency has specified, by a SEP granted pursuant to Section 611.110, a more frequent reporting requirement.

2) For a NTNCWS supplier, or a CWS supplier meeting the criteria of Sections 611.355(c)(7)(A) and (c)(7)(B), that does not have enough taps which can provide first-draw samples, the supplier must do either of the following:

A) Provide written documentation to the Agency that identifies standing times and locations for enough non-first-draw samples to make up its sampling pool under Section 611.356(b)(5) by the start of the first applicable monitoring period under Section 611.356(d) that commences after April 11, 2000, unless the Agency has waived prior Agency approval of non-first-draw sample sites selected by the supplier pursuant to Section 611.356(b)(5); or

~~BOARD NOTE: Corresponding 40 CFR 141.90(a)(2)(i) sets forth the April 11, 2000 date. The Board has retained that date to maintain structural consistency with the federal requirements, despite the fact that this subsection (a)(2)(A) became effective after that date.~~

B) If the Agency has waived prior approval of non-first-draw sample sites selected by the supplier, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to Section 611.356(b)(5) and include this information with the lead and copper tap sample results required to be submitted pursuant to subsection (a)(1)(A) of this Section.

3) No later than 60 days after the addition of a new source or any change in water treatment, unless the Agency requires earlier notification, a water supplier deemed to have optimized corrosion control under Section 611.351(b)(3), a water supplier subject to reduced monitoring pursuant to Section 611.356(d)(4), or a water supplier subject to a monitoring waiver pursuant to Section 611.356(g), must send written documentation to the Agency describing the change. In those instances where prior Agency approval of the treatment change or new source is not required, USEPA has stated that it encourages water systems to provide the notification to the Agency beforehand to minimize the risk the treatment change or new source will adversely affect optimal corrosion control.

4) Any small system supplier applying for a monitoring waiver under Section 611.356(g), or subject to a waiver granted pursuant to Section 611.356(g)(3), must provide the following information to the Agency in writing by the specified deadline:

A) By the start of the first applicable monitoring period in Section 611.356(d), any small water system supplier applying for a monitoring waiver must provide the documentation required to demonstrate that it meets the waiver criteria of Sections 611.356(g)(1) and (g)(2).

B) No later than nine years after the monitoring previously conducted pursuant to Section 611.356(g)(2) or Section 611.356(g)(4)(A), each small system supplier desiring to maintain its monitoring waiver must provide the information required by Sections 611.356(g)(4)(A) and (g)(4)(B).

C) No later than 60 days after it becomes aware that it is no longer free of lead-containing or copper-containing material, as appropriate, each small system supplier with a monitoring waiver must provide written notification to the Agency, setting forth the circumstances resulting in the lead-containing or copper-containing materials being introduced into the system and what corrective action, if any, the supplier plans to remove these materials.

D) By October 10, 2000, any small system supplier with a waiver granted prior to April 11, 2000 and that ~~has~~ had not previously met the requirements of Section 611.356(g)(2) must ~~provide~~ have provided the information required by that subsection.

~~BOARD NOTE: Corresponding 40 CFR 141.90(a)(2)(iv) sets forth the April 11, 2000 and October 10, 2000 dates. The Board has retained those dates to maintain structural consistency with the~~

~~federal requirements, despite the fact that this subsection (a)(2)(D) became effective after that date.~~

5) Each GWS supplier that limits water quality parameter monitoring to a subset of entry points under Section 611.357(c)(3) must provide, by the commencement of such monitoring, written correspondence to the Agency that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

b) Reporting for source water monitoring.

1) A supplier must report the sampling results for all source water samples collected in accordance with Section 611.358 within ten 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 must 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 must 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 must 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 must 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 must 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 seven 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 must demonstrate to the Agency in writing that the supplier has done either of the following:

A) Replaced in the previous 12 months at least seven percent of the initial number of lead service lines in its distribution system (or any greater number of lines specified by the Agency pursuant to Section 611.354(e))~~,~~; or

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

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

Section 611.354(e)).

3) The annual letter submitted to the Agency pursuant to subsection (e)(2) of this Section must 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) Any supplier that collects lead service line samples following partial lead service line replacement required by Section 611.354 must report the results to the Agency within the first ten days of the month following the month in which the supplier receives the laboratory results, or as specified by the Agency. The Agency may, by a SEP granted pursuant to Section 611.110, eliminate this requirement to report these monitoring results. A supplier must also report any additional information as specified by the Agency, and in a time and manner prescribed by the Agency, to verify that all partial lead service line replacement activities have taken place.

f) Reporting for public education program.

1) Any water supplier that is subject to the public education requirements in Section 611.355 must, within ten days after the end of each period in which the supplier is required to perform public education tasks in accordance with Section 611.355(c), send written documentation to the Agency that contains the following:

A) A demonstration that the supplier has delivered the public education materials that meet the content requirements in Sections 611.355(a) and (b) and the delivery requirements in Section 611.355(c); and

B) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the supplier delivered public education materials during the period in which the supplier was required to perform public education tasks.

2) Unless required by the Agency, by a SEP issued pursuant to Section 611.110, a supplier that previously has submitted the information required by subsection (f)(1)(B) of this Section need not resubmit the information required by subsection (f)(1)(B) of this Section, as long as there have been no changes in the distribution list and the supplier certifies that the public education materials were distributed to the same list submitted previously.

g) Reporting of additional monitoring data. Any supplier that collects sampling data in addition to that required by this Subpart G must report the results of that sampling to the Agency within the first ten days following the end of the applicable sampling periods specified by Sections 611.356 through 611.358 during which the samples are collected.

h) Reporting of 90th percentile lead and copper concentrations where the Agency calculates a system's 90th percentile concentrations. A water supplier is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by subsection (a)(1)(D) of this Section if the following is true:

1) The Agency has previously notified the water supplier that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to subsection (h)(2)(A) of this Section, and has specified a date before the end of the applicable monitoring period by which the supplier must provide the results of lead and copper tap water samples;

2) The supplier has provided the following information to the Agency by the date specified in subsection (h)(1) of this Section:

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), (a)(4), (a)(5), (a)(6), or (a)(7) under which the site was selected for the system's sampling pool, pursuant to subsection (a)(1)(A) of this Section; and

B) An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed; and

3) The Agency has provided the results of the 90th percentile lead and copper calculations, in writing, to the water supplier before the end of the monitoring period.

BOARD NOTE: Derived from 40 CFR 141.90 ~~(1999), as amended at 65 Fed. Reg. 2012 (Jan.~~

~~12, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.361 Recordkeeping

Any supplier subject to the requirements of this Subpart G ~~shall~~ must retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, Agency determinations, and any other information required by Sections 611.351 through Section 611.360. Each supplier ~~shall~~ must retain the records required by this ~~section~~ Section for at least 12 years.

BOARD NOTE: Derived from 40 CFR 141.91 ~~(1992)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

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

Section 611.380 General Requirements

a) The requirements of this Subpart I constitute NPDWRs.

1) The regulations in this Subpart I establish standards under which a CWS supplier or an NTNCWS supplier that adds a chemical disinfectant to the water in any part of the drinking water treatment process or which provides water that contains a chemical disinfectant must modify its practices to meet MCLs and MRDLs in Sections 611.312 and 611.313, respectively, and must meet the treatment technique requirements for DBP precursors in Section 611.385.

2) The regulations in this Subpart I establish standards under which a transient non-CWS supplier that uses chlorine dioxide as a disinfectant or oxidant must modify its practices to meet the MRDL for chlorine dioxide in Section 611.313.

3) The Board has established MCLs for TTHM and HAA5 and treatment technique requirements for DBP precursors to limit the levels of known and unknown DBPs that may have adverse health effects. These DBPs may include chloroform, bromodichloromethane, dibromochloromethane, bromoform, dichloroacetic acid, and trichloroacetic acid.

b) Compliance dates.

1) CWSs and NTNCWSs. Unless otherwise noted, a supplier must comply with the requirements of this Subpart I as follows: A Subpart B system

supplier serving 10,000 or more persons must comply with this Subpart I beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons or a supplier using only groundwater not under the direct influence of surface water must comply with this Subpart I beginning January 1, 2004.

2) Transient non-CWSs. A Subpart B system supplier serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this Subpart I beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant or a supplier using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this Subpart I beginning January 1, 2004.

c) Each CWS or NTNCWS supplier regulated under subsection (a) of this Section must be operated by qualified personnel who meet the requirements specified in 35 Ill. Adm. Code 680.

d) Control of disinfectant residuals. Notwithstanding the MRDLs in Section 611.313, a supplier may increase residual disinfectant levels in the distribution system of chlorine or chloramines (but not chlorine dioxide) to a level and for a time necessary to protect public health, to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm run-off events, source water contamination events, or cross-connection events.

BOARD NOTE: Derived from 40 CFR 141.130 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.381 Analytical Requirements

a) A supplier must use only the analytical methods specified in this Section to demonstrate compliance with the requirements of this Subpart I.

b) Disinfection byproducts (DBPs).

1) A supplier must measure disinfection byproducts (DBPs) by the methods (as modified by the footnotes) listed in the following table:

Approved Methods for Disinfection Byproduct (DBP) Compliance Monitoring

Methodology[2]	EPA Method	Standard Method	Byproduct Measured[1]
P&T/GC/ElCD & PID	[3]502.2		TTHM
P&T/GC/MS	524.2		TTHM
LLE/GC/ECD	551.1		TTHM
LLE/GC/ECD		6251 B	HAA5
SPE/GC/ECD	552.1		HAA5
LLE/GC/ECD	552.2		HAA5
Amperometric Titration		4500-ClO_2 E	Chlorite[4]
IC	300.0		Chlorite[4]
IC	300.1		Chlorite[4], Bromate

[1] The listed method is approved for measuring specified disinfection byproduct.

[2] P&T = purge and trap; GC = gas chromatography; ElCD = electrolytic conductivity detector; PID = photoionization detector; MS = mass spectrometer; LLE = liquid/liquid extraction; ECD = electron capture detector; SPE = solid phase extractor; IC = ion chromatography.

[3] If TTHMs are the only analytes being measured in the sample, then a PID is not required.

[4] Amperometric titration may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in Section 611.382(b)(2)(A)(i). Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in Sections 611.382(b)(2)(A)(ii) and (b)(2)(B).

2) Analysis under this Section for DBPs must be conducted by laboratories that have received certification by USEPA or the Agency except as specified under subsection (b)(3) of this Section. To receive certification to conduct analyses for the contaminants in Section 611.312, the laboratory must carry out annual analyses of performance evaluation (PE) samples approved by USEPA or the Agency. In these analyses of PE samples, the laboratory must achieve quantitative results within the acceptance limit on a minimum of 80% of the analytes included in each PE sample. The acceptance limit is defined as the 95% confidence interval calculated around the mean of the PE study data between a maximum and minimum acceptance limit of ±50% and ±15% of the study mean.

3) A party approved by USEPA or the Agency must measure daily chlorite samples at the entrance to the distribution system.

c) Disinfectant residuals.

1) A supplier must measure residual disinfectant concentrations for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the methods (as modified by the footnotes) listed in the following table:

Approved Methods for Disinfectant Residual Compliance Monitoring

Methodology	Standard Method	ASTM Method	Residual Measured[1]
Amperometric Titration	4500-Cl D	~~D 1253-86~~ D1253-86	Free chlorine, Combined chlorine, Total chlorine
Low Level Amperometric Titration	4500-Cl E		Total chlorine
DPD Ferrous Titrimetric	4500-Cl F		Free chlorine, Combined chlorine, Total chlorine
DPD Colorimetric	4500-Cl G		Free chlorine, Combined chlorine, Total chlorine
Syringaldazine (FACTS)	4500-Cl H		Free chlorine
Iodometric Electrode	4500-Cl I		Total chlorine
DPD	4500-ClO_2 D		Chlorine dioxide
Amperometric Method II	4500-ClO_2 E		Chlorine dioxide

[1] The listed method is approved for measuring specified disinfectant residual.

2) If approved by the Agency, a supplier may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits.

3) A party approved by USEPA or the Agency must measure residual disinfectant concentration.

d) A supplier required to analyze parameters not included in subsections (b) and (c) of this Section must use the methods listed below. A party approved by USEPA or the Agency must measure ~~these~~ the following parameters~~.~~:

1) Alkalinity. All methods allowed in Section 611.611(a)(21) for measuring

alkalinity~~,~~;

2) Bromide. USEPA Method 300.0 or USEPA Method 300.1~~,~~;

3) Total Organic Carbon (TOC). Standard Method 5310 B (High-Temperature Combustion Method), Standard Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method), or Standard Method 5310 D (Wet-Oxidation Method). TOC samples may not be filtered prior to analysis. TOC samples must either be analyzed or must be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 24 hours. Acidified TOC samples must be analyzed within 28 days~~,~~;

4) Specific Ultraviolet Absorbance (SUVA). SUVA is equal to the UV absorption at 254 nm (UV_{254}) (measured in m^{-1}) divided by the dissolved organic carbon (DOC) concentration (measured as mg/~~L~~ℓ). In order to determine SUVA, it is necessary to separately measure UV_{254} and DOC. When determining SUVA, a supplier must use the methods stipulated in subsection (d)(4)(A) of this Section to measure DOC and the method stipulated in subsection (d)(4)(B) of this Section to measure UV_{254}. SUVA must be determined on water prior to the addition of disinfectants/oxidants by the supplier. DOC and UV_{254} samples used to determine a SUVA value must be taken at the same time and at the same location~~,~~;

   A) Dissolved Organic Carbon (DOC). Standard Method 5310 B (High-Temperature Combustion Method), Standard Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method), or Standard Method 5310 D (Wet-Oxidation Method). Prior to analysis, DOC samples must be filtered through a 0.45 μm pore-diameter filter. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet the following standards: DOC ~~<~~ less than 0.5 mg/~~L~~ℓ. DOC samples must be filtered through the 0.45 μm pore-diameter filter prior to acidification. DOC samples must either be analyzed or must be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 48 hours. Acidified DOC samples must be analyzed within 28 days~~,~~; and

   B) Ultraviolet Absorption at 254 nm ~~(UV$_{fffff4}$)~~ (UV_{254}). Method 5910 B (Ultraviolet Absorption Method). UV absorption must be measured at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, UV_{254} samples must be filtered through a 0.45 μm pore-diameter filter. The pH of UV_{254} samples may not be adjusted. Samples must be analyzed as soon as practical after sampling, not to exceed 48 hours~~,~~; and

5) pH. All methods allowed in Section ~~611.611 (a) (17)~~ 611.611(a)(17) for measuring pH.

BOARD NOTE: Derived from 40 CFR 141.131 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.382 Monitoring Requirements

a) General requirements.

1) A supplier must take all samples during normal operating conditions.

2) A supplier may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required with Agency approval.

3) Failure to monitor in accordance with the monitoring plan required under subsection (f) of this Section is a monitoring violation.

4) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the supplier's failure to monitor makes it impossible to determine compliance with MCLs or MRDLs, this failure to monitor will be treated as a violation for the entire period covered by the annual average.

5) A supplier must use only data collected under the provisions of this Subpart I or under the Information Collection Rule (40 CFR 141, Subpart M) to qualify for reduced monitoring.

b) Monitoring requirements for disinfection byproducts (DBPs).

1) TTHMs and HAA5.

A) Routine monitoring. A supplier must monitor at the following frequency ~~indicated in the following table~~:

~~Routine Monitoring Frequency for TTHM and HAA5~~

~~Type of supplier~~	~~Minimum monitoring frequency~~	~~Sample location in the distribution system~~

~~Subpart B system supplier serving 10,000 or more persons.~~	~~Four water samples per quarter per treatment plant.~~	~~At least 25 percent of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods.1~~
~~Subpart B system supplier serving from 500 to 9,999 persons.~~	~~One water sample per quarter per treatment plant.~~	~~Locations representing maximum residence time.1~~
~~Subpart B system supplier serving fewer than 500 persons.~~	~~One sample per year per treatment plant during month of warmest water temperature.~~	~~Locations representing maximum residence time.1 If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the supplier must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the supplier~~

		~~meets the standards in subsection (b)(1)(D) of this Section.~~
~~A supplier using only groundwater not under direct influence of surface water using chemical disinfectant and serving 10,000 or more persons.~~	~~One water sample per quarter per treatment plant.2~~	~~Locations representing maximum residence time.1~~
~~A supplier using only groundwater not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons.~~	~~One sample per year per treatment plant2 during month of warmest water temperature.~~	~~Locations representing maximum residence time.1 If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, the supplier must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the supplier meets standards in subsection (b)(1)(D) of this Section.~~

i) A Subpart B system supplier that serves 10,000 or more persons must collect four water samples per quarter per treatment plant. At least 25 percent of all samples collected each quarter must be collected at locations representing maximum residence time. The remaining samples may be taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account the number of persons served, the different sources of water, and the different treatment methods.

ii) A Subpart B system supplier that serves from 500 to 9,999 persons must collect one water sample per quarter per treatment plant. The samples must be collected from locations representing maximum residence time.

iii) A Subpart B system supplier that serves fewer than 500 persons must collect one sample per year per treatment plant during month of warmest water temperature. The samples must be collected from locations representing maximum residence time. If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the supplier must increase the monitoring frequency to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the supplier meets the standards in subsection (b)(1)(D) of this Section.

iv) A supplier that uses only groundwater not under direct influence of surface water, which uses chemical disinfectant, and which serves 10,000 or more persons must collect one water sample per quarter per treatment plant. The samples must be collected from locations representing maximum residence time.

v) A supplier that uses only groundwater not under direct influence of surface water, which uses chemical disinfectant, and which serves fewer than 10,000 persons must collect one sample per year per treatment plant during month of warmest water temperature. The samples must be collected from locations representing maximum residence time. If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, the supplier must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the supplier meets standards in subsection (b)(1)(D) of this Section.

~~1~~ BOARD NOTE: If a supplier elects to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) must be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system. For a supplier using groundwater not under the direct influence of surface water, multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with Agency approval.

~~2 Multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with Agency approval.~~

B) A supplier may reduce monitoring, except as otherwise provided, in accordance with the following~~ table~~:

~~Reduced Monitoring Frequency for TTHM and HAA5~~

~~If you are a . . .~~	~~You may reduce monitoring if you have monitored at least one year and your . . .~~	~~To this level~~
~~Subpart B system supplier serving 10,000 or more persons that has a source water annual average TOC level, before any treatment, ≤4.0 mg/L.~~	~~TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.~~	~~One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.~~
~~Subpart B system supplier serving from 500 to 9,999 persons that has a source water annual average TOC level, before any treatment, ≤4.0 mg/L.~~	~~TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.~~	~~One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.~~ ~~NOTE: Any Subpart B system supplier serving fewer than 500 persons may not reduce its~~

		~~monitoring to less than one sample per treatment plant per year.~~
~~A supplier using only groundwater not under direct influence of surface water using chemical disinfectant and serving 10,000 or more persons.~~	~~TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.~~	~~One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.~~
~~A supplier using only groundwater not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons.~~	~~TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L for two consecutive years or TTHM annual average ≤0.020 mg/L and HAA5 annual average ≤0.015 mg/L for one year.~~	~~One sample per treatment plant per three year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following quarter in which the supplier qualifies for reduced monitoring.~~

i) A Subpart B system supplier that serves 10,000 or more persons and which has a source water annual average TOC level, before any treatment, of less than or equal to 4.0 mg/ℓ may reduce monitoring if it has monitored for at least one year and its TTHM annual average is less than or equal to 0.040 mg/ℓ and HAA5 annual average is less than or equal to 0.030 mg/ℓ. The reduced monitoring allowed is a minimum of one sample per treatment plant per quarter at a distribution system location reflecting maximum residence time.

ii) A Subpart B system supplier that serves from 500 to 9,999 persons and which has a source water annual average TOC level, before any treatment, of less than or equal to 4.0

mg/ℓ may reduce monitoring if it has monitored at least one year and its TTHM annual average is less than or equal to 0.040 mg/ℓ and HAA5 annual average is less than or equal to 0.030 mg/ℓ. The reduced monitoring allowed is a minimum of one sample per treatment plant per year at a distribution system location reflecting maximum residence time during month of warmest water temperature.

BOARD NOTE: Any Subpart B system supplier serving fewer than 500 persons may not reduce its monitoring to less than one sample per treatment plant per year.

iii) A supplier using only groundwater not under direct influence of surface water using chemical disinfectant and serving 10,000 or more persons may reduce monitoring if it has monitored at least one year and its TTHM annual average is less than or equal to 0.040 mg/ℓ and HAA5 annual average is less than or equal to 0.030 mg/ℓ. The reduced monitoring allowed is a minimum of one sample per treatment plant per year at a distribution system location reflecting maximum residence time during month of warmest water temperature.

iv) A supplier using only groundwater not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons may reduce monitoring if it has monitored at least one year and its TTHM annual average is less than or equal to 0.040 mg/ℓ and HAA5 annual average is less than or equal to 0.030 mg/ℓ for two consecutive years or TTHM annual average is less than or equal to 0.020 mg/ℓ and HAA5 annual average is less than or equal to 0.015 mg/ℓ for one year. The reduced monitoring allowed is a minimum of one sample per treatment plant per three year monitoring cycle at a distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following the quarter in which the supplier qualifies for reduced monitoring.

C) A supplier on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for a supplier that must monitor quarterly) or the result of the sample (for a supplier that must monitor no more frequently than annually) is no more than 0.060 mg/~~L~~ℓ and 0.045 mg/~~L~~ℓ for TTHMs and HAA5, respectively. A supplier that does not meet these levels must resume monitoring at the frequency identified in subsection (b)(1)(A) of this Section (minimum monitoring frequency column) in the quarter immediately following the monitoring period in which the supplier exceeds 0.060 mg/~~L~~ℓ for TTHMs or 0.045 mg/~~L~~ℓ for HAA5. For a supplier using only groundwater not under the direct influence of surface water and serving fewer than 10,000 persons, if either the TTHM annual average is ~~>~~ greater than 0.080 mg/~~L~~ℓ or the HAA5 annual average is ~~>~~ greater than 0.060 mg/~~L~~ℓ, the supplier must go to increased monitoring identified in subsection (b)(1)(A) of this Section (sample location column) in the quarter immediately following the monitoring period in which the supplier exceeds 0.080 mg/~~L~~ℓ for TTHMs or 0.060 mg/~~L~~ℓ for HAA5.

D) A supplier on increased monitoring may return to routine monitoring if, after at least one year of monitoring, its TTHM annual average is ~~≤~~ less than or equal to 0.060 mg/~~L~~ℓ and its HAA5 annual average is ~~≤~~ less than or equal to 0.045 mg/~~L~~ℓ.

E) The Agency may return a supplier to routine monitoring.

2) Chlorite. A CWS or NTNCWS supplier using chlorine dioxide, for disinfection or oxidation, must conduct monitoring for chlorite.

A) Routine monitoring.

i) Daily monitoring. A supplier must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the supplier must take additional samples in the distribution system the following day at the locations required by subsection (b)(2)(B) of this Section, in addition to the sample required at the entrance to the distribution system.

ii) Monthly monitoring. A supplier must take a three-sample set each month in the distribution system. The supplier must take one sample at each of the following locations: near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling must be conducted in the same manner (as three-sample sets, at the specified locations). The supplier may use the results of additional monitoring conducted under subsection (b)(2)(B) of this Section to meet the requirement for monitoring in this subsection (b)(2)(A)(ii).

B) Additional monitoring. On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the supplier must take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

C) Reduced monitoring.

i) Chlorite monitoring at the entrance to the distribution system required by subsection (b)(2)(A)(i) of this Section may not be reduced.

ii) Chlorite monitoring in the distribution system required by subsection (b)(2)(A)(ii) of this Section may be reduced to one three-sample set per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system under subsection (b)(2)(A)(ii) of this Section has exceeded the chlorite MCL and the supplier has not been required to conduct monitoring under subsection (b)(2)(B) of this Section. The supplier may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under subsection (b)(2)(A)(ii) of this Section exceeds the chlorite MCL or the supplier is required to conduct monitoring under subsection (b)(2)(B) of this Section, at which time the supplier must revert to routine monitoring.

3) Bromate.

A) Routine monitoring. A CWS or NTNCWS supplier using ozone, for disinfection or oxidation, must take one sample per month for each treatment plant in the system using ozone. A supplier must take samples monthly at the entrance to the distribution system while the ozonation system is operating under normal conditions.

B) Reduced monitoring. A supplier required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the supplier demonstrates that the average source water bromide concentration is less than 0.05 mg/~~L~~ℓ based upon representative monthly bromide measurements for one year. The supplier may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/~~L~~ℓ based upon representative monthly measurements. If the running annual average source water bromide concentration is equal to or greater than 0.05 mg/~~L~~ℓ, the supplier must resume routine monitoring required by subsection (b)(3)(A) of this Section.

c) Monitoring requirements for disinfectant residuals.

1) Chlorine and chloramines.

A) Routine monitoring. A CWS or NTNCWS supplier that uses chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in Section 611.521. A Subpart B system supplier may use the results of residual disinfectant concentration sampling conducted under Section 611.532 for unfiltered systems or Section 611.533 for systems that filter, in lieu of taking separate samples.

B) Reduced monitoring. Monitoring may not be reduced.

2) Chlorine dioxide.

A) Routine monitoring. A CWS, an NTNCWS, or a transient non-CWS supplier that uses chlorine dioxide for disinfection or oxidation must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the supplier must take samples in the distribution system the following day at the locations required by subsection (c)(2)(B) of this Section, in addition to the sample required at the entrance to the distribution system.

B) Additional monitoring. On each day following a routine sample monitoring result that exceeds the MRDL, the supplier must take three chlorine dioxide distribution system samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the supplier must take three samples as close to the first customer as possible, at intervals of at least six hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the supplier must take one sample at each of the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

C) Reduced monitoring. Monitoring may not be reduced.

d) Monitoring requirements for disinfection byproduct (DBP) precursors.

1) Routine monitoring. A Subpart B system supplier that uses conventional filtration treatment (as defined in Section 611.101) must monitor each treatment plant for TOC not past the point of combined filter effluent turbidity monitoring and representative of the treated water. A supplier required to monitor under this subsection (d)(1) must also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as paired samples. At the same time as the source water sample is taken, a system must monitor for alkalinity in the source water prior to any treatment. A supplier must take one paired sample and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

2) Reduced monitoring. A Subpart B system supplier with an average treated water TOC of less than 2.0 mg/~~L~~ℓ for two consecutive years, or less than 1.0 mg/~~L~~ℓ for one year, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The supplier must revert to routine monitoring in the month following the quarter when the annual average treated water TOC ~~≥~~greater than or equal to 2.0 mg/~~L~~ℓ.

e) Bromide. A supplier required to analyze for bromate may reduce bromate monitoring from monthly to once per quarter, if the supplier demonstrates that the average source water bromide concentration is less than 0.05 mg/~~L~~ℓ based upon representative monthly measurements for one year. The supplier must continue bromide monitoring to remain on reduced bromate monitoring.

f) Monitoring plans. Each supplier required to monitor under this Subpart I must develop and implement a monitoring plan. The supplier must maintain the plan and make it available for inspection by the Agency and the general public no later than 30 days following the applicable compliance dates in Section 611.380(b). A Subpart B system supplier serving more than 3,300 persons must submit a copy of the monitoring plan to the Agency no later than the date of the first report required under Section 611.384. After review, the Agency may require changes in any plan elements. The plan must include at least the following elements:

1) Specific locations and schedules for collecting samples for any parameters included in this Subpart I;

2) How the supplier will calculate compliance with MCLs, MRDLs, and treatment techniques; and

3) If approved for monitoring as a consecutive system, or if providing water to a consecutive system, under the provisions of Section 611.500, the sampling plan must reflect the entire distribution system.

BOARD NOTE: Derived from 40 CFR 141.132 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.383 Compliance Requirements

a) General requirements.

1) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the supplier fails to monitor for TTHM, HAA5, or bromate, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average. Where compliance is based on a running annual average of monthly or quarterly samples or averages and the supplier's failure to monitor makes it impossible to determine compliance with the MRDL for chlorine or chloramines, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

2) All samples taken and analyzed under the provisions of this Subpart I must be included in determining compliance, even if that number is greater than the minimum required.

3) If, during the first year of monitoring under Section 611.382, any individual quarter's average will cause the running annual average of that supplier to exceed the MCL, the supplier is out of compliance at the end of that quarter.

b) Disinfection byproducts (DBPs).

1) TTHMs and HAA5.

A) For a supplier monitoring quarterly, compliance with MCLs in Section 611.312 must be based on a running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected by the supplier as prescribed by Section 611.382(b)(1).

B) For a supplier monitoring less frequently than quarterly, the supplier demonstrates MCL compliance if the average of samples taken that year under the provisions of Section 611.382(b)(1) does not exceed the MCLs in Section 611.312. If the average of these samples exceeds the MCL, the supplier must increase monitoring to once per quarter per treatment plant, and such a system is not in violation of the MCL until it has completed one year of quarterly monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the supplier is in violation at the end of that quarter. A supplier required to increase to quarterly monitoring must calculate compliance by including the sample that triggered the increased monitoring plus the following three quarters of monitoring.

C) If the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL, the supplier is in violation of the MCL and must notify the public pursuant to Subpart V of this Part in addition to reporting to the Agency pursuant to Section 611.384.

D) If a PWS fails to complete four consecutive quarter's monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

2) Bromate. Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the supplier takes more than one sample, the average of all samples taken during the month) collected by the supplier, as prescribed by Section 611.382(b)(3). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the supplier is in violation of the MCL and must notify the public pursuant to Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384. If a PWS supplier fails to complete 12 consecutive months' monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

3) Chlorite. Compliance must be based on an arithmetic average of each three sample set taken in the distribution system as prescribed by Section 611.382(b)(2)(A)(ii) and Section 611.382(b)(2)(B). If the arithmetic average of any three sample set exceeds the MCL, the supplier is in violation of the MCL and must notify the public pursuant to Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

c) Disinfectant residuals.

1) Chlorine and chloramines.

A) Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the supplier under Section 611.382(c)(1). If the average of quarterly averages covering any consecutive four-quarter period exceeds the MRDL, the supplier is in violation of the MRDL and must notify the public pursuant to Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

B) In cases where a supplier switches between the use of chlorine and chloramines for residual disinfection during the year, compliance must be determined by including together all monitoring results of both chlorine and chloramines in calculating compliance. Reports submitted pursuant to Section 611.384 must clearly indicate ~~which~~ that residual disinfectant was analyzed for each sample.

2) Chlorine dioxide.

A) Acute violations. Compliance must be based on consecutive daily samples collected by the supplier under Section 611.382(c)(2). If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one (or more) of the three samples taken in the distribution system exceeds the MRDL, the supplier is in violation of the MRDL and must take immediate corrective action to lower the level of chlorine dioxide below the MRDL and must notify the public pursuant to the procedures for acute health risks in Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384. Failure to take samples in the distribution system the day following an exceedence of the chlorine dioxide MRDL at the entrance to the distribution system will also be considered an MRDL violation and the supplier must notify the public of the violation in accordance with the provisions for acute violations under Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

B) Nonacute violations. Compliance must be based on consecutive daily samples collected by the supplier under Section 611.382(c)(2). If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the supplier is in violation of the MRDL and must take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and must notify the public pursuant to the procedures for nonacute health risks in Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384. Failure to monitor at the entrance to the distribution system the day following an exceedence of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the supplier must notify the public of the violation in accordance with the provisions for nonacute violations under Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

d) Disinfection byproduct (DBP) precursors. Compliance must be determined as specified by Section 611.385(c). A supplier may begin monitoring to determine whether Step 1 TOC removals can be met 12 months prior to the compliance date for the supplier. This monitoring is not required and failure to monitor during this period is not a violation. However, any supplier that does not monitor during this period, and then determines in the first 12 months after the compliance date that it is not able to meet the Step 1 requirements in Section 611.141(b)(2) and must therefore apply for alternate minimum TOC removal (Step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (Step 2) requirements as allowed pursuant to Section 611.385(b)(3) and is in violation of an NPDWR. A supplier may apply for alternate minimum TOC removal (Step 2) requirements any time after the compliance date. For a supplier required to meet Step 1 TOC removals, if the value calculated under Section 611.385(c)(1)(D) is less than 1.00, the supplier is in violation of the treatment technique requirements and must notify the public pursuant to Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

BOARD NOTE: Derived from 40 CFR 141.133 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.384 Reporting and Recordkeeping Requirements

a) A supplier required to sample quarterly or more frequently must report to the Agency within ten days after the end of each quarter in which samples were collected, notwithstanding the provisions of Section 611.840. A supplier required to sample less frequently than quarterly must report to the Agency within ten days after the end of each monitoring period in which samples were collected.

b) Disinfection byproducts (DBPs). A supplier must report the ~~information~~ following specified information ~~in the following table~~:

~~If a supplier is a . . .~~	~~The supplier must report . . .[1]~~
~~(2) Supplier monitoring for TTHMs and HAA5 under the requirements of Section 611.382(b) less frequently than quarterly (but at least annually).~~	~~(A) The number of samples taken during the last year.~~ ~~(B) The location, date, and result of each sample taken during the last monitoring period.~~ ~~(C) The arithmetic average of all samples taken over the last year.~~ ~~(D) Whether, based on Section 611.383(b)(1), the MCL was violated.~~

~~(3) Supplier monitoring for TTHMs and HAA5 under the requirements of Section 611.382(b) less frequently than annually.~~	~~(A) The location, date, and result of the last sample taken.~~ ~~(B) Whether, based on Section 611.383(b)(1), the MCL was violated.~~
~~(4) Supplier monitoring for chlorite under the requirements of Section 611.382(b).~~	~~(A) The number of entry point samples taken each month for the last three months.~~ ~~(B) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter.~~ ~~(C) For each month in the reporting period, the arithmetic average of each three-sample set for all sample sets taken in the distribution system.~~ ~~(D) Whether, based on Section 611.383(b)(3), the MCL was violated, in which month it was violated, and how many times it was violated in each month.~~
~~(5) Supplier monitoring for bromate under the requirements of Section 611.382(b).~~	~~(A) The number of samples taken during the last quarter.~~ ~~(B) The location, date, and result of each sample taken during the last quarter.~~ ~~(C) The arithmetic average of the monthly arithmetic averages of all samples taken in the last year.~~ ~~(D) Whether, based on Section 611.383(b)(2), the MCL was violated.~~

1) A supplier that monitors for TTHMs and HAA5 under the requirements of Section 611.382(b) on a quarterly or more frequently basis must report the following:

   A) The number of samples taken during the last quarter;

   B) The location, date, and result of each sample taken during the last quarter;

   C) The arithmetic average of all samples taken over the last quarter;

D) The annual arithmetic average of the quarterly arithmetic averages of this Section for the last four quarters; and

E) Whether, based on Section 611.383(b)(1), the MCL was violated.

2) A supplier that monitors for TTHMs and HAA5 under the requirements of Section 611.382(b) less frequently than quarterly (but at least annually) must report the following:

A) The number of samples taken during the last year;

B) The location, date, and result of each sample taken during the last monitoring period;

C) The arithmetic average of all samples taken over the last year; and

D) Whether, based on Section 611.383(b)(1), the MCL was violated.

3) A supplier that monitors for TTHMs and HAA5 under the requirements of Section 611.382(b) less frequently than annually must report the following:

A) The location, date, and result of the last sample taken; and

B) Whether, based on Section 611.383(b)(1), the MCL was violated.

4) A supplier that monitors for chlorite under the requirements of Section 611.382(b) must report the following:

A) The number of entry point samples taken each month for the last three months;

B) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter;

C) For each month in the reporting period, the arithmetic average of each three-sample set for all sample sets taken in the distribution system; and

D) Whether, based on Section 611.383(b)(3), the MCL was violated, in which month it was violated, and how many times it was violated in each month.

5) A supplier that monitors for bromate under the requirements of Section 611.382(b) must report the following:

A) The number of samples taken during the last quarter;

B) The location, date, and result of each sample taken during the last quarter;

C) The arithmetic average of the monthly arithmetic averages of all samples taken in the last year; and

D) Whether, based on Section 611.383(b)(2), the MCL was violated.

~~1~~ BOARD NOTE: The Agency may choose to perform calculations and determine whether the MCL was exceeded, in lieu of having the supplier report ~~that~~ the required information.

c) Disinfectants. A supplier must report the following specified information ~~specified in the following table~~:

~~If a supplier is a . . .~~	~~The supplier must report...1~~
~~(1) Supplier monitoring for chlorine or chloramines under the requirements of Section 611.382(c).~~	~~(A) The number of samples taken during each month of the last quarter.~~ ~~(B) The monthly arithmetic average of all samples taken in each month for the last 12 months.~~ ~~(C) The arithmetic average of all monthly averages for the last 12 months.~~ ~~(D) Whether, based on Secton 611.383(c)(1), the MRDL was violated.~~
~~(2) Supplier monitoring for chlorine dioxide under the requirements of Section 611.382(c).~~	~~(A) The dates, results, and locations of samples taken during the last quarter.~~ ~~(B) Whether, based on Secton 611.383(c)(2), the MRDL was violated.~~ ~~(C) Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute or nonacute.~~

1) A supplier that monitors for chlorine or chloramines under the requirements of Section 611.382(c) must report the following:

A) The number of samples taken during each month of the last quarter.

B) The monthly arithmetic average of all samples taken in each month for the last 12 months.

C) The arithmetic average of all monthly averages for the last 12 months.

D) Whether, based on Secton 611.383(c)(1), the MRDL was violated.

2) A supplier that monitors for chlorine dioxide under the requirements of Section 611.382(c) must report the following:

A) The dates, results, and locations of samples taken during the last quarter;

B) Whether, based on Secton 611.383(c)(2), the MRDL was violated; and

C) Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute or nonacute.

~~1~~ BOARD NOTE: The Agency may choose to perform calculations and determine whether the MRDL was exceeded, in lieu of having the supplier report ~~that~~ the required information.

d) Disinfection byproduct (DBP) precursors and enhanced coagulation or enhanced softening. A supplier must report the following specified information ~~specified in the following table~~:

~~If a supplier is a . . .~~	~~The supplier must report...1~~
~~(1) Supplier monitoring monthly or quarterly for TOC under the requirements of Section 611.382(d) and required to meet the enhanced coagulation or enhanced softening requirements in Section 611.385(b)(2) or (b)(3).~~	~~(A) The number of paired (source water and treated water) samples taken during the last quarter.~~ ~~(B) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter.~~ ~~(C) For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal.~~ ~~(D) Calculations for determining compliance with the TOC percent removal requirements, as provided in Section 611.385(c)(1).~~

	~~(E) Whether the supplier is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in Section 611.385(b) for the last four quarters.~~
~~(2) Supplier monitoring monthly or quarterly for TOC under the requirements of Section 611.382(d) and meeting one or more of the alternative compliance standards in Section 611.385(a)(2) or (a)(3).~~	~~(A) The alternative compliance criterion that the supplier is using.~~ ~~(B) The number of paired samples taken during the last quarter.~~ ~~(C) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter.~~ ~~(D) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for a supplier meeting a criterion in Section 611.385(a)(2)(A) or (a)(2)(C) or of treated water TOC for a supplier meeting the criterion in Section 611.385(a)(2)(B).~~ ~~(E) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for a supplier meeting the criterion in Section 611.385(a)(2)(E) or of treated water SUVA for a supplier meeting the criterion in Section 611.385(a)(2)(F).~~ ~~(F) The running annual average of source water alkalinity for a supplier meeting the criterion in Section 611.385(a)(2)(C) and of treated water alkalinity for a supplier meeting the criterion in Section 611.385(a)(3)(A).~~ ~~(G) The running annual average for both TTHM and HAA5 for a supplier meeting the criterion in Section 611.385(a)(2)(C) or (D).~~ ~~(H) The running annual average of the amount of magnesium hardness removal (as CaCO3 in mg/L) for a supplier meeting the criterion in Section 611.385(a)(3)(B).~~ ~~(I) Whether the supplier is in~~

~~compliance with the particular alternative compliance criterion in Section 611.385(a)(2) or (3).~~

1) A supplier that monitors monthly or quarterly for TOC under the requirements of Section 611.382(d) and required to meet the enhanced coagulation or enhanced softening requirements in Section 611.385(b)(2) or (b)(3) must report the following:

A) The number of paired (source water and treated water) samples taken during the last quarter;

B) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter;

C) For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal;

D) Calculations for determining compliance with the TOC percent removal requirements, as provided in Section 611.385(c)(1); and

E) Whether the supplier is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in Section 611.385(b) for the last four quarters.

2) A supplier that monitors monthly or quarterly for TOC under the requirements of Section 611.382(d) and meeting one or more of the alternative compliance standards in Section 611.385(a)(2) or (a)(3) must report the following:

A) The alternative compliance criterion that the supplier is using;

B) The number of paired samples taken during the last quarter;

C) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter;

D) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for a supplier meeting a criterion in Section 611.385(a)(2)(A) or (a)(2)(C) or of treated water TOC for a supplier meeting the criterion in Section 611.385(a)(2)(B);

E) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for a supplier meeting the criterion in Section 611.385(a)(2)(E) or of treated water SUVA for a supplier meeting the criterion in Section 611.385(a)(2)(F);

F) The running annual average of source water alkalinity for a supplier meeting the criterion in Section 611.385(a)(2)(C) and of treated water alkalinity for a supplier meeting the criterion in Section 611.385(a)(3)(A);

G) The running annual average for both TTHM and HAA5 for a supplier meeting the criterion in Section 611.385(a)(2)(C) or (D);

H) The running annual average of the amount of magnesium hardness removal (as $CaCO_3$ in mg/ℓ) for a supplier meeting the criterion in Section 611.385(a)(3)(B); and

I) Whether the supplier is in compliance with the particular alternative compliance criterion in Section 611.385(a)(2) or (3).

~~1~~ BOARD NOTE: The Agency may choose to perform calculations and determine whether the treatment technique was met, in lieu of having the supplier report ~~that~~ the required information.

BOARD NOTE: Derived from 40 CFR 141.134 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.385 Treatment Technique for Control of Disinfection Byproduct (DBP) Precursors

a) Applicability.

1) A Subpart B system supplier using conventional filtration treatment (as defined in Section 611.101) must operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in subsection (b) of this Section unless the supplier meets at least one of the alternative compliance standards listed in subsection (a)(2) or (a)(3) of this Section.

2) Alternative compliance standards for enhanced coagulation and enhanced softening systems. A Subpart B system supplier using conventional filtration treatment may use the alternative compliance standards in subsections (a)(2)(A) through (a)(2)(F) of this Section to comply with this Section in lieu of complying with subsection (b). A supplier must comply with monitoring requirements in Section 611.382(d) of this Part.

A) The supplier's source water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/~~L~~ℓ, calculated quarterly as a running annual average.

B) The supplier's treated water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/~~L~~ℓ, calculated quarterly as a running annual average.

C) The supplier's source water TOC level, measured according to Section 611.381(d)(3), is less than 4.0 mg/~~L~~ℓ, calculated quarterly as a running annual average; the source water alkalinity, measured according to Section 611.381(d)(1), is greater than 60 mg/~~L~~ℓ (as $CaCO_3$), calculated quarterly as a running annual average; and either the TTHM and HAA5 running annual averages are no greater than 0.040 mg/~~L~~ℓ and 0.030 mg/~~L~~ℓ, respectively; or prior to the effective date for compliance in Section 611.380(b), the system has made a clear and irrevocable financial commitment, not later than the effective date for compliance in Section 611.380(b), to use technologies that will limit the levels of TTHMs and HAA5 to no more than 0.040 mg/~~L~~ℓ and 0.030 mg/~~L~~ℓ, respectively. A supplier must submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for installation and operation of appropriate technologies, to the Agency for approval not later than the effective date for compliance in Section 611.380(b). These technologies must be installed and operating not later than June 30, 2005. Failure to install and operate these technologies by the date in the approved schedule will constitute a violation of an NPDWR.

D) The TTHM and HAA5 running annual averages are no greater than 0.040 mg/~~L~~ℓ and 0.030 mg/~~L~~ℓ, respectively, and the supplier uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

E) The supplier's source water SUVA, prior to any treatment and measured monthly according to Section 611.381(d)(4), is less than or equal to 2.0 ~~L~~ℓ/mg-m, calculated quarterly as a running annual average.

F) The supplier's finished water SUVA, measured monthly according to Section 611.381(d)(4), is less than or equal to 2.0 ~~L~~ℓ/mg-m, calculated quarterly as a running annual average.

3) Additional alternative compliance standards for softening systems. A supplier practicing enhanced softening that cannot achieve the TOC

removals required by subsection (b)(2) of this Section may use the alternative compliance standards in subsections (a)(3)(A) and (a)(3)(B) of this Section in lieu of complying with subsection (b) of this Section. A supplier must comply with monitoring requirements in Section 611.382(d). The alternative compliance standards are as follows:

A) The supplier may undertake softening that results in lowering the treated water alkalinity to less than 60 mg/~~L~~ℓ (as $CaCO_3$), measured monthly according to Section 611.381(d)(1) and calculated quarterly as a running annual average~~.~~; and

B) The supplier may undertake softening that results in removing at least 10 mg/~~L~~ℓ of magnesium hardness (as $CaCO_3$), measured monthly and calculated quarterly as an annual running average.

b) Enhanced coagulation and enhanced softening performance requirements.

1) A supplier must achieve the percent reduction of TOC specified in subsection (b)(2) of this Section between the source water and the combined filter effluent, unless the Agency approves a supplier's request for alternate minimum TOC removal (Step 2) requirements under subsection (b)(3) of this Section.

2) Required Step 1 TOC reductions, indicated in the following table, are based upon specified source water parameters measured in accordance with Section 611.381(d). A supplier practicing softening must meet the Step 1 TOC reductions in the far-right column (source water alkalinity ~~>~~ greater than 120 mg/~~L~~ℓ) for the following specified source water TOC:

Step 1 Required Removal of TOC by Enhanced Coagulation and Enhanced Softening for a Subpart B System Supplier Using Conventional Treatment[1,2]

Source-water TOC, mg/~~L~~ℓ	Source-water alkalinity, mg/~~L~~ℓ as $CaCO_3$		
	0-60	>60-120	>120[3]
>2.0-4.0	35.0%	25.0%	15.0%
>4.0-8.0	45.0%	35.0%	25.0%
>8.0	50.0%	40.0%	30.0%

[1] A supplier meeting at least one of the conditions in subsections (a)(2)(A) through (a)(2)(F) of this Section are not required to operate with enhanced coagulation.

[2] ~~Softening systems meeting~~ A softening system that meets one of the

alternative compliance standards in subsection (a)(3) of this Section ~~are~~ is not required to operate with enhanced softening.

[3] A supplier ~~practicing~~ that practices softening must meet the TOC removal requirements in this column.

3) A Subpart B conventional treatment system supplier that cannot achieve the Step 1 TOC removals required by subsection (b)(2) of this Section due to water quality parameters or operational constraints must apply to the Agency, within three months after failure to achieve the TOC removals required by subsection (b)(2) of this Section, for approval of alternative minimum TOC (Step 2) removal requirements submitted by the supplier. If the PWS cannot achieve the Step 1 TOC removal requirement due to water quality parameters or operational constraints, the Agency must approve the use of the Step 2 TOC removal requirement. If the Agency approves the alternative minimum TOC removal (Step 2) requirements, the Agency may make those requirements retroactive for the purposes of determining compliance. Until the Agency approves the alternative minimum TOC removal (Step 2) requirements, the supplier must meet the Step 1 TOC removals contained in subsection (b)(2) of this Section.

4) Alternative minimum TOC removal (Step 2) requirements. An application made to the Agency by an enhanced coagulation system supplier for approval of alternative minimum TOC removal (Step 2) requirements under subsection (b)(3) of this Section must include, at a minimum, results of bench- or pilot-scale testing conducted under subsection (b)(4)(B) of this Section. The submitted bench- or pilot-scale testing must be used to determine the alternative enhanced coagulation level.

A) For the purposes of this Subpart I, "alternative enhanced coagulation level" is defined as coagulation at a coagulant dose and pH, as determined by the method described in subsections (b)(4)(A) through (E) of this Section, such that an incremental addition of 10 mg/~~L~~ℓ of alum (or equivalent amount of ferric salt) results in a TOC removal of ~~≤~~ less than or equal to 0.3 mg/~~L~~ℓ. The percent removal of TOC at this point on the "TOC removal versus coagulant dose" curve is then defined as the minimum TOC removal required for the supplier. Once approved by the Agency, this minimum requirement supersedes the minimum TOC removal required by the table in subsection (b)(2) of this Section. This requirement will be effective until such time as the Agency approves a new value based on the results of a new bench- and pilot-scale test. Failure to achieve alternative minimum TOC removal levels is a violation of National Primary Drinking Water Regulations.

B) Bench- or pilot-scale testing of enhanced coagulation must be conducted by using representative water samples and adding 10 mg/~~L~~ℓ increments of alum (or equivalent amounts of ferric salt) until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in the following table:

Enhanced Coagulation Step 2 Target pH

Alkalinity (mg/~~L~~ℓ as $CaCO_3$)	Target pH
0-60	5.5
>60-120	6.3
>120-240	7.0
>240	7.5

C) For waters with alkalinities of less than 60 mg/~~L~~ℓ for which addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before significant TOC removal occurs, the supplier must add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/~~L~~ℓ per 10 mg/~~L~~ℓ alum added (or equivalent addition of iron coagulant) is reached.

D) The supplier may operate at any coagulant dose or pH necessary (consistent with other NPDWRs) to achieve the minimum TOC percent removal approved under subsection (b)(3) of this Section.

E) If the TOC removal is consistently less than 0.3 mg/~~L~~ℓ of TOC per 10 mg/~~L~~ℓ of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the water is deemed to contain TOC not amenable to enhanced coagulation. The supplier may then apply to the Agency for a waiver of enhanced coagulation requirements. If the TOC removal is consistently less than 0.3 mg/~~L~~ℓ of TOC per 10 mg/~~L~~ℓ of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the Agency must grant the waiver of enhanced coagulation requirements.

c) Compliance calculations.

1) A Subpart B system supplier other than those identified in subsection (a)(2) or (a)(3) of this Section must comply with requirements contained in subsection (b)(2) or (b)(3) of this Section. A supplier must calculate compliance quarterly, beginning after the supplier has collected 12 months of data, by determining an annual average using the following method:

A) Determine actual monthly TOC percent removal, equal to the

following:

$$\left(1-\left(\frac{\text{treated water TOC}}{\text{source water TOC}}\right)\right)\times 100$$

B) Determine the required monthly TOC percent removal.

C) Divide the value in subsection (c)(1)(A) of this Section by the value in subsection (c)(1)(B) of this Section.

D) Add together the results of subsection (c)(1)(C) of this Section for the last 12 months and divide by 12.

E) If the value calculated in subsection (c)(1)(D) of this Section is less than 1.00, the supplier is not in compliance with the TOC percent removal requirements.

2) A supplier may use the provisions in subsections (c)(2)(A) through (c)(2)(E) of this Section in lieu of the calculations in subsection (c)(1)(A) through (c)(1)(E) of this Section to determine compliance with TOC percent removal requirements.

A) In any month that the supplier's treated or source water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/~~L~~ℓ, the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

B) In any month that a system practicing softening removes at least 10 mg/~~L~~ℓ of magnesium hardness (as $CaCO_3$), the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

C) In any month that the system's source water SUVA, prior to any treatment and measured according to Section 611.381(d)(4), is ~~≤~~less than or equal to 2.0 ~~L~~ℓ/mg-m, the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

D) In any month that the system's finished water SUVA, measured according to Section 611.381(d)(4), is ~~≤~~less than or equal to 2.0 ~~L~~ℓ/mg-m, the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

E) In any month that a system practicing enhanced softening lowers alkalinity below 60 mg/~~L~~ℓ (as $CaCO_3$), the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

3) A Subpart B system supplier using conventional treatment may also comply with the requirements of this Section by meeting the standards in subsection (a)(2) or (a)(3) of this Section.

d) Treatment technique requirements for disinfection byproduct (DBP) precursors. Treatment techniques to control the level of disinfection byproduct (DBP) precursors in drinking water treatment and distribution systems, for a Subpart B system supplier using conventional treatment, are enhanced coagulation or enhanced softening.

BOARD NOTE: Derived from 40 CFR 141.135 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.480 Alternative Analytical Techniques

The Agency may approve, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, an alternate analytical technique. The Agency ~~shall~~ must not approve an alternate analytical technique without the concurrence of ~~U.S. EPA~~ USEPA. The Agency ~~shall~~ must approve an alternate technique if it is substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with any MCL. The use of the alternate analytical technique must not decrease the frequency of monitoring required by this Part.

BOARD NOTE: Derived from 40 CFR 141.27 ~~(1994)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.490 Certified Laboratories

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

1) By a laboratory certified pursuant to Section 4(o) of the Act [415 ILCS 5/4(o)];~~ or,~~

2) By a laboratory certified by USEPA; or~~,~~

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

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

BOARD NOTE: ~~Derived~~ Subsections (a) and (b) are derived from 40 CFR 141.28 ~~(1999)~~ (2002).

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

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.491 Laboratory Testing Equipment

a) Each CWS supplier ~~shall~~ must have adequate laboratory equipment and capability to perform operational tests (except bacteriological) appropriate to the parameters to be tested and the type of treatment employed. Such equipment must be in good operating condition, and the operator on duty must be familiar with the procedure for performing the tests.

b) Nothing in this Subpart K ~~shall~~ may be construed to prevent a CWS supplier from running control laboratory tests in an uncertified laboratory. These results are not to be included in the required monitoring results.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.500 Consecutive PWSs

When a PWS supplies water to one or more other PWSs, the Agency ~~shall~~ must modify the monitoring requirements imposed by this Part to the extent that the interconnection of the PWSs justifies treating them as a single PWS for monitoring purposes. Any modified monitoring must be conducted pursuant to a schedule specified by ~~special exception permit~~ a SEP issued pursuant to Section 611.110. The Agency ~~shall~~ must not approve such modified monitoring without the concurrence of ~~U.S. EPA~~ USEPA.

BOARD NOTE: Derived from 40 CFR 141.29 ~~(1994)~~ (2002).

(Source: Amended at 27 Ill. Reg. _________, effective ________________________)

Section 611.510 Special Monitoring for Unregulated Contaminants (Repealed)

~~a) Monitoring for Phase I unregulated contaminants.~~

~~1) All CWS and NTNCWS suppliers must begin monitoring for the contaminants listed in subsection (a)(5) no later than 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 must sample at points in the distribution system representative of each water source or at entry points to the distribution system after any application of treatment. The minimum number of samples is one year of quarterly samples per water source.~~

~~3) GWS suppliers must 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~~
~~Dibromomethane~~
~~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) must be conducted using the following USEPA Organic Methods: Methods 502.2 or 524.2 or their equivalent as approved by the Agency, except that analyses for bromodichloromethane, bromoform, chlorodibromomethane, and chloroform may also be performed using USEPA Organic Methods: Method 551, and analyses for 1,2,3-trichloropropane may also be performed using USEPA Organic Methods: Method 504.1, all of which are incorporated by reference in Section 611.102.~~

~~BOARD NOTE: Subsection (a) derived from 40 CFR 141.40(a) through (m) (2000). The Board has adopted no counterpart to 40 CFR 141.40(h), which the Board has codified at subsection (c) of this Section; 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) of this Section; 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) (2000).~~

~~b) Monitoring for Phase V unregulated contaminants. Monitoring of the unregulated organic contaminants listed in subsection (b)(11) of this Section and the unregulated inorganic contaminants listed in subsection (b)(12) of this Section must be conducted as follows:~~

~~1) Each CWS and NTNCWS supplier must take four consecutive quarterly~~

~~samples at each sampling point for each contaminant listed in subsection (b)(11) of this Section and report the results to the Agency. Monitoring must be completed by December 31, 1995.~~

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

~~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 (b)(1) and (b)(2) of this Section.~~

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

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

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

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

~~6) A SWS or mixed system supplier must 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").~~

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

~~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.~~

~~9) Suppliers must 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 (b)(9) of this Section corresponds with~~

~~duplicate segments of 40 CFR 141.40(n)(5) and (n)(6) (2000), which correspond with subsections (b)(5) and (b)(6) of this Section. 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) (2000).~~

~~10) Instead of performing the monitoring required by this 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 must not send such samples to the Agency, unless requested to do so by the Agency.~~

~~11) List of Phase V unregulated organic contaminants with methods required for analysis (all methods are from USEPA Organic Methods unless otherwise noted; all are incorporated by reference in Section 611.102):~~

~~Contaminant~~	~~USEPA Organic Methods~~
~~Aldicarb~~	~~531.1, Standard Methods, 18th ed.: Method 6610~~
~~Aldicarb sulfone~~	~~531.1, Standard Methods, 18th ed.: Method 6610~~
~~Aldicarb sulfoxide~~	~~531.1, Standard Methods, 18th ed.: Method 6610~~
~~Aldrin~~	~~505, 508, 508.1, 525.2~~
~~Butachlor~~	~~507, 525.2~~
~~Carbaryl~~	~~531.1, Standard Methods, 18th ed.: Method 6610~~
~~Dicamba~~	~~515.1, 515.2, 555~~
~~Dieldrin~~	~~505, 508, 508.1, 525.2~~
~~3-Hydroxycarbofuran~~	~~531.1, Standard Methods, 18th ed.: Method 6610~~
~~Methomyl~~	~~531.1, Standard Methods, 18th ed.: Method 6610~~
~~Metolachlor~~	~~507, 508.1, 525.2~~
~~Metribuzin~~	~~507, 508.1, 525.2~~
~~Propachlor~~	~~508, 508.1, 525.2~~

~~12) List of unregulated inorganic contaminants (all methods indicated are incorporated by reference in Section 611.102):~~

~~Contaminant~~	~~Methods~~
~~Sulfate~~	~~USEPA Environmental Inorganic Methods: Methods 300.0, 375.2;~~

~~ASTM Method D 4327-91; Standard Methods, 18th ed.: Methods 4110, 4500-SO42- F, 4500-SO42- C & 4500-SO42- D~~

~~BOARD NOTE: Subsection (b) derived from 40 CFR 141.40(n) (2000).~~

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

~~BOARD NOTE: Subsection (c) derived from 40 CFR 141.40 (h) (2000).~~

~~d) All CWS and NTNCWS suppliers must 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) of this Section.~~

~~BOARD NOTE: Subsection (d) derived from 40 CFR 141.40 (l) (2000).~~

(Source: Repealed at 27 Ill. Reg. ________, effective ______________________)

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.521 Routine Coliform Monitoring

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

b) The monitoring frequency for total coliforms for CWSs is based on the population served by the CWS, as set forth in ~~Section 611.~~Table A of this Part.

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

1) A non-CWS using only groundwater (except groundwater under the direct influence of surface water, as determined in Section 611.212) and serving 1,000 persons or fewer must monitor each calendar quarter that the system provides water to the public, except that the Agency must reduce this monitoring frequency if a sanitary survey shows that the system is free of sanitary defects. ~~Beginning June 29, 1994, the~~ The Agency cannot reduce the monitoring frequency for a non-CWS using only groundwater (except groundwater under the direct influence of surface water) and serving 1,000 persons or fewer to less than once per year.

2) A non-CWS using only groundwater (except groundwater under the direct

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

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

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

d) The supplier must collect samples at regular time intervals throughout the month, except that a supplier that uses only groundwater (except groundwater under the direct influence of surface water) and serves 4,900 persons or fewer, may collect all required samples on a single day if they are taken from different sites.

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

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

BOARD NOTE: Derived from 40 CFR 141.21(a) ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.522 Repeat Coliform Monitoring

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

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

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

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

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

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

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

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

   B) The Agency cannot waive the requirement to collect five routine samples the next month the supplier provides water to the public solely on the grounds that all repeat samples are total coliform-negative.

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

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

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

BOARD NOTE: Derived from 40 CFR 141.21(b) ~~(1994)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.523 Invalidation of Total Coliform Samples

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

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

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

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

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

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

BOARD NOTE: Derived from 40 CFR 141.21(c) ~~(1994)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.524 Sanitary Surveys

a) Requirement to conduct a sanitary survey.

1) Suppliers ~~which~~ that do not collect five or more routine samples per month ~~shall~~ must undergo ~~an initial~~ a sanitary survey ~~by June 29, 1994, for CWS suppliers and June 29, 1999, for non-CWS suppliers. Thereafter, suppliers shall must undergo another sanitary survey~~ at least once every five years, except that non-CWS suppliers using only disinfected groundwater, from a source ~~which~~ that is not under the direct influence of surface water, ~~shall~~ must undergo ~~subsequent~~ a sanitary ~~surveys~~ survey at least once every ten years ~~after the initial sanitary survey~~. The Agency or, for ~~non-CWSs~~ a non-CWS, Public Health ~~shall~~ must review the results of each sanitary survey to determine whether the existing monitoring frequency is adequate and what additional measures, if any, the supplier needs to undertake to improve drinking water quality.

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

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

BOARD NOTE: Derived from 40 CFR 141.21(d) ~~(1989), as amended at 54 Fed. Reg. 27562, June 29, 1989~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.525 Fecal Coliform and E. Coli Testing

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

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

BOARD NOTE: Derived from 40 CFR 141.21(e) ~~(1989), as amended at 54 Fed. Reg. 27562, June 29, 1989~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.526 Analytical Methodology

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

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

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

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

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

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

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

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

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

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

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

4) ONPG-MUG test: Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 9223. (The ONPG-MUG test is also known as the Autoanalysis Colilert System).

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

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

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

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

8) Readycult Coliforms 100 Presence/Absence Test.

9) Membrane Filter Technique using Chromocult Doliform Agar.

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

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

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

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

3) EC medium is described in Standard Methods, 18th ed., ~~and~~ 19th ed., and 20th ed.: Method 9221 E.

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

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

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

2) Nutrient agar supplemented with 100 µg/~~L~~ℓ MUG (final concentration)~~.~~ ~~Nutrient agar is~~ , as described in Standard Methods, ~~18th ed. or~~ 19th ed.

and 20th ed.: Method~~ 9221 B~~ 9222 G. This test is used to determine if a total coliform-positive sample, as determined by the MF technique~~ or any other method in which a membrane filter is used~~, contains E. coli. ~~Transfer~~ Alternatively, Standard Methods, 18th ed.: Method 9221 B may be used if the membrane filter containing a total ~~coliform~~ coliform-positive colony or colonies is transferred to nutrient agar, as described in Method 9221 B (paragraph 3), supplemented with 100 µg/~~L~~ℓ MUG~~ (final concentration)~~. ~~After incubating~~ If Method 9221 B is used, incubate the agar plate at 35° Celsius for 4 hours, then observe the colony or colonies under ultraviolet light (366-nm) in the dark for fluorescence. If fluorescence is visible, E. coli are present.

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

4) The Colisure Test (Autoanalysis Colilert System).

5) The membrane filter method with MI agar.

6) The E*Colite® Test.

7) The m-ColiBlue24® Test.

8) Readycult Coliforms 100 Presence/Absence Test.

9) Membrane Filter Technique using Chromocult Doliform Agar.

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

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

Section 611.102. This statement maintains structural parity with USEPA regulations.

BOARD NOTE: Derived from 40 CFR 141.21(f) ~~(1999)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.527 Response to Violation

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

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

BOARD NOTE: Derived from 40 CFR 141.21(g) ~~(1999), as amended at 65 Fed. Reg. 26022, May 4, 2000~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.531 Analytical Requirements

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

a) A supplier shall do as follows:

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

2) Conduct analyses of total coliforms, fecal coliforms, heterotrophic bacteria, and turbidity in accordance with one of the following methods, and by using analytical test procedures contained in USEPA Technical Notes, incorporated by reference in Section 611.102, as follows:

A) Total Coliforms~~:~~.

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

i) Total coliform fermentation technique: Standard Methods, 18th, ~~ed. or~~ 19th, or 20th ed.: Method 9221 A, B, and C.

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

ii) Total coliform membrane filter technique: Standard Methods, 18th, ~~ed. or~~ 19th, or 20th ed.: Method 9222 A, B, and C.

iii) ONPG-MUG test (also known as the Autoanalysis Colilert System): Standard Methods, 18th, ~~ed. or~~ 19th, or 20th ed.: Method 9223.

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

B) Fecal Coliforms~~:~~.

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

i) Fecal coliform procedure: Standard Methods, 18th, ~~ed. or~~ 19th, or 20th ed.: Method 9221 E.

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

ii) Fecal Coliform Membrane Filter Procedure: Standard Methods, 18th, ~~ed. or~~ 19th, or 20th ed.: Method 9222 D.

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

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

i) Pour plate method: Standard Methods, 18th, 19th, or 20th ed.: Method 9215 B.

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

ii) SimPlate method.

D) Turbidity~~:~~.

i) Nephelometric method: Standard Methods, 18th, ~~ed. or~~ 19th, or 20th ed.: Method 2130 B.

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

iii) GLI Method 2.

iv) Hach FilterTrak Method 10133.

E) Temperature: Standard Methods, 18th, ~~ed. or~~ 19th, or 20th ed.: Method 2550.

b) A supplier ~~shall~~ must measure residual disinfectant concentrations with one of the following analytical methods from Standard Methods, 18th, ~~ed. or~~ 19th, or 20th ed.~~, and by using analytical test procedures contained in USEPA Technical Notes, incorporated by reference in Section 611.102~~ (the method for ozone, Method

4500-O_3 B, appears only in the 18th and 19th editions):

1) Free chlorine~~:~~.

   A) Amperometric Titration: Method 4500-Cl D.

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

   C) DPD Colimetric: Method 4500-Cl G.

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

2) Total chlorine~~:~~.

   A) Amperometric Titration: Method 4500-Cl D.

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

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

   D) DPD Colimetric: Method 4500-Cl G.

   E) Iodometric Electrode: Method 4500-Cl I.

3) Chlorine dioxide~~:~~.

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

   B) DPD Method: Method 4500-ClO_2 D.

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

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

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

   B) Continuous monitoring for free and total chlorine: Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument, provided the chemistry, accuracy, and precision remain the same. Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five days or as otherwise provided by the Agency.

BOARD NOTE: Suppliers may use a five-tube test or a ~~ten-tube~~ 10-tube test.

BOARD NOTE: Derived from 40 CFR 141.74(a) ~~(1999)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.532 Unfiltered PWSs

A supplier that uses a surface water source and does not provide filtration treatment ~~shall begin monitoring December 31, 1990~~ must monitor, unless the Agency has determined, pursuant to Section 611.211, that filtration is required~~, in which case the Agency shall~~. If the Agency determines that filtration is required, it must specify alternative monitoring requirements, as appropriate, until filtration is in place. A supplier that uses a groundwater source under the direct influence of surface water and which does not provide filtration treatment ~~shall begin monitoring beginning December 31, 1990, or~~ must monitor within ~~6~~ six months after the Agency ~~determines~~ has determined, pursuant to Section 611.212, that the groundwater source is under the direct influence of surface water~~, whichever is later,~~ unless the Agency has determined that filtration is required, in which case the Agency ~~shall~~ must specify alternative monitoring requirements, as appropriate, until filtration is in place.

a) Fecal coliform or total coliform density measurements as required by Section 611.231(a) must be performed on representative source water samples immediately prior to the first or only point of disinfectant application. The supplier ~~shall~~ must sample for fecal or total coliforms at the minimum frequency specified in Table B of this Part each week the supplier serves water to the public. Also, one fecal or total coliform density measurement must be made every day the supplier serves water to the public and the turbidity of the source water exceeds 1 NTU (these samples count towards the weekly coliform sampling requirement) unless the Agency determines that the supplier, for logistical reasons outside the supplier's control cannot have the sample analyzed within 30 hours of collection.

b) Turbidity measurements as required by Section 611.231(b) must be performed on representative grab samples of source water immediately prior to the first or only point of disinfectant application every four hours (or more frequently) that the supplier serves water to the public. A supplier may substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a protocol approved by ~~special exception permit~~ a SEP issued pursuant to Section 611.110.

c) The total inactivation ratio for each day that the supplier is in operation must be determined based on the $CT_{99.9}$ values in Appendix B of this Part, as appropriate. The parameters necessary to determine the total inactivation ratio must be monitored as follows:

1) The temperature of the disinfected water must be measured at least once per day at each RDC sampling point.

2) If the supplier uses chlorine, the pH of the disinfected water must be measured at least once per day at each chlorine RDC sampling point.

3) The disinfectant contact ~~time(s)~~ times ("T") must be determined for each day during peak hourly flow.

4) The ~~RDC(s)~~ RDCs ("C") of the water before or at the first customer must be measured each day during peak hourly flow.

5) If a supplier uses a disinfectant other than chlorine, the supplier may monitor by other methods approved pursuant to Section 611.241(a)(1) and (a)(2).

d) The total inactivation ratio must be calculated as follows:

1) If the supplier uses only one point of disinfectant application, the supplier may determine the total inactivation ratio based on either of the following two methods:

A) One inactivation ratio ($Ai = CT_{calc}/CT_{99.9}$) is determined before or at the first customer during peak hourly flow and, if the Ai is greater than 1.0, the 99.9 percent Giardia lamblia inactivation requirement has been achieved; or

B) Successive Ai values, representing sequential inactivation ratios, are determined between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the following method must be used to calculate the total inactivation ratio:

i) Determine the following, for each sequence:

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

ii) Add the Ai values together, as follows:

$$B = \sum(Ai)$$

iii) If B is greater than 1.0, the 99.9 percent Giardia lamblia inactivation requirement has been achieved.

2) If the supplier uses more than one point of disinfectant application before or at the first customer, the supplier ~~shall~~ must determine the CT value of each disinfection sequence immediately prior to the next point of disinfectant application during peak hourly flow. The Ai value of each sequence and B must be calculated using the method in subsection (d)(1)(B) of this Section to determine if the supplier is in compliance with Section 611.241.

3) Although not required, the total percent inactivation (PI) for a supplier with one or more points of RDC monitoring may be calculated as follows:

~~PI = 100 - (100/10^{3B})~~

$$PI = 100 - \frac{100}{10^{3B}}$$

e) The RDC of the water entering the distribution system must be monitored continuously, and the lowest value must be recorded each day, except that if there is a failure in the continuous monitoring equipment, grab sampling every ~~4~~ four hours may be conducted in lieu of continuous monitoring, but for no more than ~~5~~ five working days following the failure of the equipment, and suppliers serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies prescribed in Table C of this Part. If at any time the RDC falls below 0.2 mg/~~L~~ℓ in a system using grab sampling in lieu of continuous monitoring, the supplier ~~shall~~ must take a grab sample every ~~4~~ four hours until the RDC is equal to or greater than 0.2 mg/~~L~~ℓ.

f) Points of measurement.

1) The RDC must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in ~~Section 611.521 et seq.~~ Subpart L of this Section, except that the Agency ~~shall~~ must allow a supplier ~~which~~ that uses both a surface water source or a groundwater source under direct influence of surface water, and a groundwater source to take disinfectant residual samples at points other than the total coliform sampling points if the Agency determines, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, that such points are more representative of treated (disinfected) water quality within the distribution system. HPC may be measured in lieu of RDC.

2) If the Agency determines, pursuant to Section 611.213, a supplier has no means for having a sample analyzed for HPC, the requirements of subsection (f)(1) of this Section do not apply to that supplier.

BOARD NOTE: Derived from 40 CFR 141.74(b) ~~(1993)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.533 Filtered PWSs

A supplier that uses a surface water source or a groundwater source under the influence of surface water and provides filtration treatment ~~shall~~ must monitor in accordance with this Section~~ beginning June 29, 1993, or when filtration is installed, whichever is later~~.

a) Turbidity measurements as required by Section 611.250 must be performed on representative samples of the PWS's filtered water every four hours (or more frequently) that the supplier serves water to the public. A supplier may substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a protocol approved by~~ special exception permit~~ a SEP issued pursuant to Section 611.110. For any suppliers using slow sand filtration or filtration treatment other than conventional treatment, direct filtration, or diatomaceous earth filtration, the Agency shall, by special exception~~ permitcondition~~ permit condition, reduce the sampling frequency to once per day if it determines that less frequent monitoring is sufficient to indicate effective filtration performance. For suppliers serving 500 or fewer persons, the Agency shall, by~~ special exception permit~~ a SEP issued pursuant to Section 611.110, reduce the turbidity sampling frequency to once per day, regardless of the type of filtration treatment used, if the Agency determines that less frequent monitoring is sufficient to indicate effective filtration performance.

b) RDC entering distribution system.

1) Suppliers serving more than 3300 persons. The RDC of the water entering the distribution system must be monitored continuously, and the lowest value must be recorded each day, except that, if there is a failure in the continuous monitoring equipment, grab sampling every ~~4~~ four hours may be conducted in lieu of continuous monitoring, but for no more than ~~5~~ five working days following the failure of the equipment.

2) Suppliers serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies each day prescribed in Table C. If at any time the RDC falls below 0.2 mg/~~L~~ℓ in a system using grab sampling in lieu of continuous monitoring, the supplier ~~shall~~ must take a grab sample every ~~4~~ four hours until RDC is equal to or greater than 0.2 mg/~~L~~ℓ.

c) Points of measurement.

1) The RDC must be measured at least at the same points in the distribution

system and at the same time as total coliforms are sampled, as specified in 611.521 et seq., except that the Agency ~~shall~~ must allow a supplier ~~which~~ that uses both a surface water source or a groundwater source under direct influence of surface water, and a groundwater source, to take RDC samples at points other than the total coliform sampling points if the Agency determines that such points are more representative of treated (disinfected) water quality within the distribution system. HPC may be measured in lieu of RDC.

2) Subsection (c)(1) does not apply if the Agency determines, pursuant to Section 611.213(c), that a system has no means for having a sample analyzed for HPC.

BOARD NOTE: Derived from 40 CFR 141.74(c) ~~(1989), as amended at 54 Fed. Reg. 27526, June 29, 1989~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.560 Turbidity

The requirements in this Section apply to unfiltered PWSs until ~~December 30, 1991, unless the Agency has determined prior to that date that filtration is required. The requirements in this Section apply to filtered PWSs until June 29, 1993. The requirements in this Section apply to unfiltered PWSs that the Agency has determined must install filtration, until June 29, 1993, or until~~ filtration is installed~~, whichever is later~~.

a) Suppliers must take samples at representative entry ~~point(s)~~ points to the distribution system at least once per day, for the purposes of making turbidity measurements to determine compliance with Section 611.320.

1) If Public Health determines that a reduced sampling frequency in a non-CWS will not pose a risk to public health, it may reduce the required sampling frequency. The option of reducing the turbidity frequency will be permitted only in those suppliers that practice disinfection and which maintain an active RDC in the distribution system, and in those cases where Public Health has indicated in writing that no unreasonable risk to health existed under the circumstances of this option.

2) The turbidity measurements must be made in accordance with one of the methods set forth in Section 611.531(a).

b) If the result of a turbidity analysis indicates that the maximum allowable limit has been exceeded, the sampling and measurement must be confirmed by resampling as soon as practicable and preferably within one hour. If the repeat sample confirms that the maximum allowable limit has been exceeded, the supplier of water must report to the Agency within 48 hours. The repeat sample must be the sample used for the purpose of calculating the monthly average. If the monthly average of the daily samples exceeds the maximum allowable limit, or if the average of two samples taken on consecutive days exceeds 5 NTU, the supplier of water must report to the Agency and notify the public as directed in Subpart V of this Part.

c) ~~Sampling for non-CWSs must begin by June 29, 1991.~~This subsection (c) corresponds with 40 CFR 141.22(c), which states a past effective date for CWSs.

d) This Section applies only to suppliers that use water obtained in whole or in part from surface sources.

BOARD NOTE: Derived from 40 CFR 141.22 ~~(1999), as amended at 65 Fed. Reg. 26022, May 4, 2000~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.591 Violation of a State MCL

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

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

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

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

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.592 Frequency of State Monitoring

This Section applies to old MCLs that are marked as "additional State requirements" at Section 611.300, and for which no specific monitoring, reporting, or public notice requirements are specified below.

a) Analyses for all CWS suppliers utilizing surface water sources must be repeated at yearly intervals.

b) Analyses for all CWS suppliers utilizing only groundwater sources must be repeated at three-year intervals.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.600 Applicability

The following types of suppliers ~~shall~~ must 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 N:

a) CWS suppliers.

b) NTNCWS suppliers.

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

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

Contaminant	MCL (mg/~~L~~ℓ, except asbestos)	Method	Detection Limit (mg/~~L~~ℓ)
Antimony	0.006	Atomic absorption-furnace technique	0.003
		Atomic absorption-furnace technique (stabilized temperature)	0.0008[5]
		Inductively-coupled plasma-mass spectrometry	0.0004
		Atomic absorption-gaseous hydride technique	0.001

Arsenic	0.01[6]	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.00005[7]
		Atomic absorption-gaseous hydride technique	0.001
		Inductively-coupled plasma-mass spectrometry	0.0014[8]
Asbestos	7 MFL[1]	Transmission electron microscopy	0.01 MFL
Barium	2	Atomic absorption-furnace technique	0.002
		Atomic absorption-direct aspiration technique	0.1
		Inductively-coupled plasma arc furnace	0.002
		Inductively-coupled plasma	0.001
Beryllium	0.004	Atomic absorption-furnace technique	0.0002
		Atomic absorption-furnace technique (stabilized temperature)	0.00002[5]
		Inductively-coupled plasma[2]	0.0003
		Inductively-coupled plasma-mass spectrometry	0.0003
Cadmium	0.005	Atomic absorption-furnace technique	0.0001
		Inductively-coupled plasma	0.001
Chromium	0.1	Atomic absorption-furnace technique	0.001
		Inductively-coupled plasma	0.007
		Inductively-coupled plasma	0.001
Cyanide	0.2	Distillation, spectrophotometric[3]	0.02
		Automated distillation, spectrophotometric[3]	0.005
		Distillation, selective	0.05

		electrode[3]	
		Distillation, amenable, spectrophotometric[4]	0.02
		UV, distillation, spectrophotometric	0.0005
		Distillation, spectrophotometric	0.0006
Mercury	0.002	Manual cold vapor technique	0.0002
		Automated cold vapor technique	0.0002
Nickel	No MCL	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.0006[5]
		Inductively-coupled plasma[2]	0.005
		Inductively-coupled plasma-mass spectrometry	0.0005
Nitrate (as N)	10	Manual cadmium reduction	0.01
		Automated hydrazine reduction	0.01
		Automated cadmium reduction	0.05
		Ion-selective electrode	1
		Ion chromatography	0.01
Nitrite (as N)	1	Spectrophotometric	0.01
		Automated cadmium reduction	0.05
		Manual cadmium reduction	0.01
		Ion chromatography	0.004
Selenium	0.05	Atomic absorption-furnace technique	0.002
		Atomic absorption-gaseous hydride technique	0.002
Thallium	0.002	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized	0.0007[5]

temperature)	
Inductively-coupled plasma-mass spectrometry	0.0003

Footnotes~~:~~.
1 "MFL" means millions of fibers per liter less than 10 μm.
2 Using a 2× preconcentration step as noted in Method 200.7. Lower MDLs may be achieved when using a 4× preconcentration.
3 Screening method for total cyanides.
4 Measures "free" cyanides.
5 Lower MDLs are reported using stabilized temperature graphite furnace atomic absorbtion.
6 The value for arsenic is effective January 23, 2006. Until then, the MCL is 0.05 mg/~~L~~ℓ.
7 The MDL reported for USEPA Method 200.9 (atomic absorption-platform furnace (stabilized temperature)) was determined using a 2× concentration step during sample digestion. The MDL determined for samples analyzed using direct analyses (i.e., no sample digestion) will be higher. Using multiple depositions, USEPA Method 200.9 is capable of obtaining an MDL of 0.0001 mg/~~L~~ℓ.
8 Using selective ion monitoring, USEPA Method 200.8 (ICP-MS) is capable of obtaining an MDL of 0.0001 mg/~~L~~ℓ.

BOARD NOTE: Subsections (a) through (c) of this Section are derived from 40 CFR 141.23 preamble~~ (2000)~~ (2002), and subsection (d) of this Section is derived from 40 CFR 141.23(a)(4)(i)~~ (2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002). See the Board Note at Section 611.301(b) relating to the MCL for nickel.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.601 Monitoring Frequency

Monitoring must be conducted as follows:

a) Required sampling.

1) Each supplier must take a minimum of one sample at each sampling point at the times required by Section 611.610 beginning 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) of this Section. The total number of sampling points must be representative of the water delivered to users throughout the PWS.

3) The supplier must 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 ~~an~~ a SEP pursuant to subsection (b)(5) of this Section.

b) Sampling points.

1) Sampling points for GWSs. Unless otherwise provided by SEP, a GWS supplier must take at least one sample from each of the following points: each entry point that is representative of each well after treatment.

2) Sampling points for an SWS or a mixed system supplier . Unless otherwise provided by SEP, an SWS or mixed system supplier must 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 supplier draws water from more than one source, and the sources are combined before distribution, the supplier must sample at an entry point during periods of normal operating conditions when water is representative of all sources being used.

4) Additional sampling points. The Agency must, 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 must, 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, arsenic (effective February 22, 2002), barium, beryllium,

cadmium, chromium, cyanide, fluoride, mercury, 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) and (c) ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.602 Asbestos Monitoring Frequency

The frequency of monitoring conducted to determine compliance with the MCL for asbestos in Section 611.301 is as follows:

a) Unless the Agency has determined under subsection (c) of this Section that the PWS is not vulnerable, each CWS and NTNCWS supplier must monitor for asbestos during the first compliance period of each compliance cycle, beginning January 1, 1993.

b) CWS suppliers may apply to the Agency, by way of an application for a SEP under Section 611.110, for a determination that the CWS is not vulnerable based on consideration of the criteria listed in subsection (c) of this Section.

c) The Agency must determine that the CWS is "not vulnerable" if the CWS is not vulnerable to contamination either from asbestos in its source water, from corrosion of asbestos-cement pipe, or from both, based on a consideration of the following factors:

1) Potential asbestos contamination of the water source; and

2) The use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.

d) A SEP based on a determination that a CWS is not vulnerable to asbestos contamination expires at the end of the compliance cycle for which it was issued.

e) A supplier of a PWS vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe must take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

f) A supplier of a PWS vulnerable to asbestos contamination due solely to source water must monitor in accordance with Section 611.601.

g) A supplier of a PWS vulnerable to asbestos contamination due both to its source water supply and corrosion of asbestos-cement pipe must take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

h) A supplier that exceeds the MCL, as determined in Section 611.609, must monitor quarterly beginning in the next quarter after the violation occurred.

i) Reduction of quarterly monitoring.

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

2) The request must, at a minimum, include the following information:

A) For a GWS: two quarterly samples.

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

3) In issuing a SEP, the Agency must 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 must include a condition requiring the supplier to resume quarterly monitoring pursuant to subsection (h) of this Section if it violates the MCL specified by Section 611.609.

j) ~~If the Agency determines that data collected after January 1, 1990 are generally consistent with the requirements of this Section, it may grant a SEP pursuant to Section 611.110 that allows the supplier to use those data to satisfy the requirements of this Section for the compliance period beginning January 1, 1993.~~This subsection (j) corresponds with 40 CFR 141.23(b)(10), which pertains to a compliance period long since expired. This statement maintains structural consistency with the federal regulations.

BOARD NOTE: Derived from 40 CFR 141.23(b) ~~(2000)~~ (2002).

(Source: Amended at 27 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, arsenic ~~(effective February 22, 2002)~~, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, and thallium is as follows:

a) Suppliers must take samples at each sampling point, beginning in the initial compliance period, as follows:

1) For a GWS supplier: at least one sample during each compliance period;

2) For an SWS or a mixed system supplier: at least one sample each year.

BOARD NOTE: Derived from 40 CFR 141.23(c)(1) ~~(2000)~~ (2002).

b) SEP Application.

1) The supplier may apply to the Agency for ~~an~~ a SEP that allows reduction from the monitoring frequencies specified in subsection (a) of this Section pursuant to subsections (d) through (f) of this Section and Section 611.110.

2) The supplier may apply to the Agency for ~~an~~ a SEP that relieves it of the requirement for monitoring cyanide pursuant to subsections (d) through (f) of this Section and Section 611.110 if it can demonstrate that its system is not vulnerable due to a lack of any industrial source of cyanide.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(2) and (c)(6) ~~(2000)~~ (2002).

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

BOARD NOTE: Drawn from 40 CFR 141.23(c)(6) ~~(2000)~~ (2002).

d) Standard for SEP reduction in monitoring. The Agency must grant ~~an~~ 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 an SWS or mixed system supplier: annual monitoring for at least three years.

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

4) A supplier that uses a new water source is not eligible for ~~an~~ a SEP until it completes three rounds of monitoring from the new source.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(4) ~~(2000)~~ (2002).

e) Standard for SEP monitoring conditions. As a condition of any SEP, the Agency must 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 must consider the following:

1) Reported concentrations from all previous monitoring;

2) The degree of variation in reported concentrations; and

3) Other factors that may affect contaminant concentrations, such as changes in groundwater pumping rates, changes in the CWS's 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) ~~(2000)~~ (2002).

f) SEP Conditions and Revision.

1) ~~An~~ 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) ~~(2000)~~ (2002).

2) In issuing ~~an~~ a SEP, the Agency must specify the level of the contaminant upon which the "reliably and consistently" determination was based. ~~An~~ 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) ~~(2000)~~ (2002).

g) A supplier that exceeds the MCL as determined in Section 611.609, must monitor quarterly for that contaminant, beginning in the next quarter after the violation occurred.

BOARD NOTE: Derived from 40 CFR 141.23(c)(7) ~~(2000)~~ (2002).

h) Reduction of quarterly monitoring.

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

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

A) For a GWS: two quarterly samples.

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

3) In issuing the SEP, the Agency must specify the level of the contaminant upon which the "reliably and consistently" determination was based. Any SEP that allows less frequent monitoring based on an Agency "reliably and consistently" determination must include a condition requiring the supplier to resume quarterly monitoring for any contaminant pursuant to subsection (g) of this Section if it violates the MCL specified by Section 611.609 for that contaminant.

BOARD NOTE: Derived from 40 CFR 141.23(c)(8) ~~(2000)~~ (2002).

i) A new system supplier that begins operation after January 22, 2004 or a supplier whose system uses a new source of water beginning after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by a permit issued the Agency. The supplier must also comply with the initial sampling frequencies specified by the Agency to ensure a system can demonstrate compliance with the MCL. Routine and increased monitoring frequencies must be conducted in accordance with the requirements in this Section.

BOARD NOTE: Derived from 40 CFR 141.23(c)(9) ~~(2000), as added at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.604 Nitrate Monitoring

Each supplier ~~shall~~ must monitor to determine compliance with the MCL for nitrate in Section 611.301.

a) Suppliers ~~shall~~ must monitor at the following frequencies~~, beginning January 1, 1993~~:

1) CWSs and NTNCWSs~~:~~.

A) GWSs: annually;

B) SWSs and mixed systems: quarterly.

BOARD NOTE: Drawn from 40 CFR 141.23(d)(1) ~~(1991)~~ (2002).

2) Transient non-CWSs: annually.

BOARD NOTE: Drawn from 40 CFR 141.23(d)(4) ~~(1991)~~ (2002).

b) Quarterly monitoring for GWSs.

1) A CWS or NTNCWS supplier that is a GWS ~~shall~~ must initiate quarterly monitoring in the quarter following any one sample that has a nitrate concentration equal to or greater than 50 percent of the MCL.

2) The Agency ~~shall~~ must grant a SEP pursuant to Section 611.110 that reduces the monitoring frequency to annual after the supplier has completed quarterly sampling for at least four quarters if it determines that the sampling point is reliably and consistently below the MCL.

A) The request must include the following minimal information: the results from four consecutive quarterly samples.

B) In issuing the SEP, the Agency ~~shall~~ must 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 ~~consitently~~ consistently" determination ~~shall~~ must include a condition requiring the supplier to resume quarterly monitoring pursuant to subsection (b)(1) of this Section if it violates the MCL specified by Section 611.301 for nitrate.

BOARD NOTE: Derived from 40 CFR 141.23(d)(2) ~~(1991)~~ (2002).

c) Reduction of monitoring frequency for SWSs and mixed systems.

1) The Agency ~~shall~~ must grant a SEP pursuant to Section 611.110 that allows a CWS or NTNCWS supplier that is a SWS or mixed system to reduce its monitoring frequency to annually if it determines that all analytical results from four consecutive quarters are less than 50 percent of the MCL.

2) As a condition of the SEP, the Agency ~~shall~~ must require the supplier to initiate quarterly monitoring, beginning the next quarter, if any one sample is greater than or equal to 50 percent of the MCL.

BOARD NOTE: ~~Drawn~~ Derived from 40 CFR 141.23(d)(3) ~~(1991)~~ (2002).

d) This subsection corresponds with 40 CFR 141.23(d)(4), which the Board has codified at subsection (a)(2). This statement maintains structural consistency with USEPA rules.

e) After completion of four consecutive quarters of monitoring, each CWS or

NTNCWS supplier monitoring annually ~~shall~~ must take samples during the ~~quarter(s)~~ quarters that resulted in the highest analytical result.

BOARD NOTE: ~~Drawn~~ Derived from 40 CFR 141.23(d)(5) ~~(1991)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.605 Nitrite Monitoring

Each supplier ~~shall~~ must monitor to determine compliance with the MCL for nitrite in Section 611.301.

a) ~~All suppliers shall take one sample at each sampling point during the compliance period beginning January 1, 1993 and ending December 31, 1995.~~This subsection (a) corresponds with 40 CFR 141.23(e)(1), which was applicable only until a date now past. This statement maintains consistency with USEPA rules.

b) This subsection corresponds with 40 CFR 141.23(e)(2), a provision by which ~~U.S. EPA~~ USEPA refers to state requirements that do not exist in Illinois. This statement maintains structural consistency with ~~U.S. EPA~~ USEPA rules.

c) ~~Repeat monitoring~~ Monitoring frequency.

1) Quarterly monitoring.

A) A supplier that has any one sample in which the concentration is equal to or greater than 50 percent of the MCL ~~shall~~ must initiate quarterly monitoring during the next quarter.

B) A supplier required to begin quarterly monitoring pursuant to subsection (c)(1)(A) of this Section ~~shall~~ must continue on a quarterly basis for a minimum of one year following any one sample exceeding the 50 percent of the MCL, after which the supplier may discontinue quarterly monitoring pursuant to subsection (c)(2) of this Section.

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

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

B) In issuing the SEP, the Agency ~~shall~~ must 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 consitently” determination ~~shall~~ must include a condition requiring the supplier to resume quarterly monitoring for nitrite pursuant to subsection (c)(1) of this Section if it equals or exceeds 50 percent of the MCL specified by Section 611.301 for nitrite.

d) A supplier that is monitoring annually ~~shall~~ must take samples during the ~~quarter(s) which~~ quarters that previously resulted in the highest analytical result.

BOARD NOTE: Derived from 40 CFR 141.23(e) ~~(1994)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.606 Confirmation Samples

a) Where the results of sampling for antimony, arsenic ~~(effective February 22, 2002)~~, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium indicate a level in excess of the MCL, the supplier must collect one additional sample as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point.

b) Where nitrate or nitrite sampling results indicate a level in excess of the MCL, the supplier must take a confirmation sample within 24 hours after the supplier’s receipt of notification of the analytical results of the first sample.

1) Suppliers unable to comply with the 24-hour sampling requirement must immediately notify the persons served in accordance with Section 611.902 and meet other Tier 1 public notification requirements under Subpart V of this Part.

2) Suppliers exercising this option must take and analyze a confirmation sample within two weeks after notification of the analytical results of the first sample.

c) Averaging rules are specified in Section 611.609. The Agency must delete the original or confirmation sample if it determines that a sampling error occurred, in which case the confirmation sample will replace the original sample.

BOARD NOTE: Derived from 40 CFR 141.23(f) ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.607 More Frequent Monitoring and Confirmation Sampling

This Section corresponds with 40 CFR 141.23(g), ~~a federal provision authorizing~~ which authorizes the states to require more frequent monitoring and confirmation sampling ~~with regard to 40 CFR 141.23(b) through (e) (corresponding with Sections 611.602 through 611.605)~~ than is required under federal law. ~~The Act authorizes the Board to adopt such requirements. The Board has not done so at this Section.~~ This statement maintains structural consistency with ~~U.S. EPA~~ the corresponding federal rules.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.608 Additional Optional Monitoring

Suppliers may conduct additional, more frequent monitoring than the minimum frequencies specified in this Subpart N, without prior approval from the Agency. The supplier must report the results of all such monitoring to the Agency.

BOARD NOTE: Derived from 40 CFR 141.23(h) ~~(1991)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.609 Determining Compliance

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

a) For suppliers that monitor at a frequency greater than annual, compliance with the MCLs for antimony, arsenic (effective January 22, 2004), asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium is determined by a running annual average at each sampling point. Effective January 22, 2004, if a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

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, arsenic (effective January 22, 2004), asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium is determined by the level of the contaminant at any sampling point. If confirmation samples are required by the Agency, the determination of compliance will be based on the average of the annual average of the initial MCL exceedence and any Agency-required confirmation samples. Effective January 22, 2004, if a supplier fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

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 in the initial sample 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) Arsenic sampling results must be reported to the nearest 0.001 mg/~~L~~ℓ.

BOARD NOTE: Derived from 40 CFR 141.23(i) ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.610 Inorganic Monitoring Times

Each supplier ~~shall~~ must monitor, within each compliance period, at the time designated by the Agency by SEP.

BOARD NOTE: Derived from 40 CFR 141.23(j) ~~(1991)~~ (2002).

(Source: Amended at 27 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 the following contaminants must be conducted using the following methods or an alternative approved pursuant to Section 611.480. Criteria for analyzing arsenic, chromium, copper, lead, nickel, selenium, sodium, and thallium with digestion or directly without digestion, and other analytical procedures, are contained in USEPA Technical Notes, incorporated by reference in Section 611.102. (This document also contains approved analytical test methods that ~~remain~~ remained available for compliance monitoring until July 1, 1996. These methods ~~will~~ are not ~~be~~ available for use after July 1, 1996.)

BOARD NOTE: Because MDLs reported in USEPA Environmental Metals Methods 200.7 and 200.9 were determined using a 2× preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium and arsenic by USEPA Environmental Metals Method 200.7, and arsenic by Standard Method 3120 B sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony, lead, and thallium by USEPA Environmental Metals Method 200.9; antimony and lead by Standard Method 3113 B; and lead by ASTM Method D3559-90D unless multiple in-furnace depositions are made.

1) Alkalinity.

A) Titrimetric.

i) ASTM Method D1067-92 B; or

ii) Standard Methods, 18th, 19th, or 20th ed.: Method 2320 B.

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

~~1~~2) Antimony~~:~~.

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

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

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

D) Atomic absorption, furnace technique: Standard Methods, 18th or 19th ed.: Method 3113 B.

~~2~~3) Arsenic~~:~~.

BOARD NOTE: If ultrasonic nebulization is used in the determination of arsenic by Methods 200.7, 200.8, or SM 3120 B, the arsenic must be in the pentavalent state to provide uniform signal response. For methods 200.7

and 3120 B, both samples and standards must be diluted in the same mixed acid matrix concentration of nitric and hydrochloric acid with the addition of 100 µ~~L~~ℓ of 30% hydrogen peroxide per 100 ~~mL~~ mℓ of solution. For direct analysis of arsenic with method 200.8 using ultrasonic nebulization, samples and standards must contain one mg/~~L~~ℓ of sodium hypochlorite.

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

BOARD NOTE: Effective January 23, 2006, a supplier may no longer employ analytical methods using the ICP-AES technology because the detection limits for these methods are 0.008 mg/~~L~~ℓ or higher. This restriction means that the two ICP-AES methods (USEPA Environmental Metals Method 200.7 and Standard Methods, Method 3120 B) approved for use for the MCL of 0.05 mg/~~L~~ℓ may not be used for compliance determinations for the revised MCL of 0.01 mg/~~L~~ℓ. However, prior to the 2005 through 2007 compliance period, a supplier may have compliance samples analyzed with these less sensitive methods.

i) USEPA Environmental Metals Methods: Method 200.7~~,~~; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 3120 B.

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

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

D) Atomic absorption, furnace technique~~:~~.

i) ASTM Method ~~D2972-93~~ D2972-97 C~~,~~; or

ii) Standard Methods, 18th or 19th ed.: Method 3113 B.

E) Atomic absorption, hydride technique~~:~~.

i) ASTM Method ~~D2972-93~~ D2972-97 B~~,~~; or

ii) Standard Methods, 18th or 19th ed.: Method 3114 B.

~~3~~4) Asbestos: Transmission electron microscopy: USEPA Asbestos Methods-100.1 and USEPA Asbestos Methods-100.2.

~~4~~5) Barium~~:~~.

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

i) USEPA Environmental Metals Methods: Method 200.7~~,~~; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 3120 B.

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

C) Atomic absorption, direct aspiration technique: Standard Methods, 18th or 19th ed.: Method 3111 D.

D) Atomic absorption, furnace technique: Standard Methods, 18th, ~~or~~ 19th ed.: Method 3113 B.

~~5~~6) Beryllium~~:~~.

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

i) USEPA Environmental Metals Methods: Method 200.7~~,~~; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 3120 B.

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

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

D) Atomic absorption, furnace technique~~:~~.

i) ASTM Method ~~D3645-93~~ D3645-97 B~~,~~; or

ii) Standard Methods, 18th or 19th ed.: Method 3113 B.

~~6~~7) Cadmium~~:~~.

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

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

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

D) Atomic absorption, furnace technique: Standard Methods, 18th or 19th ed.: Method 3113 B.

8) Calcium.

A) EDTA titrimetric.

i) ASTM Method D511-93 A; or

ii) Standard Methods, 18th, 19th, or 20th ed.: Method 3500-Ca D.

B) Atomic absorption, direct aspiration.

i) ASTM Method D511-93 B; or

ii) Standard Methods, 18th or 19th ed.: Method 3111 B.

C) Inductively-coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, or 20th ed.: Method 3120 B.

~~7~~9) Chromium~~:~~.

A) Inductively-coupled plasma~~ arc furnace:~~.

i) USEPA Environmental Metals Methods: Method 200.7~~,~~; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 3120 B.

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

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

D) Atomic absorption, furnace technique: Standard Methods, 18th or 19th ed.: Method 3113 B.

10) Copper.

A) Atomic absorption, furnace technique.

i) ASTM Method D1688-95 C; or

ii) Standard Methods, 18th or 19th ed.: Method 3113 B.

B) Atomic absorption, direct aspiration.

i) ASTM Method D1688-95 A; or

ii) Standard Methods, 18th or 19th ed.: Method 3111 B.

C) Inductively-coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, or 20th ed.: Method 3120 B.

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

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

11) Conductivity; Conductance.

A) ASTM Method D1125-95 A; or

B) Standard Methods, 18th, 19th, or 20th ed.: Method 2510 B.

~~8~~12) Cyanide~~:~~.

A) Manual distillation (ASTM Method D2036-98 A or Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-CN$^-$ C), followed by spectrophotometric, amenable~~:~~.

i) ASTM Method ~~D2036-91~~ D2036-98 B~~,~~; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-CN$^-$ G.

B) Manual distillation (ASTM Method D2036-98 A or Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-CN$^-$ C), followed by spectrophotometric, manual~~:~~.

i) ASTM Method ~~D2036-91~~ D2036-98 A~~,~~;

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-CN$^-$ E~~,~~; or

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

C) Manual distillation (ASTM Method D2036-98 A or Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-CN$^-$ C), followed by semiautomated spectrophotometric: USEPA Environmental Inorganic Methods: Method 335.4.

D) Selective electrode: Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-CN$^-$ F.

E) UV/Distillation/Spectrophotometric: Kaleda 01.

F) Distillation/Spectrophotometric: QuickChem 10-204-00-1-X.

~~9~~13) Fluoride~~:~~.

A) Ion Chromatography~~:~~.

i) USEPA Environmental Inorganic Methods: Method 300.0,

ii) ASTM Method ~~D4327-91~~ D4327-97~~,~~; or

iii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4110 B.

B) Manual distillation, colorimetric SPADNS: Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-F$^-$ B and D.

C) Manual electrode~~:~~.

i) ASTM Method D1179-93 B~~,~~; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-F$^-$ C.

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

E) Automated alizarin~~:~~.

i) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-F$^-$ E~~,~~; or

ii) Technicon Methods: Method 129-71W.

14) Lead.

A) Atomic absorption, furnace technique.

i) ASTM Method D3559-96 D; or

ii) Standard Methods, 18th or 19th ed.: Method 3113 B.

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

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

D) Differential Pulse Anodic Stripping Voltammetry: Palintest Method 1001.

15) Magnesium.

A) Atomic absorption.

i) ASTM Method D511-93 B; or

ii) Standard Methods, 18th or 19th ed.: Method 3111 B.

B) Inductively-coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, or 20th ed.: Method 3120 B.

C) Complexation titrimetric.

i) ASTM Method D511-93 A; or

ii) Standard Methods, 18th or 19th ed.: Method 3500-Mg E.

iii) Standard Methods, 20th ed.: Method 3500-Mg B.

~~10~~16) Mercury~~:~~.

A) Manual cold vapor technique~~:~~.

i) USEPA Environmental Metals Methods: Method 245.1~~,~~;

ii) ASTM Method~~ D3223-91~~ D3223-97~~,~~; or

iii) Standard Methods, 18th or 19th ed.: Method 3112 B.

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

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

~~11~~17) Nickel~~:~~.

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

i) USEPA Environmental Metals Methods: Method 200.7~~,~~; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 3120 B.

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

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

D) Atomic absorption, direct aspiration technique: Standard Methods, 18th or 19th ed.: Method 3111 B.

E) Atomic absorption, furnace technique: Standard Methods, 18th or 19th ed.: Method 3113 B.

~~12~~18) Nitrate~~:~~.

A) Ion chromatography~~:~~.

i) USEPA Environmental Inorganic Methods: Method 300.0~~,~~;

ii) ASTM Method ~~D4327-91,~~ D4327-97;

iii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4110 B~~,~~; or

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

B) Automated cadmium reduction~~:~~.

i) USEPA Environmental Inorganic Methods: Method 353.2~~,~~;

ii) ASTM Method D3867-90 A~~,~~; or

iii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-NO$_3^-$ F.

C) Ion selective electrode~~:~~.

i) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-NO$_3^-$ D~~,~~; or

ii) Technical Bulletin 601.

D) Manual cadmium reduction~~:~~.

i) ASTM Method D3867-90 B~~,~~; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-NO$_3^-$ E.

~~13~~19) Nitrite~~:~~.

A) Ion chromatography~~:~~.

i) USEPA Environmental Inorganic Methods: Method 300.0~~,~~;

ii) ASTM Method ~~D4327-91~~ D4327-97~~,~~;

iii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4110 B~~,~~; or

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

B) Automated cadmium reduction~~:~~.

- i) USEPA Environmental Inorganic Methods: Method 353.2~~,~~;
- ii) ASTM Method D3867-90 A~~,~~; or
- iii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-NO_3^- F.

C) Manual cadmium reduction~~:~~.

- i) ASTM Method D3867-90 B~~,~~; or
- ii) Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-NO_3^- E.

D) Spectrophotometric: Standard Methods, 18th, ~~or~~ 19th, or 20th ed.: Method 4500-NO_2^- B.

20) Orthophosphate (unfiltered, without digestion or hydrolysis).

A) Automated colorimetric, ascorbic acid.

- i) USEPA Environmental Inorganic Methods: Method 365.1; or
- ii) Standard Methods, 18th, 19th, or 20th ed.: Method 4500-P F.

B) Single reagent colorimetric, ascorbic acid.

- i) ASTM Method D515-88 A; or
- ii) Standard Methods, 18th, 19th, or 20th ed.: Method 4500-P E.

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

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

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

F) Ion Chromatography.

i) USEPA Environmental Inorganic Methods: Method 300.0;

ii) ASTM Method D4327-97; or

iii) Standard Methods, 18th, 19th, or 20th ed.: Method 4110 B.

21) pH.

A) Electrometric.

i) USEPA Inorganic Methods: Method 150.1;

ii) ASTM Method D1293-95; or

iii) Standard Methods, 18th, 19th, or 20th ed.: Method 4500-H+ B.

B) USEPA Inorganic Methods: Method 150.2.

~~14~~22) Selenium~~:~~.

A) Atomic absorption, hydride~~:~~.

i) ASTM Method ~~D3859-93~~ D3859-98 A~~,~~; or

ii) Standard Methods, 18th or 19th ed.: Method 3114 B.

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

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

D) Atomic absorption, furnace technique~~:~~.

i) ASTM Method ~~D3859-93~~ D3859-98 B~~,~~; or

ii) Standard Methods, 18th or 19th ed.: Method 3113 B.

23) Silica.

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

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

C) Colorimetric: ASTM Method D859-95.

D) Molybdosilicate: Standard Methods, 18th or 19th ed.: Method 4500-Si D or Standard Methods, 20th ed.: Method 4500-Si C.

E) Heteropoly blue: Standard Methods, 18th or 19th ed.: Method 4500-Si E or Standard Methods, 20th ed.: Method 4500-Si D.

F) Automated method for molybdate-reactive silica: Standard Methods, 18th or 19th ed.: Method 4500-Si F or Standard Methods, 20th ed.: Method 4500-Si E.

G) Inductively-coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, or 20th ed.: Method 3120 B.

24) Sodium.

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

B) Atomic absorption, direct aspiration: Standard Methods, 18th or 19th ed.: Method 3111 B.

25) Temperature; thermometric: Standard Methods, 18th, 19th, or 20th ed.: Method 2550.

~~15~~26) Thallium~~:~~.

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

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

~~16) Lead:~~

~~A) Atomic absorption, furnace technique:~~

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

~~ii) Standard Methods, 18th or 19th ed.: Method 3113 B.~~

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

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

~~D) Differential Pulse Anodic Stripping Voltammetry: Palintest Method 1001.~~

~~17) Copper:~~

~~A) Atomic absorption, furnace technique:~~

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

~~ii) Standard Methods, 18th or 19th ed.: Method 3113 B.~~

~~B) Atomic absorption, direct aspiration:~~

~~i) ASTM Method D1688-90 A, or~~

~~ii) Standard Methods, 18th or 19th ed.: Method 3111 B.~~

~~C) Inductively-coupled plasma:~~

~~i) USEPA Environmental Metals Methods: Method 200.7, or~~

~~ii) Standard Methods, 18th or 19th ed.: Method 3120 B.~~

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

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

~~18) pH:~~

~~A) Electrometric:~~

~~i) USEPA Inorganic Methods: Method 150.1,~~

~~ii) ASTM Method D1293-84, or~~

~~iii) Standard Methods, 18th or 19th ed.: Method 4500-H$^+$ B.~~

~~B) USEPA Inorganic Methods: Method 150.2.~~

~~19) Conductivity; Conductance:~~

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

~~B) Standard Methods, 18th, or 19th ed.: Method 2510 B.~~

~~20) Calcium:~~

~~A) EDTA titrimetric:~~

~~i) ASTM Method D511-93 A, or~~

~~ii) Standard Methods, 18th, or 19th ed.: Method 3500-Ca D.~~

~~B) Atomic absorption, direct aspiration:~~

~~i) ASTM Method D511-93 B, or~~

~~ii) Standard Methods, 18th or 19th ed.: Method 3111 B.~~

~~C) Inductively-coupled plasma:~~

~~i) USEPA Environmental Metals Methods: Method 200.7, or~~

~~ii) Standard Methods, 18th, or 19th ed.: Method 3120 B.~~

~~21) Alkalinity:~~

~~A) Titrimetric:~~

~~i) ASTM Method D1067-92 B, or~~

~~ii) Standard Methods, 18th, or 19th ed.: Method 2320 B.~~

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

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

~~A) Automated colorimetric, ascorbic acid:~~

~~i) USEPA Environmental Inorganic Methods: Method 365.1, or~~

~~ii) Standard Methods, 18th, or 19th ed.: Method 4500-P F.~~

~~B) Single reagent colorimetric, ascorbic acid:~~

~~i) ASTM Method D515-88 A, or~~

~~ii) Standard Methods, 18th or 19th ed.: Method 4500-P E.~~

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

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

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

~~F) Ion Chromatography:~~

~~i) USEPA Environmental Inorganic Methods: Method 300.0,~~

~~ii) ASTM Method D4327-91, or~~

~~iii) Standard Methods, 18th or 19th ed.: Method 4110 B.~~

~~23) Silica:~~

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

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

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

~~D) Molybdosilicate: Standard Methods, 18th or 19th ed.: Method 4500-Si D.~~

~~E) Heteropoly blue: Standard Methods, 18th or 19th ed.: Method 4500-Si E.~~

~~F) Automated method for molybdate-reactive silica: Standard Methods, 18th or 19th ed.: Method 4500-Si F.~~

~~G) Inductively-coupled plasma:~~

~~i) USEPA Environmental Metals Methods: Method 200.7, or~~

~~ii) Standard Methods, 18th or 19th ed.: Method 3120 B.~~

~~24) Temperature; thermometric: Standard Methods, 18th or 19th ed.: Method 2550.~~

~~25) Sodium:~~

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

~~B) Atomic absorption, direct aspiration: Standard Methods, 18th or 19th ed.: Method 3111 B.~~

b) Sample collection for antimony, arsenic (effective January 22, 2004), asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium pursuant to Sections 611.600 through 611.604 must be conducted using the following sample preservation, container, and maximum holding time procedures:

BOARD NOTE: For cyanide determinations samples must be adjusted with sodium hydroxide to pH 12 at the time of collection. When chilling is indicated the sample must be shipped and stored at 4° C or less. Acidification of nitrate or metals samples may be with a concentrated acid or a dilute (50% by volume) solution of the applicable concentrated acid. Acidification of samples for metals analysis is encouraged and allowed at the laboratory rather than at the time of sampling provided the shipping time and other instructions in Section 8.3 of USEPA Environmental Metals Method 200.7, 200.8, or 200.9 is followed.

1) Antimony~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 6 months.

2) Arsenic~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 6 months.

3) Asbestos~~:~~.

A) Preservative: Cool to 4° C.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.

4) Barium~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 6 months.

5) Beryllium~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within ~~6~~ six months.

6) Cadmium~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within ~~6~~ six months.

7) Chromium~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within ~~6~~ six months.

8) Cyanide~~:~~.

A) Preservative: Cool to 4° C. Add sodium hydroxide to pH ~~>~~ greater than 12. See the analytical methods for information on sample preservation.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.

9) Fluoride~~:~~.

A) Preservative: None.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within ~~1~~ one month.

10) Mercury~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 28 days.

11) Nickel~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within ~~6~~ six months.

12) Nitrate, chlorinated~~:~~.

A) Preservative: Cool to 4° C.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.

13) Nitrate, non-chlorinated~~:~~.

A) Preservative: Concentrated sulfuric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.

14) Nitrite~~:~~.

A) Preservative: Cool to 4° C.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.

15) Selenium~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

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~~ six months.

16) Thallium~~:~~.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within ~~6~~ six months.

c) Analyses under this Subpart N 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 must certify laboratories to conduct analyses for antimony, arsenic (effective January 23, 2006), asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium if the laboratory does as follows:

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

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

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

   B) Arsenic: ± 30% at greater than or equal to 0.003 mg/~~L~~ℓ.

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

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

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

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

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

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

   I) Fluoride: ± 10% at 1 to 10 mg/~~L~~ℓ.

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

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

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

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

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

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

BOARD NOTE: Derived from 40 CFR 141.23(k) ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.612 Monitoring Requirements for Old Inorganic MCLs

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

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

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

3) This subsection (a)(3) corresponds with 40 CFR 141.23(1)(3)~~ (1999)~~, 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 (a)(4) corresponds with 40 CFR 141.23(1)(4)~~ (1999)~~, which authorizes the state to determine compliance and initiate enforcement action. ~~This authority exists through the authorization of the Act, not through federal rules.~~ This statement maintains structural consistency with USEPA rules.

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

c) When the average of four analyses made pursuant to subsection (b) of this Section, rounded to the same number of significant figures as the old MCL for the substance in question, exceeds the old MCL, the supplier must notify the Agency and give notice to the public pursuant to Subpart V 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 (d) corresponds with 40 CFR 141.23(o)~~ (1999)~~, 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 (e) corresponds with 40 CFR 141.23(p)~~ (1999)~~, which pertains to the use of existing data up until a date long since expired. ~~The Board did not~~

~~adopt the original provision in R88-26.~~ This statement maintains structural consistency with USEPA rules.

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

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

2) Iron~~:~~.

A) Standard Methods~~, 18th ed.:~~.

i) Method 3111 B, ~~or~~ 18th or 19th ed.;

ii) Method 3113 B, 18th or 19th ed.; or

iii) Method 3120 B, 18th, 19th, or 20th ed.

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

i) Method 200.7~~,~~; or

ii) Method 200.9.

3) Manganese~~:~~.

A) Standard Methods~~, 18th ed.:~~.

i) Method 3111 B, ~~or~~ 18th or 19th ed.;

ii) Method 3113 B, 18th or 19th ed.; or

iii) Method 3120 B, 18th, 19th, or 20th ed.

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

i) Method 200.7~~,~~;

ii) Method 200.8~~,~~; or

iii) Method 200.9.

4) Zinc~~:~~.

A) Standard Methods~~, 18th ed.:~~.

i) Method 3111 B, 18th or 19th ed.; or

ii) Method 3120 B, 18th, 19th, or 20th ed.

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

i) Method 200.7~~,~~; or

ii) Method 200.8.

BOARD NOTE: The provisions of subsections (a) through (f) of this Section derive from 40 CFR 141.23(l) through (p) ~~(1999), as amended at 65 Fed. Reg. 26022, May 4, 2000~~ (2002). ~~USEPA removed and reserved 40 CFR 141.23(q) (formerly 40 CFR 141.23(f)) at 59 Fed. Reg. 62466 (Dec. 5, 1994). Subsection (f)(2) of this Section relates to a contaminant for which USEPA specifies an MCL, but for which it repealed the analytical method.~~ Subsections (f)(2) through (f)(4) of this Section relate exclusively to additional ~~state~~ State requirements. The Board retained ~~subsections (f)(1), (f)(3), and (f)(4)~~ subsection (f) of this Section to set forth methods for the inorganic contaminants for which there is a ~~state-only~~ State-only MCL. The methods specified are those set forth in 40 CFR 143.4(b) ~~(1999)~~ (2002), for secondary MCLs. ~~The predecessor to subsections (a) through (e) of this Section were formerly codified as Section 611.601. The predecessor to subsection (f) of this Section was formerly codified as Section 611.606.~~

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.630 Special Monitoring for Sodium

a) CWS suppliers ~~shall~~ must collect and analyze one sample per plant at the entry point of the distribution system for the determination of sodium concentration levels; samples must be collected and analyzed annually for CWSs utilizing surface water sources in whole or in part, and at least every three years for CWSs utilizing solely groundwater sources. The minimum number of samples required to be taken by the supplier is based on the number of treatment plants used by the supplier, except that multiple wells drawing raw water from a single aquifer may, with the Agency approval, be considered one treatment plant for determining the minimum number of samples. The Agency ~~shall~~ must require the supplier to collect and analyze water samples for sodium more frequently in locations where the sodium content is variable.

b) The CWS supplier ~~shall~~ must report to the Agency the results of the analyses for sodium within the first 10 days of the month following the month in which the sample results were received or within the first 10 days following the end of the required monitoring period as specified by SEP, whichever of these is first. If more than annual sampling is required, the supplier ~~shall~~ must report the average sodium concentration within 10 days of the month following the month in which the analytical results of the last sample used for the annual average was received.

c) The CWS supplier ~~shall~~ must notify the Agency and appropriate local public health officials of the sodium levels by written notice by direct mail within three months. A copy of each notice required to be provided by this subsection must be sent to the Agency within 10 days of its issuance.

d) Analyses for sodium must be conducted as directed in Section 611.611(a).

BOARD NOTE: Derived from 40 CFR 141.41 ~~(1994), as amended at 59 Fed. Reg. 62470 (Dec. 5, 1994)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.640 Definitions

The following terms are defined for use in this Subpart O 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~~ include the Section 611.310 MCLs for the following contaminants:

Aldrin
2,4-D
DDT
Dieldrin
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 the following:

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)~~ (2002). 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 the following:

Aldicarb
Aldicarb Sulfone
Aldicarb Sulfoxide
Pentachlorophenol

BOARD NOTE: These are organic contaminants regulated at 40 CFR 141.61(c)(1) through (c)(18) ~~(1992)~~ (2002). 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) (2002) and 57 Fed. Reg. 22178 (May 27, 1992).~~ See the Board note appended to Section 611.311(c) for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.

"Phase V SOCs" means the following:

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)~~ (2002). The MCLs for these contaminants are located at Section 611.311~~, and become effective January 17, 1994~~.

"Phase I VOCs" means the following:

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)~~ (2002). The MCLs for these contaminants are located at Section 611.311(a).

"Phase II VOCs" means the following:

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)~~ (2002). The MCLs for these contaminants are in Section 611.311(a).

"Phase V VOCs" means the following:

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)~~ (2002). 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~~"~~, ~~"~~Phase II SOCs~~"~~, Phase IIB SOCs, and ~~"~~Phase V SOCs~~"~~.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.641 Old MCLs

a) An analysis of substances for the purpose of determining compliance with the old MCLs of Section 611.310 must be made as follows:

1) The Agency shall, by SEP, require CWS suppliers utilizing surface water sources to collect samples during the period of the year when contamination by pesticides is most likely to occur. The Agency ~~shall~~ must require the supplier to repeat these analyses at least annually.

2) The Agency shall, by SEP, require CWS suppliers utilizing only groundwater sources to collect samples at least once every three years.

b) If the result of an analysis made pursuant to subsection (a) indicates that the level of any contaminant exceeds its old MCL, the CWS supplier ~~shall~~ must report to the Agency within ~~7~~ seven days and initiate three additional analyses within one month.

c) When the average of four analyses made pursuant to subsection (a), rounded to the same number of significant figures as the MCL for the substance in question, exceeds the old MCL, the CWS supplier ~~shall~~ must report to 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 and must continue until the MCL has not been exceeded in two successive samples or until a monitoring schedule as a condition to a variance, adjusted standard, or enforcement action becomes effective.

d) Analysis made to determine compliance with the old MCLs of Section 611.310 must be made in accordance with the appropriate methods specified in Section 611.645.

BOARD NOTE: This provision now applies only to ~~state-only~~ State-only MCLs. It was formerly derived from 40 CFR 141.24(a) through (e), which USEPA removed and reserved ~~at 59 Fed. Reg. 34323 (July 1, 1994)~~.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.645 Analytical Methods for Organic Chemical Contaminants

Analysis for the Section 611.311(a) VOCs under Section 611.646; the Section 611.311(c) SOCs under Section 611.648; the Section 611.310 old organic MCLs under Section 611.641; and for THMs, TTHMs, and TTHM potential ~~shall~~ must be conducted using the methods listed in this Section or by equivalent methods as approved by the Agency pursuant to Section 611.480. All methods are from USEPA Organic Methods, unless otherwise indicated. All methods are incorporated by reference in Section 611.102.

Volatile Organic Chemical Contaminants (VOCs)~~:~~.

Contaminant	Analytical Methods
Benzene	502.2, 524.2
Carbon tetrachloride	502.2, 524.2, 551.1
Chlorobenzene	502.2, 524.2
1,2-Dichlorobenzene	502.2, 524.2
1,4-Dichlorobenzene	502.2, 524.2
1,2-Dichloroethane	502.2, 524.2
cis-Dichloroethylene	502.2, 524.2
trans-Dichloroethylene	502.2, 524.2
Dichloromethane	502.2, 524.2
1,2-Dichloropropane	502.2, 524.2
Ethylbenzene	502.2, 524.2
Styrene	502.2, 524.2
Tetrachloroethylene	502.2, 524.2, 551.1
1,1,1-Trichloroethane	502.2, 524.2, 551.1
Trichloroethylene	502.2, 524.2, 551.1
Toluene	502.2, 524.2
1,2,4-Trichlorobenzene	502.2, 524.2
1,1-Dichloroethylene	502.2, 524.2
1,1,2-Trichloroethane	502.2, 524.2
Vinyl chloride	502.2, 524.2
Xylenes (total)	502.2, 524.2

Synthetic Organic Chemical Contaminants (SOCs)~~:~~.

Contaminant	Analytical Methods
2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD or dioxin)	Dioxin and Furan Method 1613
2,4-D	515.2, 555, 515.1, 515.3, 515.4, ASTM Method D5317-93

2,4,5-TP (Silvex)	515.2, 555, 515.1, 515.3, 515.4, ASTM Method D5317-93
Alachlor	505*, 507, 508.1, 525.2, 551.1
Atrazine	505*, 507, 508.1, 525.2, 551.1
Benzo(a)pyrene	525.2, 550, 550.1
Carbofuran	531.1, 531.2, Standard Methods, 18th ed. Supplement, 19th ed., or 20th ed.: Method 6610
Chlordane	505, 508, 508.1, 525.2
Dalapon	515.1, 552.1, 552.2, 515.3, 515.4
Di(2-ethylhexyl)adipate	506, 525.2
Di(2-ethylhexyl)phthalate	506, 525.2
Dibromochloropropane (DBCP)	504.1, 551.1
Dinoseb	515.1, 515.2, 515.3, 515.4, 555
Diquat	549.1
Endothall	548.1
Endrin	505, 508, 508.1, 525.2, 551.1
Ethylene Dibromide (EDB)	504.1, 551.1
Glyphosate	547, Standard Methods, 18th ed., 19th ed., or 20th ed.: Method 6651
Heptachlor	505, 508, 508.1, 525.2, 551.1
Heptachlor Epoxide	505, 508, 508.1, 525.2, 551.1
Hexachlorobenzene	505, 508, 508.1, 525.2, 551.1
Hexachlorocyclopentadiene	505, 508, 508.1, 525.2, 551.1
Lindane	505, 508, 508.1, 525.2, 551.1
Methoxychlor	505, 508, 508.1, 525.2, 551.1
Oxamyl	531.1, 531.2, Standard Methods, 18th ed. Supplement, 19th ed., or 20th ed.: Method 6610
PCBs (measured for compliance purposes as decchlorobiphenyl)	508A

PCBs (qualitatively identified as~~ Araclors~~ Aroclors)	505, 508, 508.1, 525.2
Pentachlorophenol	515.1, 515.2, 525.2, 555, 515.3, 515.4, ASTM Method D5317-93
Picloram	515.1, 515.2, 555, 515.3, 515.4, ASTM Method D5317-93
Simazine	505*, 507, 508.1, 525.2, 551.2
Toxaphene	505, 508, 525.2, 508.1

Total Trihalomethanes (TTHMs)~~:~~.

Contaminant	Analytical Methods
Total Trihalomethanes (TTHMs), Trihalomethanes (THMs), and Maximum Total Trihalomethane Potential	502.2, 524.2, 551.1

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

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

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

BOARD NOTE: Derived from 40 CFR 141.24(e)~~ (1999)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

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

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

a) Definitions. As used in this Section the following have the given meanings:

“Detect” and “detection” ~~means~~ mean 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~~ℓ.

BOARD NOTE: Derived from 40 CFR 141.24(f)(7), (f)(11), (f)(14)(i), and (f)(20)~~ (2000)~~ (2002). This is a “trigger level” for Phase I, Phase II, and Phase V

VOCs inasmuch as it prompts further action. The use of the term "detect" in this ~~section~~ Section is not intended to include any analytical capability of quantifying lower levels of any contaminant, or the "method detection limit." Note, however, that certain language at the end of federal paragraph (f)(20) is capable of meaning that the "method detection limit" is used to derive the "detection limit." The Board has chosen to disregard that language at the end of paragraph (f)(20) in favor of the more direct language of paragraphs (f)(7) and (f)(11).

"Method detection limit," as used in subsections (q) and (t) of this Section 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 ~~(2000)~~ (2002). The method detection limit is determined by the procedure set forth in 40 CFR 136, Appendix B. See subsection (t) of this Section.

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

c) Sampling points.

1) Sampling points for a GWS. Unless otherwise provided by ~~an~~ a SEP granted by the Agency pursuant to Section 611.110, a GWS supplier must take at least one sample from each of the following points: each entry point that is representative of each well after treatment.

2) Sampling points for an SWS or mixed system supplier. Unless otherwise provided by ~~an~~ a SEP granted by the Agency pursuant to Section 611.110, an SWS or mixed system supplier must sample from each of the following points:

A) Each entry point after treatment; or

B) Points in the distribution system that are representative of each source.

3) The supplier must take each sample at the same sampling point unless the Agency has granted ~~an~~ a SEP pursuant to Section 611.110 that designates another location as more representative of each source, treatment plant, or within the distribution system.

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

BOARD NOTE: Subsections (b) and (c) of this Section derived from 40 CFR 141.24(f)(1) through (f)(3) ~~(2000)~~ (2002).

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

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

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

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

BOARD NOTE: Derived from 40 CFR 141.24(f)(7) and (f)(10) ~~(2000)~~ (2002), and the discussion at 57 Fed. Reg. 31825 (July 17, 1992). Provisions concerning the term of the waiver appear in subsections (i) and (j) of this Section. The definition of "detect," parenthetically added to the federal counterpart paragraph, is in subsection (a) of this Section.

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

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

1) If it determines that the PWS meets the standard of Section 611.610(e), issue ~~an~~ 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: Subsection (i) of this Section does not apply to an SWS or mixed system supplier.

j) Special considerations for ~~an~~ a SEP for an SWS or mixedsystem supplier.

1) The Agency must determine that an SWS is not vulnerable before issuing ~~an~~ a SEP pursuant to Section 611.110 to an SWS supplier. ~~An~~ A SEP issued to an SWS or mixed system supplier pursuant to subsection (g) of this Section is for a maximum of one compliance period; and

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

BOARD NOTE: There is a great degree of similarity between 40 CFR 141.24(f)(7) ~~(2000)~~ (2002), the provision applicable to GWSs, and 40 CFR 141.24(f)(10) ~~(2000)~~ (2002), the provision for SWSs. The Board has consolidated the common requirements of both paragraphs into subsection (g) of this Section. Subsection (j) of this Section represents the elements unique to an SWSs or mixed system, and subsection (i) of this Section relates to a GWS supplier. Although 40 CFR 141.24(f)(7) and (f)(10) are silent as to a mixed system supplier, the Board has included a mixed system supplier with an SWS supplier because this best follows the federal scheme for all other contaminants.

k) If one of the Phase I VOCs, excluding vinyl chloride; a Phase II VOC; or a Phase V VOC is detected in any sample, then the following must occur:

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

2) Annual monitoring.

A) The Agency must grant ~~an~~ 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 ~~an~~ a SEP must include the following minimal information:

i) For a GWS, two quarterly samples.

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

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

3) Suppliers that monitor annually must monitor during the quarters 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 ~~an~~ a SEP pursuant to Section 611.110 that allows it to discontinue monitoring for that contaminant at that point, as specified in subsection (g) of this Section.

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

A) "Two-carbon contaminants" (Phase I or II VOC) are the following:

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

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

l) Quarterly monitoring following MCL violations.

1) Suppliers that violate an MCL for one of the Phase I VOCs, including vinyl chloride; Phase II VOCs; or Phase V VOCs, as determined by subsection (o) of this Section, must monitor quarterly for that contaminant, at the sampling point where the violation occurred, beginning the next quarter after the violation.

2) Annual monitoring.

A) The Agency must grant ~~an~~ 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 ~~an~~ a SEP must include the following minimal information: four quarterly samples.

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

D) The supplier must monitor during the quarters that previously yielded the highest analytical result.

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

1) If a supplier detects any of the Phase I, Phase II, or Phase V VOCs in a sample, the supplier must take a confirmation sample as soon as possible, but no later than 14 days after the supplier receives notice of the detection.

2) Averaging is as specified in subsection (o) of this Section.

3) The Agency must delete the original or confirmation sample if it determines that a sampling error occurred, in which case the confirmation sample will replace the original or confirmation sample.

n) This subsection (n) corresponds with 40 CFR 141.24(f)(14), an optional USEPA provision relating to compositing of samples that USEPA does not require for state programs. This statement maintains structural consistency with USEPA rules.

o) Compliance with the MCLs for the Phase I, Phase II, and Phase V VOCs must be determined based on the analytical results obtained at each sampling point. Effective January 22, 2004, if one sampling point is in violation of an MCL, the system is in violation of the MCL.

1) Effective January 22, 2004, for a supplier that monitors more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.

2) Effective January 22, 2004, a supplier that monitors annually or less frequently whose sample result exceeds the MCL must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling.

3) Effective January 22, 2004, if any sample result will cause the running annual average to exceed the MCL at any sampling point, the supplier is out of compliance with the MCL immediately.

4) Effective January 22, 2004, if a supplier fails to collect the required number of samples, compliance will be based on the total number of samples collected.

5) Effective January 22, 2004, if a sample result is less than the detection limit, zero will be used to calculate the annual average.

6) Until January 22, 2004, for a supplier that conducts 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 must be deemed as zero for purposes of determining the annual average.

7) Until January 22, 2004, 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. Until January 22, 2004, if a confirmation sample is taken, the determination of compliance is based on the average of two samples.

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

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

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

A) ~~Analyze~~ It must analyze performance evaluation (PE) samples that include these substances provided by the Agency pursuant to 35 Ill. Adm. Code 186.170;

B) ~~Achieve~~ It must achieve the quantitative acceptance limits under subsections (q)(1)(C) and (q)(1)(D) of this Section for at least 80 percent of the regulated organic contaminants in the PE sample;

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

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

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

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

A) ~~Analyze~~ It must analyze PE samples provided by the Agency pursuant to 35 Ill. Adm. Code 186.170;

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

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

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

r) Use of existing data.

1) The Agency must allow the use of data collected after January 1, 1988 but prior to December 1, 1992, pursuant to Agency sample request letters, if it determines that the data are generally consistent with the requirements of this Section.

2) The Agency must grant ~~an~~ a SEP pursuant to Section 611.110 that allows a supplier to monitor annually beginning in the initial compliance period if it determines that the supplier did not detect any Phase I, Phase II, or Phase V VOC using existing data allowed pursuant to subsection (r)(1) of this Section.

s) The Agency shall, by ~~an~~ a SEP issued pursuant to Section 611.110, increase the number of sampling points or the frequency of monitoring if it determines that it is necessary to detect variations within the PWS.

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

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

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

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

v) A new system supplier or a supplier that uses a new source of water ~~which~~ that begins operation after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by a permit issued by the Agency. The supplier must also comply with the initial sampling frequencies specified by the Agency to ensure the supplier can demonstrate compliance with the MCL. Routine and increased monitoring frequencies must be conducted in accordance with the requirements in this Section.

BOARD NOTE: Derived from 40 CFR 141.24(f) ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.648 Phase II, Phase IIB, and Phase V Synthetic Organic Contaminants

Analysis of the Phase II, Phase IIB, and Phase V SOCs for the purposes of determining compliance with the MCL must be conducted as follows:

a) Definitions. As used in this Section, the following terms will have the following meanings:

“Detect” or “detection” means that the contaminant of interest is present at a level greater than or equal to the “detection limit.”

“Detection limit” means the level of the contaminant of interest that is specified in subsection (r) of this Section.

BOARD NOTE: This is a “trigger level” for Phase II, Phase IIB, and Phase V SOCs inasmuch as it prompts further action. The use of the term “detect” or “detection” in this Section is not intended to include any analytical capability of quantifying lower levels of any contaminant, or the “method detection limit.”

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

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.~~ See the Board note appended to Section 611.311(c) for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.

c) Sampling points.

1) Sampling points for GWSs. Unless otherwise provided by SEP, a GWS supplier must take at least one sample from each of the following points: each entry point that is representative of each well after treatment.

2) Sampling points for an SWS or mixed system supplier. Unless otherwise provided by SEP, an SWS or mixed system supplier must sample from each of the following points:

A) Each entry point after treatment; or

B) Points in the distribution system that are representative of each source.

3) The supplier must take each sample at the same sampling point unless the Agency has granted ~~an~~ a SEP that designates another location as more representative of each source, treatment plant, or within the distribution system.

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

BOARD NOTE: Subsections (b) and (c) of this Section derived from 40 CFR 141.24(h)(1) through (h)(3) ~~(2000)~~ (2002).

d) Monitoring frequency.

1) Each CWS and NTNCWS supplier must take four consecutive quarterly samples for each of the Phase II, Phase IIB, and Phase V SOCs during each compliance period, beginning in the three-year compliance period starting in the initial compliance period.

2) Suppliers serving more than 3,300 persons that do not detect a contaminant in the initial compliance period must take a minimum of two quarterly samples in one year of each subsequent three-year compliance period.

3) Suppliers serving fewer than or equal to 3,300 persons that do not detect a contaminant in the initial compliance period must take a minimum of one sample during each subsequent three-year compliance period.

e) Reduction to annual monitoring frequency. A CWS or NTNCWS supplier may apply to the Agency for ~~an~~ a SEP that releases it from the requirements of subsection (d) of this Section. ~~An~~ A SEP from the requirement of subsection (d) of this Section must last for only a single three-year compliance period.

f) Vulnerability assessment. The Agency must grant ~~an~~ a SEP from the requirements of subsection (d) of this Section 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 the following must occur:

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

2) Annual monitoring.

A) A supplier may request that the Agency grant ~~an~~ a SEP pursuant to Section 610.110 that reduces the monitoring frequency to annual.

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

i) For a GWS, two quarterly samples.

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

C) The Agency must grant ~~an~~ 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 must specify the level of the contaminant upon which the "reliably and consistently" determination was based. Any SEP that allows less frequent monitoring based on an Agency "reliably and consistently" determination must include a condition requiring the supplier to resume quarterly monitoring pursuant to subsection (g)(1) of this Section if it detects any Phase II SOC.

3) Suppliers that monitor annually must monitor during the quarters that previously yielded the highest analytical result.

4) Suppliers that have three consecutive annual samples with no detection of a contaminant at a sampling point may apply to the Agency for ~~an~~ a SEP with respect to that point, as specified in subsections (e) and (f) of this

Section.

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) of this Section, subsequent monitoring must analyze for all the related compounds in the respective group.

B) Related contaminants~~:~~.

i) First group~~:~~.

aldicarb
aldicarb sulfone
aldicarb sulfoxide

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

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) of this Section, must monitor quarterly for that contaminant at the sampling point where the violation occurred, beginning the next quarter after the violation.

2) Annual monitoring.

A) A supplier may request that the Agency grant ~~an~~ a SEP pursuant to Section 611.110 that reduces the monitoring frequency to annual.

B) A request for ~~an~~ a SEP must include, at a minimum, the results from four quarterly samples.

C) The Agency must grant ~~an~~ 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 must specify the level of the contaminant upon which the "reliably and consistently" determination was based. Any SEP that allows less frequent monitoring based on an Agency "reliably and consistently" determination must include a condition requiring the supplier to resume quarterly monitoring pursuant to subsection (h)(1) of this Section if it detects any Phase II SOC.

E) The supplier must monitor during the quarters that previously yielded the highest analytical result.

i) Confirmation samples.

1) If any of the Phase II, Phase IIB, or Phase V SOCs are detected in a sample, the supplier must take a confirmation sample as soon as possible, but no later than 14 days after the supplier receives notice of the detection.

2) Averaging is as specified in subsection (k) of this Section.

3) The Agency must delete the original or confirmation sample if it determines that a sampling error occurred, in which case the confirmation sample will replace the original or confirmation sample.

j) This subsection (j) corresponds with 40 CFR 141.24(h)(10), an optional USEPA provision relating to compositing of samples that USEPA does not require for state programs. This statement maintains structural consistency with USEPA rules.

k) Compliance with the MCLs for the Phase II, Phase IIB, and Phase V SOCs ~~shall~~ must be determined based on the analytical results obtained at each sampling point. Effective January 22, 2004, if one sampling point is in violation of an MCL, the supplier is in violation of the MCL.

1) Effective January 22, 2004, for a supplier that monitors more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.

2) Effective January 22, 2004, a supplier that monitors annually or less frequently whose sample result exceeds the regulatory detection level as defined by subsection (r) of this Section must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling.

3) Effective January 22, 2004, if any sample result will cause the running annual average to exceed the MCL at any sampling point, the supplier is out of compliance with the MCL immediately.

4) Effective January 22, 2004, if a supplier fails to collect the required number of samples, compliance will be based on the total number of samples collected.

5) Effective January 22, 2004, if a sample result is less than the detection limit, zero will be used to calculate the annual average.

6) Until January 22, 2004, for a supplier that conducts 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 must be deemed as zero for purposes of determining the annual average.

7) Until January 22, 2004, if the supplier conducts monitoring 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. Until January 22, 2004, if a confirmation sample is taken, the determination of compliance is based on the average of two samples.

l) This subsection (l) corresponds with 40 CFR 141.24(h)(12), which USEPA removed and reserved~~ at 59 Fed. Reg. 62468 (Dec. 5, 1994)~~. This statement maintains structural consistency with the federal regulations.

m) Analysis for PCBs must be conducted as follows using the methods in Section 611.645:

1) Each supplier that monitors for PCBs must analyze each sample using either USEPA Organic Methods, Method 505 or Method 508.

2) If PCBs are detected in any sample analyzed using USEPA Organic Methods, Method 505 or 508, the supplier must 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 must 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 must grant ~~an~~ a SEP pursuant to Section 611.110 that allows a supplier to monitor annually beginning in the initial compliance period if it determines that the supplier did not detect any Phase I VOC or Phase II VOC using existing data allowed pursuant to subsection (n)(1) of this Section.

o) The Agency must issue ~~an~~ 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 (p) corresponds with 40 CFR 141.24(h)(16), a USEPA provision ~~that the Board has not adopted because it reserves~~ relating to reserving enforcement authority to the State ~~and~~ that would serve no useful function as part of the State's rules. This statement maintains structural consistency with USEPA rules.

q) Each supplier must monitor, within each compliance period, at the time designated by the Agency 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), the following:

Aroclor	Detection Limit (mg/~~L~~ℓ)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

2) for other Phase II, Phase IIB, and Phase V SOCs, the following:

Contaminant	Detection Limit (mg/~~L~~ℓ)
Alachlor	0.0002
Aldicarb	0.0005
Aldicarb sulfoxide	0.0005
Aldicarb sulfone	0.0008
Atrazine	0.0001
Benzo(a)pyrene	0.00002
Carbofuran	0.0009
Chlordane	0.0002
2,4-D	0.0001
Dalapon	0.001
1,2-Dibromo-3-chloropropane (DBCP)	0.00002
Di(2-ethylhexyl)adipate	0.0006
Di(2-ethylhexyl)phthalate	0.0006
Dinoseb	0.0002
Diquat	0.0004
Endothall	0.009
Endrin	0.00001
Ethylene dibromide (EDB)	0.00001
Glyphosate	0.006
Heptachlor	0.00004
Heptachlor epoxide	0.00002
Hexachlorobenzene	0.0001
Hexachlorocyclopentadiene	0.0001
Lindane	0.00002
Methoxychlor	0.0001
Oxamyl	0.002
Picloram	0.0001
Polychlorinated biphenyls (PCBs) (as decachlorobiphenyl)	0.0001
Pentachlorophenol	0.00004
Simazine	0.00007
Toxaphene	0.001
2,3,7,8-TCDD (dioxin)	0.000000005
2,4,5-TP (silvex)	0.0002

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

s) Laboratory certification.

1) Analyses under this Section must only be conducted by laboratories that have received approval by USEPA or the Agency according to the conditions of subsection (s)(2) of this Section.

2) To receive certification to conduct analyses for the Phase II, Phase IIB, and Phase V SOCs, the laboratory must do the following:

   A) Analyze PE samples provided by the Agency 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) of this Section that are within the following 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%

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

t) A new system supplier or a supplier that uses a new source of water that begins operation after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by a permit issued by the Agency. The supplier must also comply with the initial sampling frequencies specified by the Agency to ensure the supplier can demonstrate compliance with the MCL. Routine and increased monitoring frequencies must be conducted in accordance with the requirements in this Section.

BOARD NOTE: Derived from 40 CFR 141.24(h) ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.680 Sampling, Analytical, and other Requirements

a) Required monitoring.

1) A CWS supplier that serves a population of 10,000 or more individuals and which adds a disinfectant (oxidant) to the water in any part of the drinking water treatment process must analyze for TTHMs in accordance with ~~thisSubpart~~ this Subpart P.

2) For the purpose of ~~thisSubpart~~ this Subpart P, the minimum number of samples required to be taken by the supplier must be based on the number of treatment plants used by the supplier. However, the Agency shall, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, provide that multiple wells drawing raw water from a single aquifer be considered one treatment plant for determining the minimum number of samples.

3) All samples taken within an established frequency must be collected within a 24-hour period.

b) A CWS supplier serving 10,000 or more individuals.

1) For a CWS supplier utilizing surface a water source in whole or in part, and for a CWS supplier utilizing only a groundwater source, except as provided in Section 611.683, analyses for TTHMs must be performed at quarterly intervals on at least four water samples for each treatment plant used by the system. At least 25 percent of the samples must be taken at locations within the distribution system reflecting the maximum residence time (MRT) of the water in the system. The remaining 75 percent must be taken at representative locations in the distribution system, taking into account the number of persons served, different sources of water and different treatment methods employed. The results of all analyses per quarter must be arithmetically averaged and reported to the Agency within 30 days after the supplier's receipt of such results. All samples collected must be used in the computation of the average, unless the analytical results are invalidated for technical reasons. Sampling and analyses must be conducted in accordance with the methods listed in Section 611.685.

2) Upon application by a CWS supplier, the Agency ~~shall~~ must, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, reduce the monitoring frequency required by subsection (b)(1) to a minimum of one sample analyzed for TTHMs per quarter taken at a point in the distribution system reflecting the MRT of the water in the system, if the Agency determines that the data from at least one year of monitoring in accordance with subsection (b)(1) and local conditions demonstrate that TTHM concentrations will be consistently below the MCL.

3) If at any time during which the reduced monitoring frequency prescribed under this subsection (b) applies, the results from any analysis exceed 0.10 mg/~~L~~ℓ TTHMs and such results are confirmed by at least one check sample taken promptly after such results are received, or if the CWS supplier makes any significant change to its source of water or treatment program, the supplier must immediately begin monitoring in accordance with the requirements of subsection (b)(1), which monitoring must continue for at least 1 year before the frequency may be reduced again. The Agency ~~shall~~ must, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require monitoring in excess of the minimum frequency where it is necessary to detect variations of TTHM levels within the distribution system.

BOARD NOTE: ~~Derived~~ Subsections (a) and (b) of this Section are derived from 40 CFR 141.30(a) and (b) ~~(2000)~~ (2002), modified to remove the limitation regarding addition of disinfectant.

c) Surface water sources for a CWS supplier serving fewer than 10,000 individuals. Suppliers must ~~submit~~ have submitted at least one initial sample per treatment plant for analysis or analytical results from a certified laboratory for MRT concentration taken between May 1, 1990, and October 31, 1990. After written request by the supplier and the determination by the Agency that the results of the sample indicate that the CWS supplier is not likely to exceed the MCL, the CWS must continue to submit one annual sample per treatment plant for analysis or analytical results from a certified laboratory to the Agency taken between May 1 and October 31 of succeeding years. If the sample exceeds the MCL, the CWS must submit to the Agency samples in accordance with the sampling frequency specified in subsection (b) of this Section.

BOARD NOTE: This is an additional State requirement.

d) Groundwater sources for a CWS supplier serving fewer than 10,000 individuals. Suppliers are not required to submit samples for THM analysis under ~~thisSubpart~~ this Subpart P.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.683 Reduced Monitoring Frequency

a) A CWS supplier utilizing only groundwater sources may, by ~~special exception permit~~ a SEP application pursuant to Section 611.110, seek to have the monitoring frequency required by Section 611.680(b)(1) reduced to a minimum of one sample for maximum TTHM potential per year for each treatment plant used by the supplier, taken at a point in the distribution system reflecting maximum residence time of the water in the system.

1) The CWS supplier ~~shall~~ must submit to the Agency at least one sample for maximum TTHM potential using the procedure specified in Section 611.687. A sample must be analyzed from each treatment plant used by the supplier, taken at a point in the distribution system reflecting the maximum residence time of the water in the system.

2) The Agency ~~shall~~ must reduce the supplier's monitoring frequency if it determines that, based upon the data submitted by the supplier, the supplier has a maximum TTHM potential of less than 0.10 mg/~~L~~ℓ and that, based upon an assessment of the local conditions of the CWS, the CWS is not likely to approach or exceed the MCL for TTHMs.

3) The results of all analyses must be reported to the Agency within 30 days of the supplier's receipt of such results.

4) All samples collected must be used for determining whether the supplier complies with the monitoring requirements of Section 611.680(b), unless

the analytical results are invalidated for technical reasons.

5) Sampling and analyses must be conducted in accordance with the methods listed in Section 611.685.

b) Loss or modification of reduced monitoring frequency.

1) If the results from any analysis taken by the supplier for maximum TTHM potential are equal to or greater than 0.10 mg/~~L~~ℓ, and such results are confirmed by at least one check sample taken promptly after such results are received, the CWS supplier ~~shall~~ must immediately begin monitoring in accordance with the requirements of Section 611.680(b), and such monitoring must continue for at least one year before the frequency may be reduced again.

2) In the event of any significant change to the CWS's raw water or treatment program, the supplier ~~shall~~ must immediately analyze an additional sample for maximum TTHM potential taken at a point in the distribution system reflecting maximum residence time of the water in the system.

3) The Agency ~~shall~~ must require increased monitoring frequencies above the minimum where necessary to detect variation of TTHM levels within the distribution system.

BOARD NOTE: Derived from 40 CFR ~~141.30 (c) (1994)~~ 141.30(c) (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.684 Averaging

Compliance with Section 611.310(c) or ~~611.312a)~~ 611.312(a) is determined based on a running annual average of quarterly samples collected by the PWS, as prescribed in Section 611.680(b)(1) or (b)(2). If the average of samples covering any 12 month period exceeds the MCL, the PWS must report to the Agency and notify the public pursuant to Subpart V of this Part. Monitoring after public notification must be at a frequency designated by the Agency and must continue until a monitoring schedule as a condition to a variance, adjusted standard, or enforcement action becomes effective.

BOARD NOTE: Derived from 40 CFR 141.30(d) ~~(1999), as amended at 65 Fed. Reg. 26022, May 4, 2000~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.685 Analytical Methods

Sampling and analyses made pursuant to this Subpart V must be conducted by one of the total trihalomethanes (TTHM) methods, as directed in Section 611.645; in USEPA Technical Notes, incorporated by reference in Section 611.102; or in Section 611.381(b). Samples for TTHM must be dechlorinated upon collection to prevent further production of trihalomethanes according to the procedures described in the methods, except acidification is not required if only THMs or TTHMs are to be determined. Samples for maximum TTHM potential must not be dechlorinated or acidified, and should be held for seven days at 25° C (or above) prior to analysis.

BOARD NOTE: Derived from 40 CFR 141.30(e)~~ (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.686 Modification to System

Before a CWS supplier makes any significant modifications to its existing treatment process for the purposes of achieving compliance with Section 611.310(c), the supplier ~~shall~~ must submit, by way of~~ special exception permit~~ a SEP application pursuant to Section 611.110, a detailed plan setting forth its proposed modification and those safeguards that it will implement to ensure that the bacteriological quality of the drinking water served by the CWS will not be adversely affected by such modification. Upon approval, the plan will become a~~ special exception permit~~ SEP. At a minimum, the plan must require the supplier modifying its disinfection practice to the following:

a) Evaluate the water system for sanitary defects and evaluate the source water for biological quality;

b) Evaluate its existing treatment practices and consider improvements that will minimize disinfectant demand and optimize finished water quality throughout the distribution system;

c) Provide baseline water quality survey data of the distribution system. Such data should include the results from monitoring for coliform and fecal coliform bacteria, fecal streptococci, standard plate counts at 35 degrees C and 20 degrees C, phosphate, ammonia nitrogen, and total organic carbon. Virus studies are required where source waters are heavily contaminated with sewage effluent;

d) Conduct additional monitoring to assure continued maintenance of optimal biological quality in finished water, for example, when chloramines are introduced as disinfectants or when pre-chlorination is being discontinued. The Agency ~~shall~~ must also require additional monitoring for chlorate, chlorite and chlorine dioxide when chlorine dioxide is used. The Agency ~~shall~~ must also require HPC analysis (Section 611.531), as appropriate, before and after any modifications;

e) Consider inclusion in the plan of provisions to maintain an active RDC throughout the distribution system at all times during and after the modification.

BOARD NOTE: Derived from 40 CFR 141.30(f) ~~(1989)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.687 Sampling for Maximum THM Potential

a) The water sample for determination of maximum total trihalomethane potential must be taken from a point in the distribution system that reflects maximum residence time. Procedures for sample collection and handling are given in the methods.

b) The supplier taking samples ~~shall~~ must not add reducing agent to "quench" the chemical reaction producing THMs at the time of sample collection. The intent is to permit the level of THM precursors to be depleted and the concentration of THMs to be maximized for the supply being tested.

c) Four experimental parameters affecting maximum THM production are pH, temperature, reaction time, and the presence of a disinfectant residual. The supplier taking the sample ~~shall~~ must deal with these parameters as follows:

  1) Measure the disinfectant residual at the selected sampling point. Proceed only if a measurable disinfectant residual is present.

  2) Collect triplicate 40 ~~mL~~ mℓ water samples at the pH prevailing at the time of sampling, and prepare a method blank according to the methods.

  3) Seal and store these samples together for seven days at 25° C or above.

  4) After this time period, open one of the sample containers and check for disinfectant residual. Absence of a disinfectant residual invalidates the sample for further analysis.

  5) Once a disinfectant residual has been demonstrated, open another of the sealed samples and determine total THM concentration using an approved analytical method.

BOARD NOTE: Derived from 40 CFR 141.30(g) ~~(1995)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.688 Applicability Dates

The requirements in Sections 611.680 through 611.686 ~~apply~~ applied to a Subpart B community water system that serves 10,000 or more persons until December 31, 2001. The requirements in

Sections 611.680 through 611.686 apply to a community water system that uses only groundwater not under the direct influence of surface water which adds a disinfectant (oxidant) in any part of the treatment process and serves 10,000 or more persons until December 31, 2003. After December 31, 2003, Sections 611.680 through 611.688 are no longer applicable.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.720 Analytical Methods

a) The methods specified below, incorporated by reference in Section 611.102, are to be used to determine compliance with Section 611.330, except in cases where alternative methods have been approved in accordance with Section 611.480.

1) Gross Alpha and Beta~~:~~.

~~A) ASTM Method 302;~~

~~B~~A) Standard Methods~~:~~.

i) Method 302, 13th ed.; or

ii) Method 7110 B, 17th, 18th, 19th, or 20th ed.;

~~C~~B) USEPA Interim Radiochemical Methods: page 1;

~~D~~C) USEPA Radioactivity Methods: Method ~~900~~ 900.0;

~~E~~D) USEPA Radiochemical Analyses: page 1;

~~F~~E) USEPA Radiochemistry Methods: Method 00-01; or

~~G~~F) USGS Methods: Method R-1120-76.

2) Gross Alpha~~:~~.

A) Standard Methods, 18th, 19th, or 20th ed.: Method 7110 C; or

B) USEPA Radiochemistry Methods: Method 00-02.

3) Radium-226~~:~~.

A) ASTM Methods~~:~~.

i) Method ~~D-2460-90~~ D2460-90; or

ii) Method ~~D-3454-91~~ D3454-97;

B) New York Radium Method;

C) Standard Methods~~:~~.

i) Method 304, 13th ed.;

ii) Method 305, 13th ed.;

iii) Method 7500-Ra B, 17th, 18th, 19th, or 20th ed.; or

iv) Method 7500-Ra C, 17th, 18th, 19th, or 20th ed.;

D) USDOE Methods: Method ~~Ra-05~~ Ra-04;

E) USEPA Interim Radiochemical Methods: pages 13 and 16;

F) USEPA Radioactivity Methods: Methods ~~903~~ 903.0, 903.1;

G) USEPA Radiochemical Analyses: page 19;

H) USEPA Radiochemistry Methods: Methods Ra-03, Ra-04; or

I) USGS Methods~~:~~.

i) Method R-1140-76; or

ii) Method R-1141-76.

4) Radium-228~~:~~.

A) Standard Methods~~:~~, 17th, 18th, 19th, or 20th ed.: Method 7500-Ra D;

~~i) Method 304; or~~

~~ii) Method 7500-Ra D;~~

B) New York Radium Method;

C) USEPA Interim Radiochemical Methods: page 24;

D) USEPA Radioactivity Methods: Method ~~904~~ 904.0;

E) USEPA Radiochemical Analyses: page 19;

F) USEPA Radiochemistry Methods: Method Ra-05;

G) USGS Methods: Method R-1142-76; or

H) New Jersey Radium Method.

5) Uranium~~:~~.

A) Standard Methods, 17th, 18th, 19th, or 20th ed.: Method 7500-U C;

~~A~~B) ASTM Methods~~:~~.

~~i) Method D-2907;~~

i~~i~~) Method~~ D-2907-91~~ D2907-97;

ii~~i~~) Method~~ D-3972-90~~ D3972-97; or

~~iv~~iii) Method~~ D-5174-91~~ D5174-97;

~~B~~C) USEPA Radioactivity Methods: Methods~~ 908~~ 908.0, 908.1;

~~C~~D) USEPA Radiochemical Analyses: page 33;

~~D~~E) USEPA Radiochemistry Methods: Method 00-07;~~ or~~

F) USDOE Methods: Method U-02 or U-04; or

~~E~~G) USGS Methods~~:~~.

i) Method R-1180-76;

ii) Method R-1181-76; or

iii) Method R-1182-76.

6) Radioactive Cesium~~:~~.

A) ASTM Methods~~:~~.

i) Method~~ D-2459-72~~ D2459-72; or

ii) Method~~ D 3649-91~~ D3649-91;

B) Standard Methods~~:~~.

i) Method 7120~~ (19th ed.)~~, 19th or 20th ed.; or

ii) Method 7500-Cs B, 17th, 18th, 19th, or 20th ed.;

C) USDOE Methods: Method 4.5.2.3;

D) USEPA Interim Radiochemical Methods: page 4;

E) USEPA Radioactivity Methods: Methods~~ 901~~ 901.0, 901.1;

F) USEPA Radiochemical Analyses: page 92; or

G) USGS Methods~~:~~.

i) Method R-1110-76; or

ii) Method R-1111-76.

7) Radioactive Iodine~~:~~.

A) ASTM Methods~~:~~.

i) ~~D 3649-91~~D3649-91; or

ii) D~~ 4785-88~~4785-93;

B) Standard Methods~~:~~.

i) Method 7120~~ (19th ed.)~~, 19th or 20th ed.;

ii) Method 7500-I B, 17th, 18th, 19th, or 20th ed.;

iii) Method 7500-I C, 17th, 18th, 19th, or 20th ed.; or

iv) Method 7500-I D, 17th, 18th, 19th, or 20th ed.;

C) USDOE Methods: Method 4.5.2.3;

D) USEPA Interim Radiochemical Methods: pages 6, 9;

E) USEPA Radiochemical Analyses: page 92; or

F) USEPA Radioactivity Methods: Methods 901.1,~~ 902~~ 902.0.

8) Radioactive Strontium-89 & 90~~:~~.

A) Standard Methods~~:~~.

i) Method 303, 13th ed.; or

ii) Method 7500-Sr B, 17th, 18th, 19th, or 20th ed.;

B) USDOE Methods~~:~~.

i) Method Sr-01; or

ii) Method Sr-02;

C) USEPA Interim Radiochemical Methods: page 29;

D) USEPA Radioactivity Methods: Method~~ 905~~ 905.0;

E) USEPA Radiochemical Analyses: page 65;

F) USEPA Radiochemistry Methods: Method Sr-04; or

G) USGS Methods: Method R-1160-76.

9) Tritium~~:~~.

A) ASTM Methods: Method~~ D 4107-91~~ D4107-91;

B) Standard Methods~~:~~.

i) Method 306, 13th ed.; or

ii) Method 7500-3H B, 17th, 18th, 19th, or 20th ed.;

C) USEPA Interim Radiochemical Methods: page 34;

D) USEPA Radioactivity Methods: Method~~ 906~~ 906.0;

E) USEPA Radiochemical Analyses: page 87;

F) USEPA Radiochemistry Methods: Method H-02; or

G) USGS Methods: Method R-1171-76.

10) Gamma Emitters~~:~~.

A) ASTM Methods~~:~~.

i) Method ~~D 3649-91~~ D3649-91; or

ii) Method D ~~4785-88~~4785-93;

B) Standard Methods~~:~~.

i) Method 7120 ~~(19th ed.)~~, 19th or 20th ed.;

ii) Method 7500-Cs B, 17th, 18th, 19th, or 20th ed.; or

iii) Method 7500-I B, 17th, 18th, 19th, or 20th ed.;

C) USDOE Method: Method ~~4.5.2.3~~ Ga-01-R;

D) USEPA Radioactivity Methods: Methods ~~901~~ 901.0, 901.1, ~~902~~ or 902.0;

E) USEPA Radiochemical Analyses: page 92; or

F) USGS Methods: Method R-1110-76.

b) When the identification and measurement of radionuclides other than those listed in subsection (a) of this Section are required, the following methods, incorporated by reference in Section 611.102, are to be used, except in cases where alternative methods have been approved in accordance with Section 611.480:

1) "Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," available from NTIS.

2) HASL Procedure Manual, HASL 300, available from ERDA Health and Safety Laboratory.

c) For the purpose of monitoring radioactivity concentrations in drinking water, the required sensitivity of the radioanalysis is defined in terms of a detection limit. The detection limit must be that concentration which can be counted with a precision of plus or minus 100 percent at the 95 percent confidence level (~~1.96 sigma~~ 1.96σ, where ~~sigma~~ σ is the standard deviation of the net counting rate of the sample).

1) To determine compliance with Section 611.330(b), (c), and (e), the detection limit must not exceed the concentrations set forth in the following table:

Contaminant	Detection Limit
Gross alpha particle activity	3 pCi/~~L~~ℓ
Radium-226	1 pCi/~~L~~ℓ
Radium-228	1 pCi/~~L~~ℓ
Uranium	None

BOARD NOTE: Derived from 40 CFR 141.25(c) Table B~~, as added at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003~~ (2002).

2) To determine compliance with Section 611.330(d), the detection limits must not exceed the concentrations listed in the following table:

Radionuclide	Detection Limit
Tritium	1,000 pCi/~~L~~ℓ
Strontium-89	10 pCi/~~L~~ℓ
Strontium-90	2 pCi/~~L~~ℓ
Iodine-131	1 pCi/~~L~~ℓ
Cesium-134	10 pCi/~~L~~ℓ
Gross beta	4 pCi/~~L~~ℓ
Other radionuclides	1/10 of applicable limit

BOARD NOTE: Derived from 40 CFR 141.25(c) Table C~~ (2000), as renumbered at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003~~ (2002).

d) To judge compliance with the MCLs listed in Section 611.330, averages of data must be used and must be rounded to the same number of significant figures as the MCL for the substance in question.

BOARD NOTE: Derived from 40 CFR 141.25~~ (2000), as amended at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.731 Gross Alpha

Monitoring requirements for gross alpha particle activity, radium-226, radium-228, and uranium are as follows:

a) Effective December 8, 2003, a community water system (CWS) supplier must conduct initial monitoring to determine compliance with Section 611.330(b), (c), and (e) by December 31, 2007. For the purposes of monitoring for gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, “detection limit” is defined as in Section

611.720(c).

1) Applicability and sampling location for an existing CWS supplier. An existing CWS supplier using groundwater, surface water, or both groundwater and surface water (for the purpose of this Section hereafter referred to as a supplier) must sample at every entry point to the distribution system that is representative of all sources being used (hereafter called a sampling point) under normal operating conditions. The supplier must take each sample at the same sampling point, unless conditions make another sampling point more representative of each source or the Agency has designated a distribution system location, in accordance with subsection (b)(2)(C) of this Section.

2) Applicability and sampling location for a new CWS supplier. A new CWS supplier or a CWS supplier that uses a new source of water must begin to conduct initial monitoring for the new source within the first quarter after initiating use of the source. A CWS supplier must conduct more frequent monitoring when ordered by the Agency in the event of possible contamination or when changes in the distribution system or treatment processes occur that may increase the concentration of radioactivity in finished water.

b) Initial monitoring: Effective December 8, 2003, a CWS supplier must conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium as follows:

1) A CWS supplier without acceptable historical data, as defined in subsection (b)(2) of this Section, must collect four consecutive quarterly samples at all sampling points before December 31, 2007.

2) Grandfathering of data: A CWS supplier may use historical monitoring data collected at a sampling point to satisfy the initial monitoring requirements for that sampling point, under the following situations.

A) To satisfy initial monitoring requirements, a CWS supplier having only one entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.

B) To satisfy initial monitoring requirements, a CWS supplier with multiple entry points and having appropriate historical monitoring data for each entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.

C) To satisfy initial monitoring requirements, a CWS supplier with appropriate historical data for a representative point in the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003, provided that the Agency finds that the historical data satisfactorily demonstrate that each entry point to the distribution system is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between entry points. The Agency must make its finding in writing, by a SEP issued pursuant to Section 611.110, indicating how the data conforms to the requirements of this subsection (b)(2).

3) For gross alpha particle activity, uranium, radium-226, and radium-228 monitoring, the Agency may, by a SEP issued pursuant to Section 611.110, waive the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit.

4) If the average of the initial monitoring results for a sampling point is above the MCL, the supplier must collect and analyze quarterly samples at that sampling point until the system has results from four consecutive quarters that are at or below the MCL, unless the supplier enters into another schedule as part of a formal compliance agreement with the Agency.

c) Reduced monitoring: Effective December 8, 2003, the Agency may allow a CWS supplier to reduce the future frequency of monitoring from once every three years to once every six or nine years at each sampling point, based on the following criteria:

1) If the average of the initial monitoring results for each contaminant (i.e., gross alpha particle activity, uranium, radium-226, or radium-228) is below the detection limit specified in the table at Section 611.720(c)(1), the supplier must collect and analyze for that contaminant using at least one sample at that sampling point every nine years.

2) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is at or above the detection limit but at or below one-half the MCL, the supplier must collect and analyze for that contaminant using at least one sample at that sampling point every six years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is at or above the detection limit but at or below one-half the MCL, the supplier must collect and analyze for that contaminant using at least one sample at that sampling point every six years.

3) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is above one-half the MCL but at or below the MCL, the supplier must collect and analyze at least one sample at that sampling point every three years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is above one-half the MCL but at or below the MCL, the supplier must collect and analyze at least one sample at that sampling point every three years.

4) A supplier must use the samples collected during the reduced monitoring period to determine the monitoring frequency for subsequent monitoring periods (e.g., if a supplier's sampling point is on a nine year monitoring period, and the sample result is above one-half the MCL, then the next monitoring period for that sampling point is three years).

5) If a supplier has a monitoring result that exceeds the MCL while on reduced monitoring, the supplier must collect and analyze quarterly samples at that sampling point until the supplier has results from four consecutive quarters that are below the MCL, unless the supplier enters into another schedule as part of a formal compliance agreement with the Agency.

d) Compositing: Effective December 8, 2003, to fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a supplier may composite up to four consecutive quarterly samples from a single entry point if analysis is done within a year after the first sample. The analytical results from the composited sample must be treated as the average analytical result to determine compliance with the MCLs and the future monitoring frequency. If the analytical result from the composited sample is greater than one-half the MCL, the Agency may, by a SEP issued pursuant to Section 611.110, direct the supplier to take additional quarterly samples before allowing the supplier to sample under a reduced monitoring schedule.

e) Effective December 8, 2003, a gross alpha particle activity measurement may be substituted for the required radium-226 measurement, provided that the measured gross alpha particle activity does not exceed 5 pCi/~~L~~ℓ. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/~~L~~ℓ.

1) The gross alpha measurement must have a confidence interval of 95% (1.65σ, where σ is the standard deviation of the net counting rate of the sample) for radium-226 and uranium.

2) When a supplier uses a gross alpha particle activity measurement in lieu of a radium-226 or uranium measurement, the gross alpha particle activity analytical result will be used to determine the future monitoring frequency for radium-226 ~~and/~~or uranium.

3) If the gross alpha particle activity result is less than detection, one-half the detection limit will be used to determine compliance and the future monitoring frequency.

f) Until December 8, 2003, compliance must be based on the analysis of an annual composite of four consecutive quarterly samples or the average of the analyses of four samples obtained at quarterly intervals.

1) A gross alpha particle activity measurement may be substituted for the required radium-226 and radium-228 analysis, provided that the measured gross alpha particle activity does not exceed 5 pCi/~~L~~ℓ at a confidence level of 95 percent (~~1.65 sigma~~ 1.65σ where ~~sigma~~ σ is the standard deviation of the net counting rate of the sample). In localities where radium-228 may be present in drinking water, the Agency may, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require radium-226 or radium-228 analyses if it determines that the gross alpha particle activity exceeds 2 pCi/~~L~~ℓ.

2) When the gross alpha particle activity exceeds 5 pCi/~~L~~ℓ, the same or an equivalent sample must be analyzed for radium-226. If the concentration of radium-226 exceeds 3 pCi/~~L~~ℓ the same or an equivalent sample must be analyzed for radium-228.

g) See Section 611.100(e).

h) Until December 8, 2003, CWS suppliers must monitor at least once every four years following the procedure required by subsection (f) of this Section. When an annual record taken in conformance with subsection (f) of this Section has established that the average annual concentration is less than half the MCLs established by Section 611.330, the Agency shall, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, substitute analysis of a single sample for the quarterly sampling procedure required by subsection (f) of this Section.

1) The Agency shall, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require more frequent monitoring in the vicinity of mining or other operations that may contribute alpha particle radioactivity to either surface or groundwater sources of drinking water.

2) A CWS supplier must monitor in conformance with subsection (f) of this Section for one year after the introduction of a new water source. The Agency shall, by ~~special exception permit~~ a SEP issued pursuant to

Section 611.110, require more frequent monitoring in the event of possible contamination or when changes in the distribution system or treatment process occur that may increase the concentration of radioactivity in finished water.

3) The Agency shall, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require a CWS supplier using two or more sources having different concentrations of radioactivity to monitor source water, in addition to water from a free-flowing tap.

4) The Agency must not require monitoring for radium-228 to determine compliance with Section 611.330 after the initial period, provided that the average annual concentration of radium-228 has been assayed at least once using the quarterly sampling procedure required by subsection (f) of this Section.

5) The Agency must require the CWS supplier to conduct annual monitoring if the radium-226 concentration exceeds 3 pCi/~~L~~ℓ.

i) Until December 8, 2003, if the average annual MCL for gross alpha particle activity or total radium as set forth in Section 611.330 is exceeded, the CWS supplier must give notice to the Agency and notify the public as required by Subpart V. Monitoring at quarterly intervals must be continued until the annual average concentration no longer exceeds the MCL or until a monitoring schedule as a condition to a variance, adjusted standard or enforcement action becomes effective.

BOARD NOTE: Subsections (a) through (e) derive from 40 CFR 141.26(a) ~~(2000), as amended at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003~~ (2002). Subsections (f) through (i) derive from 40 CFR 141.26(a), as effective until December 8, 2003.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.732 Beta Particle and Photon Radioactivity

Monitoring and compliance requirements for manmade radioactivity. To determine compliance with the maximum contaminant levels in Section 611.330(d) for beta particle and photon radioactivity, a supplier must monitor at a frequency as follows:

a) Effective December 8, 2003, a CWS supplier (either a surface water or groundwater supplier) designated by the Agency, by a SEP issued pursuant to Section 611.110, as vulnerable must sample for beta particle and photon radioactivity. A supplier must collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the Agency. A supplier already designated by the Agency must continue to sample until the Agency reviews and either reaffirms or removes the designation, by a SEP issued pursuant to Section 611.110.

1) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 50 pCi/~~L~~ℓ (screening level), the Agency may reduce the frequency of monitoring at that sampling point to once every three years. A supplier must collect all samples required in subsection (a) of this Section during the reduced monitoring period.

2) For a supplier in the vicinity of a nuclear facility, the Agency may allow the CWS supplier to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the supplier's entry points, where the Agency determines if such data is applicable to a particular water system, by a SEP issued pursuant to Section 611.110. In the event that there is a release from a nuclear facility, a supplier that is using surveillance data must begin monitoring at the community water supplier's entry points in accordance with subsection (b)(1) of this Section.

b) Effective December 8, 2003, a CWS supplier (either a surface water or groundwater supplier) designated by the Agency, by a SEP issued pursuant to Section 611.110, as utilizing waters contaminated by effluents from nuclear facilities must sample for beta particle and photon radioactivity. A supplier must collect quarterly samples for beta emitters and iodine-131 and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the Agency. A supplier already designated by the Agency as a supplier using waters contaminated by effluents from nuclear facilities must continue to sample until the Agency reviews and either reaffirms or removes the designation, by a SEP issued pursuant to Section 611.110.

1) Quarterly monitoring for gross beta particle activity must be based on the analysis of monthly samples or the analysis of a composite of three monthly samples.

BOARD NOTE: In corresponding 40 CFR 141.26(b)(2)(i), USEPA recommends the use of a composite of three monthly samples.

2) For iodine-131, a composite of five consecutive daily samples must be analyzed once each quarter. The Agency may, by a SEP issued pursuant to Section 611.110, order more frequent monitoring for iodine-131 where it is identified in the finished water.

3) Annual monitoring for strontium-90 and tritium must be conducted by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples.

BOARD NOTE: In corresponding 40 CFR 141.26(b)(2)(iii), USEPA recommends the analysis of four consecutive quarterly samples.

4) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/~~L~~ℓ, the Agency may, by a SEP issued pursuant to Section 611.110, reduce the frequency of monitoring at that sampling point to once every three years. The supplier must collect all samples required in subsection (b) of this Section during the reduced monitoring period.

5) For a supplier in the vicinity of a nuclear facility, the Agency may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry points, where the Agency determines, by a SEP issued pursuant to Section 611.110, that such data is applicable to the particular water system. In the event that there is a release from a nuclear facility, a supplier that uses such surveillance data must begin monitoring at the CWS's entry points in accordance with subsection (b) of this Section.

c) Effective December 8, 2003, a CWS supplier designated by the Agency to monitor for beta particle and photon radioactivity can not apply to the Agency for a waiver from the monitoring frequencies specified in subsection (a) or (b) of this Section.

d) Effective December 8, 2003, a CWS supplier may analyze for naturally occurring potassium-40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. A supplier is allowed to subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if the screening level is exceeded. The potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentrations (in mg/~~L~~ℓ) by a factor of 0.82.

e) Effective December 8, 2003, if the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the screening level, an analysis of the sample must be performed to identify the major radioactive constituents present in the sample and the appropriate doses must be calculated and summed to determine compliance with Section 611.330(d)(1), using the formula in Section 611.330(d)(2). Doses must also be calculated and combined for measured levels of tritium and strontium to determine compliance.

f) Effective December 8, 2003, a supplier must monitor monthly at the sampling points that exceeds the maximum contaminant level in Section 611.330(d) beginning the month after the exceedence occurs. A supplier must continue monthly monitoring until the supplier has established, by a rolling average of three monthly samples, that the MCL is being met. A supplier that establishes that the MCL is being met must return to quarterly monitoring until it meets the requirements set forth in subsection (a)(2) or (b)(1) of this Section.

g) Until December 8, 2003, CWSs using surface water sources and serving more than 100,000 persons and such other CWSs as the Agency, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, requires must monitor for compliance with Section 611.331 by analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples. Compliance with Section 611.331 is assumed without further analysis if the average annual concentration of gross beta particle activity is less than 50 pCi/~~L~~ℓ and if the average annual concentrations of tritium and strontium-90 are less than those listed in Section 611.331, provided that if both radionuclides are present the sum of their annual dose equivalents to bone marrow must not exceed 4 millirem/year.

1) If the gross beta particle activity exceeds 50 pCi/~~L~~ℓ, an analysis of the sample must be performed to identify the major radioactive constituents present and the appropriate organ and total body doses must be calculated to determine compliance with Section 611.331.

2) If the MCLs are exceeded, the Agency shall, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require the supplier to conduct additional monitoring to determine the concentration of man-made radioactivity in principal watersheds.

3) The Agency shall, pursuant to subsection (j) of this Section, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require suppliers of water utilizing only groundwater to monitor for man-made radioactivity.

h) See Section 611.100(e).

i) Until December 8, 2003, CWS suppliers ~~shall~~ must monitor at least every four years following the procedure in subsection (g) of this Section.

j) Until December 8, 2003, the Agency must, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require any CWS supplier utilizing waters contaminated by effluents from nuclear facilities to initiate quarterly monitoring for gross beta particle and iodine-131 radioactivity and annual monitoring for strontium-90 and tritium.

1) Quarterly monitoring for gross beta particle activity must be based on the analysis of monthly samples or the analysis of a composite of three monthly samples. If the gross beta particle activity in a sample exceeds 15 pCi/~~L~~ℓ, the same or an equivalent sample must be analyzed for strontium-89 and cesium-134. If the gross beta particle activity exceeds 50 pCi/~~L~~ℓ,

an analysis of the sample must be performed to identify the major radioactive ~~constitutents~~ constituents present and the appropriate organ and total body doses must be calculated to determine compliance with Section 611.331.

2) For iodine-131, a composite of five consecutive daily samples must be analyzed once each quarter. The Agency shall, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require more frequent monitoring when iodine-131 is identified in the finished water.

3) The Agency shall, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, require annual monitoring for strontium-90 and tritium by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples.

4) The Agency shall, by ~~special exception permit~~ a SEP issued pursuant to Section 611.110, allow the substitution of environmental surveillance data taken in conjunction with a nuclear facility for direct monitoring of manmade radioactivity by the supplier where the Agency determines such data is applicable to the CWS.

k) Until December 8, 2003, if the average annual MCL for man-made radioactivity set forth in Section 611.331 is exceeded, the CWS supplier ~~shall~~ must give notice to the Agency and to the public as required by Subpart T. Monitoring at monthly intervals must be continued until the concentration no longer exceeds the MCL or until a monitoring schedule as a condition to a variance, adjusted standard, or enforcement action becomes effective.

BOARD NOTE: Subsections (a) through (f) derive from 40 CFR 141.26(b) ~~(2000), as amended at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003~~ (2002). Subsections (g) through (k) derive from 40 CFR 141.26(b), as effective until December 8, 2003.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.733 General Monitoring and Compliance Requirements

The following requirements apply effective December 8, 2003:

a) The Agency may, by a SEP issued pursuant to Section 611.110, require more frequent monitoring than specified in Sections 611.731 and 611.732 or may require confirmation samples. The results of the initial and confirmation samples will be averaged for use in a compliance determination.

b) Each PWS supplier must monitor at the time designated by the Agency during each compliance period.

c) Compliance: compliance with Section 611.330(b) through (e) must be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the supplier is in violation of the MCL.

1) For a supplier monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. If the average of any sampling point is greater than the MCL, then the supplier is out of compliance with the MCL.

2) For a supplier monitoring more than once per year, if any sample result would cause the running average to exceed the MCL at any single sampling point, the supplier is immediately out of compliance with the MCL.

3) a supplier must include all samples taken and analyzed under the provisions of this Section and Sections 611.731 and 611.732 in determining compliance, even if that number is greater than the minimum required.

4) If a supplier does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.

5) If a sample result is less than the detection limit, zero will be used to calculate the annual average, unless a gross alpha particle activity is being used in lieu of radium-226 ~~and/~~or uranium. If the gross alpha particle activity result is less than detection, one-half the detection limit will be used to calculate the annual average.

d) The Agency may, by a SEP issued pursuant to Section 611.110, allow the supplier to delete results of obvious sampling or analytic errors.

e) If the MCL for radioactivity set forth in Section 611.330 (b) through (e) is exceeded, the operator of a CWS must give notice to the Agency pursuant to Section 611.840 and to the public, as required by Subpart V of this Part.

BOARD NOTE: Derived from 40 CFR 141.26(c)~~, as added at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

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

Section 611.740 General Requirements

a) The requirements of this Subpart R are National Primary Drinking Water Regulations. These regulations establish requirements for filtration and disinfection that are in addition to standards under which filtration and disinfection are required under Subpart B of this Part. The requirements of this Subpart R are applicable to a Subpart B system supplier serving 10,000 or more persons, ~~beginning January 1, 2002,~~ unless otherwise specified in this Subpart R. The regulations in this Subpart R establish or extend treatment technique requirements in lieu of maximum contaminant levels (MCLs) for the following contaminants: Giardia lamblia, viruses, heterotrophic plate count bacteria, Legionella, Cryptosporidium, and turbidity. Each Subpart B system supplier serving 10,000 or more persons must provide treatment of its source water that complies with these treatment technique requirements and are in addition to those identified in Section 611.220. The treatment technique requirements consist of installing and properly operating water treatment processes that reliably achieve the following:

1) At least 99 percent (2-log) removal of Cryptosporidium between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or Cryptosporidium control under the watershed control plan for unfiltered systems; and

2) Compliance with the profiling and benchmark requirements under the provisions of Section 611.742.

b) A PWS supplier subject to the requirements of this Subpart R is considered to be in compliance with the requirements of subsection (a) of this Section if the following is true:

1) It meets the requirements for avoiding filtration in Sections 611.232 and 611.741, and the disinfection requirements in Sections 611.240 and 611.742; or

2) It meets the applicable filtration requirements in either Section 611.250 or Section 611.743, and the disinfection requirements in Sections 611.240 and 611.742.

c) A supplier must not begin construction of uncovered finished water storage facilities after February 16, 1999.

d) A Subpart B system supplier that did not conduct optional monitoring under

Section 611.742 because it served fewer than 10,000 persons when such monitoring was required, but which serves more than 10,000 persons prior to January 1, 2005 must comply with Sections 611.740, 611.741, 611.743, 611.744, and 611.745. Such a supplier must also obtain the approval of the Agency to establish a disinfection benchmark. A supplier that decides to make a significant change to its disinfection practice, as described in Section 611.742(c)(1)(A) through (c)(1)(D) must obtain the approval of the Agency prior to making such a change.

BOARD NOTE: Derived from 40 CFR 141.170 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.741 Standards for Avoiding Filtration

In addition to the requirements of Section 611.232, a PWS supplier subject to the requirements of this Subpart R that does not provide filtration must meet all of the conditions of subsections (a) and (b) of this Section.

a) Site-specific conditions. In addition to site-specific conditions in Section 611.232, a supplier must maintain the watershed control program under Section 611.232(b) to minimize the potential for contamination by Cryptosporidium oocysts in the source water. The watershed control program must, for Cryptosporidium, do the following:

   1) Identify watershed characteristics and activities that may have an adverse effect on source water quality; and

   2) Monitor the occurrence of activities that may have an adverse effect on source water quality.

b) During the onsite inspection conducted under the provisions of Section 611.232(c), the Agency must determine whether the watershed control program established under Section 611.232(b) is adequate to limit potential contamination by Cryptosporidium oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of the supplier's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water supplier has maximized land ownership or controlled land use within the watershed.

BOARD NOTE: Derived from 40 CFR 141.171 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.742 Disinfection Profiling and Benchmarking

a) Determination of a supplier required to profile. A PWS supplier subject to the requirements of this Subpart R must determine its TTHM annual average using the procedure in subsection (a)(1) of this Section and its HAA5 annual average using the procedure in subsection (a)(2) of this Section. The annual average is the arithmetic average of the quarterly averages of four consecutive quarters of monitoring.

1) The TTHM annual average that is used must be the annual average during the same period as the HAA5 annual average.

A) A supplier that collected data under the provisions of 40 CFR 141 Subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under former 40 CFR 141.42 ~~(1994), as amended at 59 Fed. Reg. 62456 (Dec. 5, 1994)~~ (1995).

B) A supplier that uses "grandfathered" HAA5 occurrence data that meet the provisions of subsection (a)(2)(B) of this Section must use TTHM data collected at the same time under the provisions of Section 611.680.

C) A supplier that uses HAA5 occurrence data that meet the provisions of subsection (a)(2)(C)(i) of this Section must use TTHM data collected at the same time under the provisions of Sections 611.310 and 611.680.

2) The HAA5 annual average that is used must be the annual average during the same period as the TTHM annual average.

A) A supplier that collected data under the provisions of 40 CFR 141 Subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under former 40 CFR 141.42 ~~(1994), as amended at 59 Fed. Reg. 62456 (Dec. 5, 1994)~~ (1995).

B) A supplier that has collected four quarters of HAA5 occurrence data that meets the routine monitoring sample number and location requirements for TTHM in Section 611.680 and handling and analytical method requirements of Section 611.685 may use that data to determine whether the requirements of this Section apply.

C) A supplier that has not collected four quarters of HAA5 occurrence data that meets the provisions of either subsection (a)(2)(A) or (a)(2)(B) of this Section by March 31, 1999 must do either of the

following:

i) Conduct monitoring for HAA5 that meets the routine monitoring sample number and location requirements for TTHM in Section 611.680 and handling and analytical method requirements of Section 611.685 to determine the HAA5 annual average and whether the requirements of subsection (b) of this Section apply~~. This monitoring must be completed so that the applicability determination can be made no later than March 31, 2000~~; or

ii) Comply with all other provisions of this Section as if the HAA5 monitoring had been conducted and the results required compliance with subsection (b) of this Section.

3) The supplier may request that the Agency approve a more representative annual data set than the data set determined under subsection (a)(1) or (a)(2) of this Section for the purpose of determining applicability of the requirements of this Section.

4) The Agency may require that a supplier use a more representative annual data set than the data set determined under subsection (a)(1) or (a)(2) of this Section for the purpose of determining the applicability of the requirements of this Section.

5) The supplier must submit data to the Agency on the schedule in subsections (a)(5)(A) through (a)(5)(E) of this Section.

A) A supplier that collected TTHM and HAA5 data under the provisions of 40 CFR Subpart M (Information Collection Rule), as required by subsections (a)(1)(A) and (a)(2)(A) of this Section, must ~~submit~~ have submitted the results of the samples collected during the last 12 months of required monitoring under Section 611.685 not later than December 31, 1999.

B) A supplier that ~~has~~ had collected four consecutive quarters of HAA5 occurrence data that meets the routine monitoring sample number and location for TTHM in former 40 CFR 141.42 (1994)~~, as amended 59 Fed. Reg. 62456 (Dec. 5, 1994)~~, and handling and analytical method requirements of Section 611.685, as allowed by subsections (a)(1)(B) and (a)(2)(B) of this Section, must ~~submit~~ have submitted that data to the Agency not later than April 30, 1999. Until the Agency has approved the data, the supplier must conduct monitoring for HAA5 using the monitoring requirements specified under subsection (a)(2)(C) of this Section.

C) A supplier that ~~conducts~~ conducted monitoring for HAA5 using the monitoring requirements specified by subsections (a)(1)(C) and (a)(2)(C)(i) of this Section must ~~submit~~ have submitted TTHM and HAA5 data not later than March 31, 2000.

D) A supplier that ~~elects~~ elected to comply with all other provisions of this Section as if the HAA5 monitoring had been conducted and the results required compliance with this Section, as allowed under subsection (a)(2)(C)(ii) of this Section, must ~~notify~~ have notified the Agency in writing of its election not later than December 31, 1999.

E) If the supplier ~~elects~~ elected to request that the Agency approve a more representative data set than the data set determined under subsection (a)(2)(A) of this Section, the supplier must ~~submit~~ have submitted this request in writing not later than December 31, 1999.

6) Any supplier having either a TTHM annual average ≥ 0.064 mg/~~L~~ℓ or an HAA5 annual average ≥ 0.048 mg/~~L~~ℓ during the period identified in subsections (a)(1) and (a)(2) of this Section must comply with subsection (b) of this Section.

b) Disinfection profiling.

1) Any supplier that meets the standards in subsection (a)(6) of this Section must develop a disinfection profile of its disinfection practice for a period of up to three years. The Agency must determine the period of the disinfection profile, with a minimum period of ~~1~~ one year.

2) The supplier must monitor daily for a period of 12 consecutive calendar months to determine the total logs of inactivation for each day of operation, based on the $CT_{99.9}$ values in Appendix B of this Part, as appropriate, through the entire treatment plant. The supplier must ~~begin~~ have begun this monitoring not later than April 1, 2000. As a minimum, the supplier with a single point of disinfectant application prior to entrance to the distribution system must conduct the monitoring in subsections (b)(2)(A) through (b)(2)(D) of this Section. A supplier with more than one point of disinfectant application must conduct the monitoring in subsections (b)(2)(A) through (b)(2)(D) of this Section for each disinfection segment. The supplier must monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in Section 611.531, as follows:

A) The temperature of the disinfected water must be measured once per day at each residual disinfectant concentration sampling point during peak hourly flow.

B) If the supplier uses chlorine, the pH of the disinfected water must be measured once per day at each chlorine residual disinfectant concentration sampling point during peak hourly flow.

C) The disinfectant contact times ("T") must be determined for each day during peak hourly flow.

D) The residual disinfectant concentrations ("C") of the water before or at the first customer and prior to each additional point of disinfection must be measured each day during peak hourly flow.

3) In lieu of the monitoring conducted under the provisions of subsection (b)(2) of this Section to develop the disinfection profile, the supplier may elect to meet the requirements of subsection (b)(3)(A) of this Section. In addition to the monitoring conducted under the provisions of subsection (b)(2) of this Section to develop the disinfection profile, the supplier may elect to meet the requirements of subsection (b)(3)(B) of this Section.

A) A PWS supplier that ~~has~~ had three years of existing operational data may ~~submit~~ have submitted that data, a profile generated using that data, and a request that the Agency approve use of that data in lieu of monitoring under the provisions of subsection (b)(2) of this Section not later than March 31, 2000. The Agency must determine whether the operational data is substantially equivalent to data collected under the provisions of subsection (b)(2) of this Section. The data must also be representative of Giardia lamblia inactivation through the entire treatment plant and not just of certain treatment segments. If the Agency determines that the operational data is substantially equivalent, the Agency must approve the request. Until the Agency approves this request, the system is required to conduct monitoring under the provisions of subsection (b)(2) of this Section.

B) In addition to the disinfection profile generated under subsection (b)(2) of this Section, a PWS supplier that has existing operational data may use that data to develop a disinfection profile for additional years. The Agency must determine whether the operational data is substantially equivalent to data collected under the provisions of subsection (b)(2) of this Section. The data must also be representative of inactivation through the entire treatment plant and not just of certain treatment segments. If the Agency determines that the operational data is substantially equivalent, such systems may use these additional yearly disinfection profiles to develop a benchmark under the provisions of subsection (c) of this Section.

4) The supplier must calculate the total inactivation ratio as follows:

A) If the supplier uses only one point of disinfectant application, the system may determine the total inactivation ratio for the disinfection segment based on either of the methods in subsection (b)(4)(A)(i) or (b)(4)(A)(ii) of this Section.

i) Determine one inactivation ratio ($CT_{calc}/CT_{99.9}$) before or at the first customer during peak hourly flow.

ii) Determine successive $CT_{calc}/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the supplier must calculate the total inactivation ratio ($\Sigma(CT_{calc}/CT_{99.9})$) by determining $CT_{calc}/CT_{99.9}$ for each sequence and then adding the $CT_{calc}/CT_{99.9}$ values together to determine $\Sigma(CT_{calc}/CT_{99.9})$.

B) If the supplier uses more than one point of disinfectant application before the first customer, the system must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The ($CT_{calc}/CT_{99.9}$) value of each segment and ($\Sigma(CT_{calc}/CT_{99.9})$) must be calculated using the method in subsection (b)(4)(A) of this Section.

C) The supplier must determine the total logs of inactivation by multiplying the value calculated in subsection (b)(4)(A) or (b)(4)(B) of this Section by 3.0.

5) A supplier that uses either chloramines or ozone for primary disinfection must also calculate the logs of inactivation for viruses using a method approved by the Agency.

6) The supplier must retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the Agency for review as part of sanitary surveys conducted by the Agency.

c) Disinfection benchmarking.

1) Any supplier required to develop a disinfection profile under the provisions of subsections (a) and (b) of this Section and that decides to make a significant change to its disinfection practice must consult with the Agency prior to making such change. Significant changes to disinfection

practice are the following:

A) Changes to the point of disinfection;

B) Changes to the disinfectants used in the treatment plant;

C) Changes to the disinfection process; and

D) Any other modification identified by the Agency.

2) Any supplier that is modifying its disinfection practice must calculate its disinfection benchmark using the procedure specified in subsections (c)(2)(A) and (c)(2)(B) of this Section.

A) For each year of profiling data collected and calculated under subsection (b) of this Section, the supplier must determine the lowest average monthly Giardia lamblia inactivation in each year of profiling data. The supplier must determine the average Giardia lamblia inactivation for each calendar month for each year of profiling data by dividing the sum of daily Giardia lamblia of inactivation by the number of values calculated for that month.

B) The disinfection benchmark is the lowest monthly average value (for systems with one year of profiling data) or average of lowest monthly average values (for systems with more than one year of profiling data) of the monthly logs of Giardia lamblia inactivation in each year of profiling data.

3) A supplier that uses either chloramines or ozone for primary disinfection must also calculate the disinfection benchmark for viruses using a method approved by the Agency.

4) The supplier must submit information in subsections (c)(4)(A) through (c)(4)(C) of this Section to the Agency as part of its consultation process.

A) A description of the proposed change;

B) The disinfection profile for Giardia lamblia (and, if necessary, viruses) under subsection (b) of this Section and benchmark as required by subsection (c)(2) of this Section; and

C) An analysis of how the proposed change will affect the current levels of disinfection.

BOARD NOTE: Derived from 40 CFR 141.172 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.743 Filtration

A PWS supplier subject to the requirements of this Subpart R that ~~does~~ did not meet all of the standards in this Subpart R and Subpart B of this Part for avoiding filtration must ~~provide~~ have provided treatment consisting of both disinfection, as specified in Section 611.242, and filtration treatment that complies with the requirements of subsection (a) or (b) of this Section or Section 611.250 (b) or (c) by December 31, 2001.

a) Conventional filtration treatment or direct filtration.

1) For a supplier using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month, measured as specified in Sections 611.531 and 611.533.

2) The turbidity level of representative samples of a supplier's filtered water must at no time exceed 1 NTU, measured as specified in Sections 611.531 and 611.533.

3) A supplier that uses lime softening may acidify representative samples prior to analysis using a protocol approved by the Agency.

b) Filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration. A PWS supplier may use a filtration technology not listed in subsection (a) of this Section or in Section 611.250 (b) or (c) if it demonstrates to the Agency, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of Section 611.242(b), consistently achieves 99.9 percent removal or inactivation of Giardia lamblia cysts and 99.99 percent removal or inactivation of viruses, and 99 percent removal of Cryptosporidium oocysts, and the Agency approves the use of the filtration technology. For each approval, the Agency must set turbidity performance requirements that the supplier must meet at least 95 percent of the time and that the supplier must not exceed at any time at a level that consistently achieves 99.9 percent removal or inactivation of Giardia lamblia cysts, 99.99 percent removal or inactivation of viruses, and 99 percent removal of Cryptosporidium oocysts.

BOARD NOTE: Derived from 40 CFR 141.173 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.744 Filtration Sampling Requirements

a) Monitoring requirements for systems using filtration treatment. In addition to monitoring required by Sections 611.531 and 611.533, a PWS subject to the requirements of this Subpart R that provides conventional filtration treatment or direct filtration ~~shall~~ must conduct continuous monitoring of turbidity for each individual filter using an approved method in Section 611.531(a) and ~~shall~~ must calibrate turbidimeters using the procedure specified by the manufacturer. Systems ~~shall~~ must record the results of individual filter monitoring every 15 minutes.

b) If there is a failure in the continuous turbidity monitoring equipment, the system ~~shall~~ must conduct grab sampling every four hours in lieu of continuous monitoring, until the turbidimeter is back online. A system ~~shall~~ must repair the equipment within a maximum of five working days after failure.

BOARD NOTE: Derived from 40 CFR 141.174 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.745 Reporting and Recordkeeping Requirements

In addition to the reporting and recordkeeping requirements in Sections 611.261 and 611.262, a PWS supplier subject to the requirements of this Subpart R that provides conventional filtration treatment or direct filtration must report monthly to the Agency the information specified in subsections (a) and (b) of this Section ~~beginning January 1, 2002~~. In addition to the reporting and recordkeeping requirements in Sections 611.261 and 611.262, a PWS supplier subject to the requirements of this Subpart R that provides filtration approved under Section 611.743(b) must report monthly to the Agency the information specified in subsection (a) of this Section ~~beginning January 1, 2002~~. The reporting in subsection (a) of this Section is in lieu of the reporting specified in Section 611.262(a).

a) Turbidity measurements, as required by Section 611.743, must be reported within ten days after the end of each month the system serves water to the public. Information that must be reported is the following:

1) The total number of filtered water turbidity measurements taken during the month.

2) The number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits specified in Section 611.743(a) or (b).

3) The date and value of any turbidity measurements taken during the month that exceed 1 NTU for a supplier using conventional filtration treatment or direct filtration, or that exceed the maximum level under Section

611.743(b).

b) A supplier must maintain the results of individual filter monitoring taken under Section 611.744 for at least three years. A supplier must report that it has conducted individual filter turbidity monitoring under Section 611.744 within ten days after the end of each month the system serves water to the public. A supplier must report individual filter turbidity measurement results taken under Section 611.744 within ten days after the end of each month the supplier serves water to the public only if measurements demonstrate one or more of the conditions in subsections (b)(1) through (b)(4) of this Section. A supplier that uses lime softening may apply to the Agency for alternative exceedence levels for the levels specified in subsections (b)(1) through (b)(4) of this Section if they can demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance.

1) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart, the supplier must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the supplier must either produce a filter profile for the filter within seven days after the exceedence (if the supplier is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedence.

2) For any individual filter that has a measured turbidity level of greater than 0.5 NTU in two consecutive measurements taken 15 minutes apart at the end of the first four hours of continuous filter operation after the filter has been backwashed or otherwise taken offline, the supplier must report the filter number, the turbidity, and the dates on which the exceedence occurred. In addition, the supplier must either produce a filter profile for the filter within seven days after the exceedence (if the supplier is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedence.

3) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of three consecutive months, the supplier must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the supplier must conduct a self-assessment of the filter within 14 days after the exceedence and report that the self-assessment was conducted. The self-assessment must consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.

4) For any individual filter that has a measured turbidity level of greater than 2.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of two consecutive months, the supplier must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the supplier must arrange for the conduct of a comprehensive performance evaluation by the Agency or a third party approved by the Agency no later than 30 days following the exceedence and have the evaluation completed and submitted to the Agency no later than 90 days following the exceedence.

c) Additional reporting requirements.

1) If at any time the turbidity exceeds 1 NTU in representative samples of filtered water in a system using conventional filtration treatment or direct filtration, the supplier must consult with the Agency as soon as possible, but no later than the end of the next business day.

2) If at any time the turbidity in representative samples of filtered water exceeds the maximum level set by the Agency under Section 611.743(b) for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, the supplier must inform the Agency as soon as possible, but no later than the end of the next business day.

BOARD NOTE: Derived from 40 CFR 141.175 ~~(2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART T: REPORTING AND RECORDKEEPING

Section 611.830 Applicability

Except as otherwise provided, this Subpart T applies to violations of both identical in substance regulations and those noted as additional State requirements.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.831 Monthly Operating Report

Within 30 days following the last day of the month, each CWS supplier ~~shall~~ must submit a monthly operating report to the Agency on forms provided or approved by the Agency.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.833 Cross Connection Reporting

Each CWS supplier exempted pursuant to Section 17(b) of the Act [415 ILCS 5/17(b)] from the disinfection requirement ~~shall~~ must report monthly to the Agency its activity to educate and inform its customers about preventing contamination into the distribution system.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.840 Reporting

a) Except where a shorter period is specified in this Part, a supplier must report to the Agency the results of any test measurement or analysis required by this Part within the following times, whichever is shortest:

1) The first ten days following the month in which the result is received; or

2) The first ten days following the end of the required monitoring period, as specified by ~~special exception permit~~ a SEP issued pursuant to Section 611.110.

b) Except where a different reporting period is specified in this Part, the supplier must report to the Agency within 48 hours any failure to comply with any provision (including failure to comply with monitoring requirements) of this Part.

c) The supplier is not required to report analytical results to the Agency in cases where an Agency laboratory performs the analysis.

d) The supplier, within ten days after completing the public notification requirements under Subpart V of this Part for the initial public notice and any repeat notices, must submit to the Agency a certification that it has fully complied with the public notification regulations. The PWS must include with this certification a representative copy of each type of notice distributed, published, posted, or made available to the persons served by the supplier or to the media.

e) The supplier must submit to the Agency within the time stated in the request copies of any records required to be maintained under Section 611.860 or copies of any documents then in existence ~~which~~ that the Agency is entitled to inspect pursuant to the authority of Section 4 of the Act [415 ILCS 5/4].

BOARD NOTE: Derived from 40 CFR 141.31 ~~(1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.860 Record Maintenance

A supplier must retain on its premises or at a convenient location near its premises the following records:

a) Records of bacteriological analyses made pursuant to this Part must be kept for not less than five years. Records of chemical analyses made pursuant to this Part must be kept for not less than ten years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

1) The date, place, and time of sampling, and the name of the person who collected the sample;

2) Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample, or other special purpose sample;

3) ~~Date~~ The date of analysis;

4) ~~Laboratory~~ The laboratory and person responsible for performing analysis;

5) The analytical technique or method used; and

6) The results of the analysis.

b) Records of action taken by the supplier to correct violations of this Part must be kept for a period not less than three years after the last action taken with respect to the particular violation involved.

c) Copies of any written reports, summaries, or communications relating to sanitary surveys of the system conducted by the supplier itself, by a private consultant, by USEPA, the Agency, or a unit of local government delegated pursuant to Section 611.108, must be kept for a period not less than ten years after completion of the sanitary survey involved.

d) Records concerning a variance or adjusted standard granted to the supplier must be kept for a period ending not less than five years following the expiration of such variance or adjusted standard.

e) Copies of public notices issued pursuant to Subpart V of this Part and certifications made to the Agency pursuant to Section 611.840 must be kept for three years after issuance.

BOARD NOTE: Derived from 40 CFR 141.33~~ (1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART U: CONSUMER CONFIDENCE REPORTS

Section 611.881 Purpose and Applicability~~ of this Subpart~~

a) This Subpart U establishes the minimum requirements for the content of annual reports that community water systems (CWSs) must deliver to their customers. These reports must contain information on the quality of the water delivered by the systems and characterize the risks (if any) from exposure to contaminants detected in the drinking water in an accurate and understandable manner.

b) Notwithstanding the provisions of Section 611.100(d), this Subpart U only applies to CWSs.

c) For the purpose of this Subpart U, "customers" are defined as billing units or service connections to which water is delivered by a CWS.

d) For the purpose of this Subpart U, "detected" means the following: at or above the detection limit levels prescribed by Section 611.600(d) for inorganic contaminants; at or above the levels prescribed by Section ~~611.646~~ 611.646(a) for Phase I, II, and V VOCs; at or above the levels prescribed by Section 611.648(r) for Phase II, IIB, and V SOCs; and at or above the levels prescribed by Section 611.720(c)(3) for radioactive contaminants.

BOARD NOTE: Derived from 40 CFR 141.151~~ (1999)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.882 Compliance Dates

a) Each existing CWS ~~shall deliver~~ must have delivered its first report by October 19, 1999, its second report by July 1, 2000, and it must deliver subsequent reports by July 1 annually thereafter. The first report must ~~contain~~ have contained data collected during~~,~~ or prior to~~,~~ calendar year 1998, as prescribed in Section 611.883(d)(3). Each report thereafter must contain data collected during, or prior to, the previous calendar year.

b) A new CWS ~~shall~~ must deliver its first report by July 1 of the year after its first full calendar year in operation and annually thereafter.

c) A community water system that sells water to another community water system must deliver the applicable information required in Section 611.883 to the buyer system as follows:

1) No later than April 1, 2000, and by April 1 annually thereafter; or

2) On a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

BOARD NOTE: Derived from 40 CFR 141.152 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.883 Content of the Reports

a) Each CWS must provide to its customers an annual report that contains the information specified in this Section and Section 611.884.

b) Information on the source of the water delivered.

1) Each report must identify the sources of the water delivered by the CWS by providing information on the following:

A) The type of the water (e.g., surface water, groundwater); and

B) The commonly used name (if any) and location of the body (or bodies) of water.

2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the Agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the Agency or written by the ~~PWS~~ supplier.

c) Definitions.

1) Each report must include the following definitions:

A) Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

BOARD NOTE: Although an MCLG is not an NPDWR that the Board must include in the Illinois SDWA regulations, the use of this definition is mandatory where the term "MCLG" is defined.

B) Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

2) A report for a CWS operating under relief from an NPDWR issued under Sections 611.111, 611.112, 611.130, or 611.131 must include the following definition: "Variances, Adjusted Standards, and Site-specific Rules: State permission not to meet an MCL or a treatment technique under certain conditions."

3) A report that contains data on contaminants that USEPA regulates using any of the following terms must include the applicable definitions:

A) Treatment technique: A required process intended to reduce the level of a contaminant in drinking water.

B) Action level: The concentration of a contaminant that, if exceeded, triggers treatment or other requirements ~~which~~ that a water system must follow.

C) Maximum residual disinfectant level goal or MRDLG: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

BOARD NOTE: Although an MRDLG is not an NPDWR that the Board must include in the Illinois SDWA regulations, the use of this definition is mandatory where the term "MRDLG" is defined.

D) Maximum residual disinfectant level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

d) Information on detected contaminants.

1) This subsection (d) specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except Cryptosporidium). It applies to the following:

A) Contaminants subject to an MCL, action level, MRDL, or treatment technique (regulated contaminants);

B) Contaminants for which monitoring is required by Section 611.510

(unregulated contaminants); and

C) Disinfection byproducts or microbial contaminants for which monitoring is required by Section 611.382 and Subpart L of this Part, except as provided under subsection (e)(1) of this Section, and which are detected in the finished water.

2) The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results that a CWS chooses to include in its report must be displayed separately.

3) The data must ~~be~~ have been derived from data collected to comply with monitoring and analytical requirements during calendar year 1998 for the first report and must be derived from the data collected in subsequent calendar years ~~thereafter~~, except that the following requirements also apply:

A) Where a system is allowed to monitor for regulated contaminants less often than once a year, the tables must include the date and results of the most recent sampling, and the report must include a brief statement indicating that the data presented in the report is from the most recent testing done in accordance with the regulations. No data older than five years need be included.

B) Results of monitoring in compliance with Section 611.382 and Subpart L need only be included for five years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

4) For detected regulated contaminants (listed in Appendix A of this Part), the tables must contain the following:

A) The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in Appendix A of this Part);

B) The federal Maximum Contaminant Level Goal (MCLG) for that contaminant expressed in the same units as the MCL;

C) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definitions for treatment technique or action level, as appropriate, specified in subsection (c)(3) of this Section;

D) For contaminants subject to an MCL, except turbidity and total coliforms, the highest contaminant level used to determine compliance with an NPDWR, and the range of detected levels, as follows:

i) When compliance with the MCL is determined annually or less frequently: the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

ii) When compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point: the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL.

iii) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all sampling points: the average and range of detection expressed in the same units as the MCL;

BOARD NOTE to subsection (d)(4)(D): When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in Appendix A of this Part; derived from 40 CFR 153 (2002).

E) For turbidity the following:

i) When it is reported pursuant to Section 611.560: the highest average monthly value.

ii) When it is reported pursuant to the requirements of Section 611.211(b): the highest monthly value. The report must include an explanation of the reasons for measuring turbidity.

iii) When it is reported pursuant to Section 611.250, 611.743, or 611.955(b): the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in Section 611.250, 611.743, or 611.955(b) for the filtration technology being used. The report must include an explanation of the reasons for measuring turbidity;

F) For lead and copper the following: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level;

G) For total coliform the following:

i) The highest monthly number of positive samples for systems collecting fewer than 40 samples per month; or

ii) The highest monthly percentage of positive samples for systems collecting at least 40 samples per month;

H) For fecal coliform the following: the total number of positive samples; and

I) The likely sources of detected contaminants to the best of the supplier's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and must be used when available to the supplier. If the supplier lacks specific information on the likely source, the report must include one or more of the typical sources for that contaminant listed in Appendix G of this Part ~~which~~ that are most applicable to the CWS.

5) If a CWS distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table must contain a separate column for each service area and the report must identify each separate distribution system. Alternatively, a CWS may produce separate reports tailored to include data for each service area.

6) The tables must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques, and the report must contain a clear and readily understandable explanation of the violation including the following: the length of the violation, the potential adverse health effects, and actions taken by the CWS to address the violation. To describe the potential health effects, the CWS must use the relevant language of Appendix A of this Part.

7) For detected unregulated contaminants for which monitoring is required (except Cryptosporidium), the tables must contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.

e) Information on Cryptosporidium, radon, and other contaminants as follows:

1) If the CWS has performed any monitoring for Cryptosporidium, including monitoring performed to satisfy the requirements of Subpart L of this Part, that indicates that Cryptosporidium may be present in the source water or the finished water, the report must include the following:

A) A summary of the results of the monitoring; and

B) An explanation of the significance of the results.

2) If the CWS has performed any monitoring for radon ~~which~~ that indicates that radon may be present in the finished water, the report must include the following:

A) The results of the monitoring; and

B) An explanation of the significance of the results.

3) If the CWS has performed additional monitoring that indicates the presence of other contaminants in the finished water, the report must include the following:

A) The results of the monitoring; and

B) An explanation of the significance of the results noting the existence of any health advisory or proposed regulation.

f) Compliance with an NPDWR. In addition to the requirements of subsection (d)(6) of this Section, the report must note any violation that occurred during the year covered by the report of a requirement listed below, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the CWS has taken to correct the violation.

1) Monitoring and reporting of compliance data~~;~~.

2) Filtration and disinfection prescribed by Subpart B of this Part. For CWSs that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes ~~which~~ that constitutes a violation, the report must include the following language as part of the explanation of potential adverse health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

3) Lead and copper control requirements prescribed by Subpart G of this Part. For systems that fail to take one or more actions prescribed by ~~Sections~~ Sections 611.350(d), 611.351, 611.352, 611.353, or 611.354, the report must include the applicable language of Appendix A of this Part for lead, copper, or both.

4) Treatment techniques for acrylamide and epichlorohydrin prescribed by Section 611.296. For systems that violate the requirements of Section

611.296, the report must include the relevant language from Appendix A of this Part.

5) Recordkeeping of compliance data.

6) Special monitoring requirements prescribed by Sections 611.510 and 611.630~~; and~~.

7) Violation of the terms of a variance, adjusted standard, site-specific rule, or administrative or judicial order.

g) Variances, adjusted standards, and site-specific rules. If a system is operating under the terms of a variance, adjusted standard, or site-specific rule issued under ~~Sections~~ Section 611.111, 611.112, or 611.131, the report must contain the following:

1) An explanation of the reasons for the variance, adjusted standard, or site-specific rule;

2) The date on which the variance, adjusted standard, or site-specific rule was issued;

3) A brief status report on the steps the CWS is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance, adjusted standard, or site-specific rule; and

4) A notice of any opportunity for public input in the review, or renewal, of the variance, adjusted standard, or site-specific rule.

h) Additional information.

1) The report must contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water. This explanation may include the language of subsections (h)(1)(A) through (h)(1)(C) of this Section or CWSs may use their own comparable language. The report also must include the language of subsection (h)(1)(D) of this Section.

A) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

B) Contaminants that may be present in source water include the

following:

i) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

ii) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

iii) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

iv) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and

v) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

C) In order to ensure that tap water is safe to drink, USEPA prescribes regulations ~~which~~ that limit the amount of certain contaminants in water provided by public water systems. United States Food and Drug Administration (USFDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

D) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA Safe Drinking Water Hotline (800-426-4791).

2) The report must include the telephone number of the owner, operator, or designee of the CWS as a source of additional information concerning the report.

3) In communities with a large proportion of non-English speaking residents, as determined by the Agency, the report must contain information in the appropriate languages regarding the importance of the report or contain a

telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

4) The report must include information about opportunities for public participation in decisions that may affect the quality of the water.

5) The CWS may include such additional information as it deems necessary for public education consistent with, and not detracting from, the purpose of the report.

BOARD NOTE: Derived from 40 CFR 141.153 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.884 Required Additional Health Information

a) All reports must prominently display the following language: “Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA or Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the USEPA Safe Drinking Water Hotline (800-426-4791).”

b) ~~Ending in the report due by July 1, 2001, a supplier that detects arsenic at levels above 25 μg/L, but below 0.05 mg/L, and beginning in the report due by July 1, 2002, a~~ A supplier that detects arsenic above 0.005 mg/~~L~~ℓ and up to and including 0.01 mg/~~L~~ℓ must do the following:

1) The supplier must include in its report a short informational statement about arsenic, using the following language: “While your drinking water meets USEPA's standard for arsenic, it does contain low levels of arsenic. USEPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. USEPA continues to research the health effects of low levels of arsenic, which is a naturally-occurring mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.”; or

2) The supplier may write its own educational statement, but only in consultation with the Agency.

c) A supplier that detects nitrate at levels above 5 mg/~~L~~ℓ, but below the MCL, must do the following:

1) The supplier must include a short informational statement about the impacts of nitrate on children, using the following language: “Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider”; or

2) The CWS supplier may write its own educational statement, but only in consultation with the Agency.

d) A CWS supplier that detects lead above the action level in more than five percent, and up to and including ten percent, of homes sampled must do the following:

1) The CWS supplier must include a short informational statement about the special impact of lead on children, using the following language: “Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home’s plumbing. If you are concerned about elevated lead levels in your home’s water, you may wish to have your water tested and flush your tap for 30 seconds to two minutes before using tap water. Additional information is available from the USEPA Safe Drinking Water Hotline (800-426-4791)”; or

2) The CWS supplier may write its own educational statement, but only in consultation with the Agency.

e) A CWS supplier that detects TTHM above 0.080 mg/~~L~~ℓ, but below the MCL in Section 611.312, as an annual average, monitored and calculated under the provisions of Section 611.680, must include the health effects language prescribed by Appendix A of this Part.

f) ~~Beginning in the report due by July 1, 2002 and ending~~ Until January 22, 2006, a CWS supplier that detects arsenic above 0.01 mg/~~L~~ℓ and up to and including 0.05 mg/~~L~~ℓ must include the arsenic health effects language prescribed by Appendix A to this Part.

BOARD NOTE: Derived from 40 CFR 141.154 ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.885 Report Delivery and Recordkeeping

a) Except as provided in subsection (g) of this Section, each CWS must mail or otherwise directly deliver one copy of the report to each customer.

b) The CWS must make a good faith effort to reach consumers who do not get water bills, using a means approved by the Agency by a SEP granted pursuant to Section 611.110. A good faith effort to reach consumers includes, but is not limited to, methods such as the following: posting the reports on the Internet, advertising the availability of the report in the news media, publication in a local newspaper, or delivery to community organizations.

c) No later than the date the CWS is required to distribute the report to its customers, each CWS must mail a copy of the report to the Agency, followed within three months by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the Agency.

d) No later than the date the CWS is required to distribute the report to its customers, each CWS must deliver the report to any other agency or clearinghouse identified by the Agency.

e) Each CWS must make its reports available to the public upon request.

f) Each CWS serving 100,000 or more persons must post its current year's report to a publicly-accessible site on the Internet.

g) The Governor or his designee may waive the requirement of subsection (a) of this Section for a CWS serving fewer than 10,000 persons.

   1) Such a CWS must do the following:

      A) The CWS must publish the report in one or more local newspapers serving the county in which the CWS is located;

      B) The CWS must inform the customers that the report will not be mailed, either in the newspapers in which the report is published or by other means approved by the Agency; and

      C) The CWS must make the report available to the public upon request.

   2) Systems serving fewer than 500 persons may forgo the requirements of subsections (g)(1)(A) and (g)(1)(B) of this Section if they provide notice at least once per year to their customers by mail, by door-to-door delivery,

or by posting in a location approved by the Agency that the report is available upon request.

h) Any system subject to this Subpart U must retain copies of its consumer confidence report for no less than three years.

BOARD NOTE: Derived from 40 CFR 141.155 ~~(1999)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

Section 611.901 General Public Notification Requirements

The requirements of this Subpart V replace former notice requirements.

a) Who must give public notice. Each owner or operator of a public water system (a CWS, an NTNCWS, or a transient non-CWS) must give notice for all violations of an NPDWR and for other situations, as listed in this subsection (a). The term "NPDWR violation" is used in this Subpart V to include violations of an MCL, an MRDL, a treatment technique, monitoring requirements, or a testing procedure set forth in this Part. Appendix G to this Part identifies the tier assignment for each specific violation or situation requiring a public notice.

1) NPDWR violations~~:~~.

A) A failure to comply with an applicable MCL or MRDL.

B) A failure to comply with a prescribed treatment technique.

C) A failure to perform water quality monitoring, as required by this Part.

D) A failure to comply with testing procedures as prescribed by this Part.

2) Relief equivalent to a variance and exemptions under sections 1415 and 1416 of SDWA~~:~~.

A) Operation under relief equivalent to a SDWA section 1415 variance, under Section 611.111, or a SDWA section 1416 exemption, under Section 611.112.

B) A failure to comply with the requirements of any schedule that has been set under relief equivalent to a SDWA section 1415 variance, under Section 611.111, or a SDWA section 1415 exemption, under Section 611.112.

3) Special public notices~~:~~.

A) The occurrence of a waterborne disease outbreak or other waterborne emergency.

B) An exceedence of the nitrate MCL by a non-CWS, where granted permission by the Agency under Section 611.300(d).

C) An exceedence of the secondary fluoride standard of Section 611.858.

D) The availability of unregulated contaminant monitoring data.

E) Other violations and situations determined by the Agency by a SEP issued pursuant to Section 611.110 to require a public notice under this Subpart V, not already listed in Appendix G of this Part.

b) The type of public notice required for each violation or situation. The public notice requirements of this Subpart V are divided into three tiers, to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in subsection (a) of this Section are determined by the tier to which it is assigned. This subsection (b) provides the definition of each tier. Appendix G of this Part identifies the tier assignment for each specific violation or situation.

1) Tier 1 public notice: required for NPDWR violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.

2) Tier 2 public notice: required for all other NPDWR violations and situations with potential to have serious adverse effects on human health.

3) Tier 3 public notice: required for all other NPDWR violations and situations not included in Tier 1 and Tier 2.

c) Who must receive notice.

1) Each PWS supplier must provide public notice to persons served by the water supplier, in accordance with this Subpart V. A PWS supplier that sells or otherwise provides drinking water to another PWS supplier (i.e., to a consecutive system) is required to give public notice to the owner or operator of the consecutive system; the consecutive system supplier is

responsible for providing public notice to the persons it serves.

2) If a PWS supplier has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Agency may allow the system to limit distribution of the public notice to only persons served by that portion of the system that is out of compliance. Permission by the Agency for limiting distribution of the notice must be granted in writing, by a SEP granted pursuant to Section 611.110.

3) A copy of the notice must also be sent to the Agency, in accordance with the requirements under Section 611.840(d).

BOARD NOTE: Derived from 40 CFR 141.201 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.902 Tier 1 Public ~~Notice--~~Notice: Form, Manner, and Frequency of Notice

a) Violations or situations that require a Tier 1 public notice. This subsection (a) lists the violation categories and other situations requiring a Tier 1 public notice. Appendix G of this Part identifies the tier assignment for each specific violation or situation.

1) Violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system (as specified in Section 611.325(b)), or when the water supplier fails to test for fecal coliforms or E. coli when any repeat sample tests positive for coliform (as specified in Section 611.525);

2) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in Section 611.301, or when the water supplier fails to take a confirmation sample within 24 hours after the supplier’s receipt of the results from the first sample showing an exceedence of the nitrate or nitrite MCL, as specified in Section 611.606(b);

3) Exceedence of the nitrate MCL by a non-CWS supplier, where permitted to exceed the MCL by the Agency under Section 611.300(d), as required under Section 611.909;

4) Violation of the MRDL for chlorine dioxide, as defined in Section 611.313(a), when one or more samples taken in the distribution system the day following an exceedence of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water supplier does not take the required samples in the distribution system, as specified in Section 611.383(c)(2)(A);

5) ~~Violation of the turbidity MCL under Section 141.13(b), where the Agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the supplier learns of the violation;~~This subsection (a)(5) refers to a violation of the former turbidity standard of Section 611.320, which the Board repealed because it applied to no suppliers in Illinois. This statement maintains structural consistency with the federal regulations;

6) Violation of the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), or Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) treatment technique requirement resulting from a single exceedence of the maximum allowable turbidity limit (as identified in Appendix G), where the Agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the supplier learns of the violation;

7) Occurrence of a waterborne disease outbreak, as defined in Section 611.101, or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination);

8) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the Agency by ~~an~~ a SEP issued pursuant to Section 611.110.

b) When the Tier 1 public notice is to be provided. Additional steps required. A PWS supplier must do the following:

1) ~~Provide~~ It must provide a public notice as soon as practical but no later than 24 hours after the supplier learns of the violation;

2) ~~Initiate~~ It must initiate consultation with the Agency as soon as practical, but no later than 24 hours after the PWS supplier learns of the violation or situation, to determine additional public notice requirements; and

3) ~~Comply~~ It must comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the Agency. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions designed to reach all persons served.

c) The form and manner of the public notice. A PWS supplier must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the PWS supplier are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system. In order to reach all persons served, a water supplier is to use, at a minimum, one or more of the following forms of delivery:

1) Appropriate broadcast media (such as radio and television);

2) Posting of the notice in conspicuous locations throughout the area served by the water supplier;

3) Hand delivery of the notice to persons served by the water supplier; or

4) Another delivery method approved in writing by the Agency by ~~an~~ a SEP issued pursuant to Section 611.110.

BOARD NOTE: Derived from 40 CFR 141.202 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.903 Tier 2 Public ~~Notice--~~Notice: Form, Manner, and Frequency of Notice

a) Violations or situations that require a Tier 2 public notice. This subsection (a) lists the violation categories and other situations requiring a Tier 2 public notice. Appendix G to this Part identifies the tier assignment for each specific violation or situation.

1) All violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required under Section 611.902(a) or where the Agency determines by ~~an~~ a SEP issued pursuant to Section 611.110 that a Tier 1 notice is required;

2) Violations of the monitoring and testing procedure requirements, where the Agency determines by ~~an~~ a SEP issued pursuant to Section 611.110 that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation; and

3) Failure to comply with the terms and conditions of any relief equivalent to a SDWA section 1415 variance or a SDWA section 1416 exemption in place.

b) When Tier 2 public notice is to be provided.

1) A PWS supplier must provide the public notice as soon as practical, but no

later than 30 days after the supplier learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than seven days, even if the violation or situation is resolved. The Agency may, in appropriate circumstances, by ~~an~~ a SEP issued pursuant to Section 611.110, allow additional time for the initial notice of up to three months from the date the supplier learns of the violation. It is not appropriate for the Agency to grant an extension to the 30-day deadline for any unresolved violation or to allow across-the-board extensions by rule or policy for other violations or situations requiring a Tier 2 public notice. Extensions granted by the Agency must be in writing.

2) The PWS supplier must repeat the notice every three months as long as the violation or situation persists, unless the Agency determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstance may the repeat notice be given less frequently than once per year. It is not appropriate for the Agency to allow less frequent repeat notice for an MCL violation under the Total Coliform Rule or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Surface Water Treatment Rule. It is also not appropriate for the Agency to allow across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. An Agency determination allowing repeat notices to be given less frequently than once every three months must be in writing.

3) For the turbidity violations specified in this subsection (b)(3), a PWS supplier must consult with the Agency as soon as practical but no later than 24 hours after the supplier learns of the violation, to determine whether a Tier 1 public notice under Section 611.902(a) is required to protect public health. When consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notice of the violation within the next 24 hours (i.e., no later than 48 hours after the supplier learns of the violation), following the requirements under Section 611.902(b) and (c). Consultation with the Agency is required for the following:

A) Violation of the turbidity MCL under Section ~~141.320(b)~~ 611.320(b); or

B) Violation of the SWTR, IESWTR, or treatment technique requirement resulting from a single exceedence of the maximum allowable turbidity limit.

c) The form and manner of Tier 2 public notice. A PWS supplier must provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

1) Unless directed otherwise by the Agency in writing, by ~~an~~ a SEP issued pursuant to Section 611.110, a CWS supplier must provide notice by the following:

A) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the PWS supplier; and

B) Any other method reasonably calculated to reach other persons regularly served by the supplier, if they would not normally be reached by the notice required in subsection (c)(1)(A) of this Section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the supplier or on the Internet; or delivery to community organizations.

2) Unless directed otherwise by the Agency in writing, by ~~an~~ a SEP issued pursuant to Section 611.110, a non-CWS supplier must provide notice by the following means:

A) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the supplier, or by mail or direct delivery to each customer and service connection (where known); and

B) Any other method reasonably calculated to reach other persons served by the system if they would not normally be reached by the notice required in subsection (c)(2)(A) of this Section. Such persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely pass by. Other methods may include the following: Publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or delivery of multiple copies in central locations (e.g., community centers).

BOARD NOTE: Derived from 40 CFR 141.203 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.904 Tier 3 Public ~~Notice--~~Notice: Form, Manner, and Frequency of Notice

a) Violations or situations that require a Tier 3 public notice. This subsection (a) lists the violation categories and other situations requiring a Tier 3 public notice. Appendix G of this Part identifies the tier assignment for each specific violation or situation.

1) Monitoring violations under this Part, except where a Tier 1 notice is required under Section 611.902(a) or where the Agency determines by a SEP issued pursuant to Section 611.110 that a Tier 2 notice is required;

2) Failure to comply with a testing procedure established in this Part, except where a Tier 1 notice is required under Section 611.902(a) or where the Agency determines by a SEP issued pursuant to Section 611.110 that a Tier 2 notice is required;

3) Operation under relief equivalent to a SDWA ~~Section~~ section 1415 variance granted under Section 611.111 or relief equivalent to a SDWA ~~Section~~ section 1416 exemption granted under Section 611.112;

4) Availability of unregulated contaminant monitoring results, as required under Section 611.907; and

5) Exceedence of the secondary standard for fluoride under Section 611.858, as required under Section 611.908.

b) When the Tier 3 public notice is to be provided.

1) A PWS supplier must provide the public notice not later than one year after the supplier learns of the violation or situation or begins operating under relief equivalent to a SDWA ~~Section~~ section 1415 variance or ~~Section~~ section 1416 exemption. Following the initial notice, the supplier must repeat the notice annually for as long as the violation, relief equivalent to a SDWA ~~Section~~ section 1415 variance or ~~Section~~ section 1416 exemption, or other situation persists. If the public notice is posted, the notice must remain in place for as long as the violation, relief equivalent to a SDWA ~~Section~~ section 1415 variance or ~~Section~~ section 1416 exemption, or other situation persists, but in no case less than seven days (even if the violation or situation is resolved).

2) Instead of individual Tier 3 public notices, a PWS supplier may use an annual report detailing all violations and situations that occurred during the previous twelve months, as long as the timing requirements of subsection (b)(1) of this Section are met.

c) The form and manner of the Tier 3 public notice. A PWS supplier must provide the initial notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

1) Unless directed otherwise by the Agency by a SEP issued pursuant to Section 611.110 in writing, a CWS supplier must provide notice by the following:

A) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the supplier; and

B) Any other method reasonably calculated to reach other persons regularly served by the supplier, if they would not normally be reached by the notice required in subsection (c)(1)(A) of this Section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include the following: publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places or on the Internet; or delivery to community organizations.

2) Unless directed otherwise by the Agency by a SEP issued pursuant to Section 611.110 in writing, a non-CWS supplier must provide notice by the following:

A) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the supplier, or by mail or direct delivery to each customer and service connection (where known); and

B) Any other method reasonably calculated to reach other persons served by the supplier, if they would not normally be reached by the notice required in subsection (c)(2)(A) of this Section. Such persons may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include the following: publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or delivery of multiple copies in central locations (e.g., community centers).

d) When the Consumer Confidence Report may be used to meet the Tier 3 public notice requirements. For a CWS supplier, the Consumer Confidence Report (CCR) required under Subpart U of this Part may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as the following is true:

1) The CCR is provided to persons served no later than 12 months after the supplier learns of the violation or situation as required under Section 611.904(b);

2) The Tier 3 notice contained in the CCR follows the content requirements under Section 611.905; and

3) The CCR is distributed following the delivery requirements under Section 611.904(c).

BOARD NOTE: Derived from 40 CFR 141.204 ~~(2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.905 Content of the Public Notice

a) Elements included in public notice for violation of an NPDWR or other situations. When a PWS supplier violates an NPDWR or has a situation requiring public notification, each public notice must include the following elements:

1) A description of the violation or situation, including the contaminants of concern, and (as applicable) the contaminant levels;

2) When the violation or situation occurred;

3) Any potential adverse health effects from the violation or situation, including the standard language under subsection (d)(1) or (d)(2) of this Section, whichever is applicable;

4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water;

5) Whether alternative water supplies should be used;

6) What actions consumers should take, including when they should seek medical help, if known;

7) What the supplier is doing to correct the violation or situation;

8) When the water supplier expects to return to compliance or resolve the

situation;

9) The name, business address, and phone number of the water system owner, operator, or designee of the public water system as a source of additional information concerning the notice; and

10) A statement to encourage the notice recipient to distribute the public notice to other persons served, using the standard language under subsection (d)(3) of this Section, where applicable.

b) The elements that must be included in the public notice for public water systems operating under relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption.

1) If a PWS supplier has been granted a relief equivalent to a SDWA ~~Section~~ section 1415 variance, under Section 611.111, or a ~~Section~~ section 1416 exemption, under Section 611.112, the public notice must contain the following:

A) An explanation of the reasons for the relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption;

B) The date on which the relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption was issued;

C) A brief status report on the steps that the supplier is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption; and

D) A notice of any opportunity for public input in the review of the relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption.

2) If a PWS supplier violates the conditions of relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption, the public notice must contain the ten elements listed in subsection (a) of this Section.

c) How the public notice is to be presented.

1) Each public notice required by this Section must comply with the following:

A) It must be displayed in a conspicuous way when printed or posted;

B) It must not contain overly technical language or very small print;

C) It must not be formatted in a way that defeats the purpose of the notice;

D) It must not contain language ~~which~~ that nullifies the purpose of the notice.

2) Each public notice required by this Section must comply with multilingual requirements, as follows:

A) For a PWS supplier serving a large proportion of non-English speaking consumers, the public notice must contain information in the appropriate languages regarding the importance of the notice or contain a telephone number or address where persons served may contact the water supplier to obtain a translated copy of the notice or to request assistance in the appropriate language.

B) In cases where the Agency has not determined what constitutes a large proportion of non-English speaking consumers, the PWS supplier must include in the public notice the same information as in subsection (c)(2)(A) of this Section, where appropriate to reach a large proportion of non-English speaking persons served by the water supplier.

d) Standard language that a PWS supplier must include in its public notice. A PWS supplier is required to include the following standard language in its public notice:

1) Standard health effects language for MCL or MRDL violations, treatment technique violations, and violations of the condition of relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption. A PWS supplier must include in each public notice the health effects language specified in Appendix H to this Part corresponding to each MCL, MRDL, and treatment technique violation listed in Appendix G to this Part, and for each violation of a condition of relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption.

2) Standard language for monitoring and testing procedure violations. A PWS supplier must include the following language in its notice, including the language necessary to fill in the blanks, for all monitoring and testing procedure violations listed in Appendix G of this Part:

> We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During ~~[~~(compliance period~~]~~), we "did not monitor or test" or "did not complete all monitoring or testing" for ~~[~~(contaminants~~]~~), and therefore cannot be sure of the quality of your drinking water during that time.

3) Standard language to encourage the distribution of the public notice to all persons served. A PWS supplier must include the following language in its notice (where applicable):

> Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

BOARD NOTE: Derived from 40 CFR 141.205~~, as added at 65 Fed. Reg. 26038 (May 4, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.906 Notice to New Billing Units or New Customers

a) The requirement for a CWS. A CWS supplier must give a copy of the most recent public notice for any continuing violation, the existence of relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption, or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.

b) The requirement for non-CWS. A non-CWS supplier must continuously post the public notice in conspicuous locations in order to inform new consumers of any continuing violation, relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption, or other situation requiring a public notice for as long as the violation, the relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption, or other situation persists.

BOARD NOTE: Derived from 40 CFR 141.206~~, as added at 65 Fed. Reg. 26039 (May 4, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.907 Special Notice of the Availability of Unregulated Contaminant Monitoring Results

a) When to give special notice. The owner or operator of a CWS supplier or an NTNCWS supplier required to monitor for unregulated contaminants under Section 611.510 must notify persons served by the supplier of the availability of the results of such sampling no later than 12 months after the monitoring results are known.

b) The form and manner of a special notice. The form and manner of the public notice must follow the requirements for a Tier 3 public notice prescribed in Sections 611.904(c), (d)(1), and (d)(3). The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

BOARD NOTE: Derived from 40 CFR 141.207~~, as added at 65 Fed. Reg. 26039 (May 4, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.908 Special Notice for Exceedence of the Fluoride Secondary Standard

a) When to give special notice. A CWS supplier that exceeds the fluoride secondary standard (SMCL) of 2 mg/~~L~~ℓ, as specified in Section 611.858 (determined by the last single sample taken in accordance with Section 611.603), but does not exceed the maximum contaminant level (MCL) of 4 mg/~~L~~ℓ for fluoride (as specified in Section 611.301), must provide the public notice in subsection (c) of this Section to persons served. Public notice must be provided as soon as practical but no later than 12 months from the day the supplier learns of the exceedence. A copy of the notice must also be sent to all new billing units and new customers at the time service begins and to the Department of ~~Pubic~~ Public Health. The PWS supplier must repeat the notice at least annually for as long as the SMCL is exceeded. If the public notice is posted, the notice must remain in place for as long as the fluoride SMCL is exceeded, but in no case less than seven days (even if the exceedence is eliminated). On a case-by-case basis, the Agency may require an initial notice sooner than 12 months and repeat notices more frequently than annually.

b) The form and manner of a special notice. The form and manner of the public notice (including repeat notices) must follow the requirements for a Tier 3 public notice in Section 611.904(c), (d)(1), and (d)(3).

c) Mandatory language in a special notice. The notice must contain the following language, including the language necessary to fill in the blanks:

> This is an alert about your drinking water and a cosmetic dental problem

that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/~~L~~ℓ) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system ~~[~~(name~~]~~) has a fluoride concentration of ~~[~~(insert value~~]~~) mg/~~L~~ℓ. Dental fluorosis, in its moderate or severe forms, may result in a brown staining ~~and/~~or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4 mg/~~L~~ℓ of fluoride (the USEPA's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/~~L~~ℓ of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/~~L~~ℓ because of this cosmetic dental problem.

For more information, please call ~~[~~(name of water system contact~~]~~) of ~~[~~(name of community water system~~]~~) at ~~[~~(phone number~~]~~). Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.

BOARD NOTE: Derived from 40 CFR 141.208~~ (2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.909 Special Notice for Nitrate Exceedences above the MCL by a Non-Community Water System

a) When the special notice is to be given. The owner or operator of a non-CWS supplier granted permission by the Agency under Section 611.300(d) to exceed the nitrate MCL must provide notice to persons served according to the requirements for a Tier 1 notice under Section 611.902(a) and (b).

b) The form and manner of the special notice. A non-CWS supplier granted permission by the Agency to exceed the nitrate MCL under Section 611.300(d) must provide continuous posting of the fact that nitrate levels exceed 10 mg/~~L~~ℓ and the potential health effects of exposure, according to the requirements for Tier 1 notice delivery under Section 611.902(c) and the content requirements under Section 611.905.

BOARD NOTE: Derived from 40 CFR 141.209~~ (2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.910 Notice by the Agency on Behalf of a PWS

a) The Agency may issue the notice required by this Subpart V on behalf of the owner and operator of the PWS supplier if the Agency complies with the requirements of this Subpart V.

b) The responsibility of the PWS supplier when notice is given by the Agency. The owner or operator of the PWS supplier remains responsible for ensuring that the requirements of this Subpart V are met.

BOARD NOTE: Derived from 40 CFR 141.210~~, as added at 65 Fed. Reg. 26039 (May 4, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

SUBPART ~~X—~~X: ENHANCED FILTRATION AND DISINFECTION-- SYSTEMS SERVING FEWER THAN 10,000 PEOPLE

Section 611.950 General Requirements

a) The requirements of this Subpart X constitute national primary drinking water regulations. These regulations establish requirements for filtration and disinfection that are in addition to criteria under which filtration and disinfection are required under Subpart B of this Part. The regulations in this Subpart X establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: Giardia lamblia, viruses, heterotrophic plate count bacteria, Legionella, Cryptosporidium, and turbidity. The treatment technique requirements consist of installing and properly operating water treatment processes that reliably achieve the following:

1) At least 99 percent (~~2 log~~2-log) removal of Cryptosporidium between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or Cryptosporidium control under the watershed control plan for unfiltered systems; and

2) Compliance with the profiling and benchmark requirements in Sections 611.953 and 611.954.

b) Applicability of the Subpart X requirements. A supplier is subject to these requirements if the following is true of its system:

1) Is a public water system;

2) Uses surface water or groundwater under the direct influence of surface water as a source; and

3) Serves fewer than 10,000 persons.

c) Compliance deadline. A supplier must comply with these requirements in this Subpart X beginning January 1, 2005, except where otherwise noted.

d) Subpart X requirements. There are seven requirements of this Subpart X, and a supplier must comply with all requirements that are applicable to its system. These requirements are the following:

1) The supplier must cover any finished water reservoir that the supplier began to construct on or after March 15, 2002, as described in Section 611.951;

2) If the supplier's system is an unfiltered system, the supplier must comply with the updated watershed control requirements described in Section 611.952;

3) If the supplier's system is a community or non-transient non-community water system the supplier must develop a disinfection profile, as described in Section 611.953;

4) If the supplier's system is considering making a significant change to its disinfection practices, the supplier must develop a disinfection benchmark and consult with the Agency for approval of the change, as described in Section 611.954;

5) If the supplier's system is a filtered system, the supplier must comply with the combined filter effluent requirements, as described in Section 611.955;

6) If the supplier's system is a filtered system that uses conventional or direct filtration, the supplier must comply with the individual filter turbidity requirements, as described in Section 611.956; and

7) The supplier must comply with the applicable reporting and recordkeeping requirements, as described in Section 611.957.

BOARD NOTE: Derived from 40 CFR 141.500 through 141.503 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.952 Additional Watershed Control Requirements for Unfiltered Systems

a) Applicability. A Subpart B system supplier that serves fewer than 10,000 persons ~~which~~ that does not provide filtration must continue to comply with all of the filtration avoidance criteria in Sections 611.211 and 611.230 through 611.233, as well as the additional watershed control requirements in subsection (b) of this Section.

b) Requirements to avoid filtration. A supplier must take any additional steps necessary to minimize the potential for contamination by Cryptosporidium oocysts in the source water. A watershed control program must fulfill the following for Cryptosporidium:

1) The program must identify watershed characteristics and activities that may have an adverse effect on source water quality; and

2) The program must monitor the occurrence of activities that may have an adverse effect on source water quality.

c) Determination of adequacy of control requirements. During an onsite inspection conducted under the provisions of Section 611.232(c), the Agency must determine whether a watershed control program is adequate to limit potential contamination by Cryptosporidium oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of the program to monitor and control detrimental activities occurring in the watershed; and the extent to which the supplier has maximized land ownership or controlled land use within the watershed.

BOARD NOTE: Derived from 40 CFR 141.520 through 141.522 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.953 Disinfection Profile

a) Applicability. A disinfection profile is a graphical representation of a system's level of Giardia lamblia or virus inactivation measured during the course of a year. A Subpart B community or non-transient non-community water system that serves fewer than 10,000 persons must develop a disinfection profile unless the Agency, by ~~an~~ a SEP issued pursuant to Section 611.110, determines that a profile is unnecessary. The Agency may approve the use of a more representative data set for disinfection profiling than the data set required under subsections (c) through (g) of this Section.

b) Determination that a disinfection profile is not necessary. The Agency may only determine that a disinfection profile is not necessary if the system's TTHM and HAA5 levels are below 0.064 mg/~~L~~ℓ and 0.048 mg/~~L~~ℓ, respectively. To determine these levels, TTHM and HAA5 samples must have been collected after January 1, 1998, during the month with the warmest water temperature, and at the point of maximum residence time in the distribution system.

c) Development of a disinfection profile. A disinfection profile consists of the following three steps:

  1) First, the supplier must collect data for several parameters from the plant, as discussed in subsection (d) of this Section, over the course of 12 months. If the supplier serves between 500 and 9,999 persons it must ~~begin~~ have begun to collect data no later than July 1, 2003. If the supplier serves fewer than 500 persons, it must begin to collect data no later than January 1, 2004.

  2) Second, the supplier must use this data to calculate weekly log inactivation as discussed in subsections (e) and (f) of this Section; and

  3) Third, the supplier must use these weekly log inactivations to develop a disinfection profile as specified in subsection (g) of this Section.

d) Data required for a disinfection profile. A supplier must monitor the following parameters to determine the total log inactivation using the analytical methods in Section 611.231, once per week on the same calendar day, over 12 consecutive months:

  1) The temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

  2) If a supplier uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

  3) The disinfectant contact times (“T”) during peak hourly flow; and

  4) The residual disinfectant concentrations (“C”) of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow.

e) Calculations based on the data collected. The supplier must calculate the total inactivation ratio as follows, and multiply the value by 3.0 to determine log inactivation of Giardia lamblia:

  1) If the supplier uses only one point of disinfectant application, it must determine either of the following:

    A) One inactivation ratio ($CT_{calc}/CT_{99.9}$) before or at the first customer during peak hourly flow~~,~~; or

B) Successive $CT_{calc}/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the supplier must calculate the total inactivation ratio by determining $CT_{calc}/CT_{99.9}$ for each sequence and then adding the $CT_{calc}/CT_{99.9}$ values together to determine $\sum CT_{calc}/CT_{99.9}$.

2) If the supplier uses more than one point of disinfectant application before the first customer, it must determine the $CT_{calc}/CT_{99.9}$ value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow using the procedure specified in subsection (e)(1)(B) of this Section.

f) Use of chloramines, ozone, or chlorine dioxide as a primary disinfectant. If a supplier uses chloramines, ozone, or chlorine dioxide for primary disinfection, the supplier must also calculate the logs of inactivation for viruses and develop an additional disinfection profile for viruses using methods approved by the Agency.

g) Development and maintenance of the disinfection profile in graphic form. Each log inactivation serves as a data point in the supplier's disinfection profile. A supplier will have obtained 52 measurements (one for every week of the year). This will allow the supplier and the Agency the opportunity to evaluate how microbial inactivation varied over the course of the year by looking at all 52 measurements (the supplier's disinfection profile). The supplier must retain the disinfection profile data in graphic form, such as a spreadsheet, which must be available for review by the Agency as part of a sanitary survey. The supplier must use this data to calculate a benchmark if the supplier is considering changes to disinfection practices.

BOARD NOTE: Derived from 40 CFR 141.530 through 141.536 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.954 Disinfection Benchmark

a) Applicability. A Subpart B system supplier that is required to develop a disinfection profile under Section 611.953 must develop a disinfection benchmark if it decides to make a significant change to its disinfection practice. The supplier must consult with the Agency for approval before it can implement a significant disinfection practice change.

b) Significant changes to disinfection practice. Significant changes to disinfection practice include the following:

1) Changes to the point of disinfection;

2) Changes to the disinfectants used in the treatment plant;

3) Changes to the disinfection process; or

4) Any other modification identified by the Agency.

c) Considering a significant change. A supplier that is considering a significant change to its disinfection practice must calculate disinfection benchmark, as described in subsections (d) and (e) of this Section, and provide the benchmarks to the Agency. A supplier may only make a significant disinfection practice change after consulting with the Agency for approval. A supplier must submit the following information to the Agency as part of the consultation and approval process:

1) A description of the proposed change;

2) The disinfection profile for Giardia lamblia (and, if necessary, viruses) and disinfection benchmark;

3) An analysis of how the proposed change will affect the current levels of disinfection; and

4) Any additional information requested by the Agency.

d) Calculation of a disinfection benchmark. A supplier that is making a significant change to its disinfection practice must calculate a disinfection benchmark using the following procedure:

1) Step 1: Using the data that the supplier collected to develop the disinfection profile, determine the average Giardia lamblia inactivation for each calendar month by dividing the sum of all Giardia lamblia inactivations for that month by the number of values calculated for that month; and

2) Step 2: Determine the lowest monthly average value out of the 12 values. This value becomes the disinfection benchmark.

e) If a supplier uses chloramines, ozone or chlorine dioxide for primary disinfection the supplier must calculate the disinfection benchmark from the data that the supplier collected for viruses to develop the disinfection profile in subsection (d) of this Section. This viral benchmark must be calculated in the same manner used to calculate the Giardia lamblia disinfection benchmark in subsection (d) of this Section.

BOARD NOTE: Derived 40 CFR 141.540 through 141.544 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.955 Combined Filter Effluent Turbidity Limits

a) Applicability. A Subpart B system supplier that serves fewer than 10,000 persons, which is required to filter, and which utilizes filtration other than slow sand filtration or diatomaceous earth filtration must meet the combined filter effluent turbidity requirements of subsections (b) through (d) of this Section . If the supplier uses slow sand or diatomaceous earth filtration the supplier is not required to meet the combined filter effluent turbidity limits of this Subpart X, but the supplier must continue to meet the combined filter effluent turbidity limits in Section 611.250.

b) Combined filter effluent turbidity limits. A supplier must meet two strengthened combined filter effluent turbidity limits.

1) The first combined filter effluent turbidity limit is a "95th percentile" turbidity limit that a supplier must meet in at least 95 percent of the turbidity measurements taken each month. Measurements must continue to be taken as described in Sections 611.231 and 233. Monthly reporting must be completed according to Section 611.957(a). The following are the required limits for specific filtration technologies:

A) For a system with conventional filtration or direct filtration, the 95th percentile turbidity value is 0.3 NTU.

B) For a system with any other alternative filter technology, the 95th percentile turbidity value is a value (not to exceed 1 NTU) to be determined by the Agency, by ~~an~~ a SEP issued pursuant to Section 611.110, based on the demonstration described in subsection (c) of this Section.

2) The second combined filter effluent turbidity limit is a "maximum" turbidity limit ~~which~~ that a supplier may at no time exceed during the month. Measurements must continue to be taken as described in Sections 611.231 and ~~233~~ 611.233. Monthly reporting must be completed according to Section 611.957(a). The following are the required limits for specific filtration technologies:

A) For a system with conventional filtration or direct filtration, the maximum turbidity value is 1 NTU.

B) For a system with any other alternative filter technology, the maximum turbidity value is a value (not to exceed 5 NTU) to be determined by the Agency, by ~~an~~ a SEP issued pursuant to Section 611.110, based on the demonstration described in subsection (c) of this Section.

c) Requirements for an alternative filtration system.

1) If a supplier's system consists of alternative ~~filtration(filtration~~ filtration (filtration other than slow sand filtration, diatomaceous earth filtration, conventional filtration, or direct filtration) the supplier is required to conduct a demonstration (see tables in subsection (b) of this Section). The supplier must demonstrate to the Agency, using pilot plant studies or other means, that its system's filtration, in combination with disinfection treatment, consistently achieves the following:

A) 99 percent removal of Cryptosporidium oocysts;

B) 99.9 percent removal ~~and/~~or inactivation of Giardia lamblia cysts; and

C) 99.99 percent removal ~~and/~~or inactivation of viruses.

2) This subsection (c)(2) corresponds with 40 CFR 141.552(b), which USEPA has designated as "reserved." This statement maintains structural correspondence with the corresponding federal regulation.

d) Requirements for a lime-softening system. If a supplier practices lime softening, the supplier may acidify representative combined filter effluent turbidity samples prior to analysis using a protocol approved by the Agency.

BOARD NOTE: Derived from 40 CFR 141.550 through 141.553 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.956 Individual Filter Turbidity Requirements

a) Applicability. A Subpart B system supplier that serves fewer than 10,000 persons and utilizing conventional filtration or direct filtration must conduct continuous monitoring of turbidity for each individual filter in a supplier's system. The following requirements apply to continuous turbidity monitoring:

1) Monitoring must be conducted using an approved method in Section 611.231;

2) Calibration of turbidimeters must be conducted using procedures specified by the manufacturer;

3) Results of turbidity monitoring must be recorded at least every 15 minutes;

4) Monthly reporting must be completed according to Section 611.957(a); and

5) Records must be maintained according to Section 611.957(b).

b) Failure of turbidity monitoring equipment. If there is a failure in the continuous turbidity monitoring equipment, the supplier must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is back on-line. The supplier has 14 days to resume continuous monitoring before a violation is incurred.

c) Special requirements for systems with two or fewer filters. If a supplier's system only consists of two or fewer filters, the supplier may conduct continuous monitoring of combined filter effluent turbidity in lieu of individual filter effluent turbidity monitoring. Continuous monitoring must meet the same requirements set forth in subsections (a)(1) through (a)(4) and (b) of this Section.

d) Follow-up action. Follow-up action is required according to the following requirements:

1) If the turbidity of an individual filter (or the turbidity of combined filter effluent (CFE) for a system with two filters that monitor CFE in lieu of individual filters) exceeds 1.0 NTU in two consecutive recordings 15 minutes apart, the supplier must report to the Agency by the 10th of the following month and include the filter numbers, corresponding dates, turbidity values ~~which~~ that exceeded 1.0 NTU, and the cause (if known) for the exceedences.

2) If a supplier was required to report to the Agency for three months in a row and turbidity exceeded 1.0 NTU in two consecutive recordings 15 minutes apart at the same filter (or CFE for systems with two filters that monitor CFE in lieu of individual filters), the supplier must conduct a self-assessment of the filters within 14 days of the day on which the filter exceeded 1.0 NTU in two consecutive measurements for the third straight month, unless a CPE, as specified in subsection (d)(3) of this Section, was required. A supplier that has a system with two filters ~~which~~ that monitor CFE in lieu of individual filters must conduct a self assessment on both filters. The self-assessment must consist of at least the following components: assessment of filter performance, development of a filter profile, identification and prioritization of factors limiting filter performance, assessment of the applicability of corrections, and preparation of a filter self-assessment report. If a self-assessment is

required, the date that it was triggered and the date that it was completed.

3) If a supplier was required to report to the Agency for two months in a row and turbidity exceeded 2.0 NTU in two consecutive recordings 15 minutes apart at the same filter (or CFE for systems with two filters that monitor CFE in lieu of individual filters), the supplier must arrange to have a comprehensive performance evaluation (CPE) conducted by the Agency or a third party approved by the Agency not later than 60 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month. If a CPE has been completed by the Agency or a third party approved by the Agency within the 12 prior months or the system and Agency are jointly participating in an ongoing comprehensive technical assistance (CTA) project at the system, a new CPE is not required. If conducted, a CPE must be completed and submitted to the Agency no later than 120 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.

e) Special individual filter monitoring for a lime-softening system. If a supplier's system utilizes lime softening, the supplier may apply to the Agency for alternative turbidity exceedence levels for the levels specified in subsection (d) of this Section. The supplier must be able to demonstrate to the Agency that higher turbidity levels are due to lime carryover only, and not due to degraded filter performance.

BOARD NOTE: Derived from 40 CFR 141.560 through 141.564 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.957 Reporting and Recordkeeping Requirements

a) Reporting. This Subpart X requires a supplier to report several items to the Agency. Subsections (a)(1) through (a)(4) of this Section describe the items that must be reported and the frequency of reporting. (The supplier is required to report the information described in subsections (a)(1) through (a)(4) of this Section, if it is subject to the specific requirement indicated.)

1) If a supplier is subject to the combined filter effluent requirements (Section 611.955), it must report as follows:

A) The total number of filtered water turbidity measurements taken during the month, by the 10th of the following month.

B) The number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the supplier's required 95th percentile limit, by the 10th of the following month.

C) The date and value of any turbidity measurements taken during the month that exceed the maximum turbidity value for the supplier's filtration system, by the 10th of the following month.

2) If the supplier is subject to the individual filter turbidity requirements (Section 611.956), it must report as follows:

A) The fact that the supplier's system conducted individual filter turbidity monitoring during the month, by the 10th of the following month.

B) The filter numbers, corresponding dates, and the turbidity values that exceeded 1.0 NTU during the month, by the 10th of the following month, but only if two consecutive measurements exceeded 1.0 NTU.

C) If a self-assessment is required, the date that it was triggered and the date that it was completed, by the 10th of the following month (or 14 days after the self-assessment was triggered only if the self-assessment was triggered during the last four days of the month).

D) If a CPE is required, the fact that the CPE is required and the date that it was triggered, by the 10th of the following month.

E) A copy of completed CPE report, within 120 days after the CPE was triggered.

3) If the supplier is subject to the disinfection profiling (Section 611.953), it must report results of optional monitoring that show TTHM levels 0.064 mg/~~L~~ℓ and HAA5 levels 0.048 mg/~~L~~ℓ (only if the supplier wishes to forgo profiling) or that the supplier has begun disinfection profiling, as follows:

A) For a supplier that serves 500-9,999 persons~~, by July 1, 2003~~; or

B) For a supplier that serves fewer than 500 persons, by January 1, 2004.

4) If the supplier is subject to the disinfection benchmarking (Section 611.954), it must report a description of the proposed change in disinfection, its system's disinfection profile for Giardia lamblia (and, if necessary, viruses) and disinfection benchmark, and an analysis of how the proposed change will affect the current levels of disinfection, anytime the supplier is considering a significant change to its disinfection practice.

b) Recordkeeping. A supplier must keep several types of records based on the requirements of this Subpart X, in addition to recordkeeping requirements under Sections 611.261 and 611.262. Subsections (b)(1) through (b)(3) describe the necessary records, the length of time these records must be kept, and for which requirement the records pertain. (The supplier is required to maintain records described in subsections (b)(1) through (b)(3) of this Section, if it is subject to the specific requirement indicated.)

1) If the supplier is subject to the individual filter turbidity requirements (Section 611.956), it must retain the results of individual filter monitoring as necessary records for at least three years.

2) If the supplier is subject to disinfection profiling (Section 611.953), it must retain the results of its disinfection profile (including raw data and analysis) as necessary records indefinitely.

3) If the supplier is subject to disinfection benchmarking (Section 611.954), it must retain its disinfection benchmark (including raw data and analysis) as necessary records indefinitely.

BOARD NOTE: Derived from 40 CFR 141.570 and 141.571 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Appendix A Regulated Contaminants

Microbiological contaminants~~:~~.

Contaminant (units): Total Coliform Bacteria
Traditional MCL in mg/~~L~~ℓ: MCL: (a supplier that collects ≥40 or more samples/month) ~~fewer than 5%~~ five percent or fewer of monthly samples are positive; (systems that collect ~~<~~ fewer than 40 samples/month) ~~fewer than 1~~ one or fewer positive monthly ~~sample~~ samples.
To convert for CCR, multiply by: --
MCL in CCR units: MCL: (a supplier that collects≥40 or more samples/month) ~~fewer than 5%~~ five percent or fewer of monthly samples are positive; (a supplier that collects ~~<~~ fewer than 40 samples/month) ~~fewer than 1~~ one or fewer positive monthly sample.
MCLG: 0
Major sources in drinking water: Naturally present in the environment.
Health effects language: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Contaminant (units): Fecal coliform and E. coli
Traditional MCL in mg/~~L~~ℓ: 0

To convert for CCR, multiply by: --
MCL in CCR units: 0
MCLG: 0
Major sources in drinking water: Human and animal fecal waste.
Health effects language: Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Contaminant (units): Total organic carbon (ppm)
Traditional MCL in mg/~~L~~ℓ: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: N/A
Major sources in drinking water: Naturally present in the environment.
Health effects language: Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

Contaminant (units): Turbidity (NTU)
Traditional MCL in mg/~~L~~ℓ: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: N/A
Major sources in drinking water: Soil runoff.
Health effects language: Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Radioactive contaminants~~:~~.

Contaminant (units): Beta/photon emitters (mrem/yr)
Traditional MCL in mg/~~L~~ℓ: 4 mrem/yr
To convert for CCR, multiply by: --
MCL in CCR units: 4
MCLG: 0
Major sources in drinking water: Decay of natural and man-made deposits.
Health effects language: Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water

containing beta particle and photon radioactivity in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Alpha emitters (pCi/~~L~~ℓ)
Traditional MCL in mg/~~L~~ℓ: 15 pCi/~~L~~ℓ
To convert for CCR, multiply by: --
MCL in CCR units: 15
MCLG: 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Combined radium (pCi/~~L~~ℓ)
Traditional MCL in mg/~~L~~ℓ: 5 pCi/~~L~~ℓ
To convert for CCR, multiply by: --
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Some people who drink water containing radium-226 or -228 in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Uranium (μg/~~L~~ℓ)
Traditional MCL in mg/~~L~~ℓ: 30 μg/~~L~~ℓ
To convert for CCR, multiply by: --
MCL in CCR units: 30
MCLG: 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

Inorganic contaminants~~:~~.

Contaminant (units): Antimony (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.006
To convert for CCR, multiply by: 1000
MCL in CCR units: 6
MCLG: 6
Major sources in drinking water: Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Health effects language: Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

Contaminant (units): Arsenic (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.05 until January 23, 2006 or 0.01 effective January 23, 2006
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 0 (effective January 26, 2006)
Major sources in drinking water: Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Health effects language: Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Contaminant (units): Asbestos (MFL)
Traditional MCL in mg/~~L~~ℓ: 7 MFL
To convert for CCR, multiply by: --
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Decay of asbestos cement water mains; erosion of natural deposits.
Health effects language: Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

Contaminant (units): Barium (ppm)
Traditional MCL in mg/~~L~~ℓ: 2
To convert for CCR, multiply by: --
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Health effects language: Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Contaminant (units): Beryllium (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.004
To convert for CCR, multiply by: 1000
MCL in CCR units: 4
MCLG: 4
Major sources in drinking water: Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Health effects language: Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

Contaminant (units): Bromate (ppb)
Traditional MCL in mg/ℓ: 0.010
To convert for CCR, multiply by: 1000

MCL in CCR units: 10
MCLG: 0
Major sources in drinking water: By-product of drinking water disinfection.
Health effects language: Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Cadmium (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 5
Major sources in drinking water: Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Health effects language: Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

Contaminant (units): Chloramines (ppm)
Traditional MCL in mg/ℓ: MRDL=4
To convert for CCR, multiply by: --
MCL in CCR units: MRDL=4
MCLG: MRDLG=4
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some people who drink water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.

Contaminant (units): Chlorine (ppm)
Traditional MCL in mg/ℓ: MRDL=4
To convert for CCR, multiply by: --
MCL in CCR units: MRDL=4
MCLG: MRDLG=4
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some people who drink water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

Contaminant (units): Chlorine dioxide (ppb)
Traditional MCL in mg/ℓ: MRDL=800
To convert for CCR, multiply by: 1000
MCL in CCR units: MRDL=800
MCLG: MRDLG=800
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some infants and young children who drink water containing chlorine dioxide well in excess of the MRDL could experience nervous system

effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

Contaminant (units): Chlorite (ppm)
Traditional MCL in mg/ℓ: MRDL=1
To convert for CCR, multiply by: --
MCL in CCR units: MRDL=1
MCLG: MRDLG=0.8
Major sources in drinking water: By-product of drinking water disinfection.
Health effects language: Some infants and young children who drink water containing chlorite well in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.

Contaminant (units): Chromium (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from steel and pulp mills; erosion of natural deposits.
Health effects language: Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

Contaminant (units): Copper (ppm)
Traditional MCL in mg/~~L~~ℓ: AL=1.3
To convert for CCR, multiply by: --
MCL in CCR units: AL=1.3
MCLG: 1.3
Major sources in drinking water: Corrosion of household plumbing systems; erosion of natural deposits~~; leaching from wood preservatives~~.
Health effects language: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Contaminant (units): Cyanide (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Discharge from steel/metal factories; discharge from plastic and fertilizer factories.

Health effects language: Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

Contaminant (units): Fluoride (ppm)
Traditional MCL in mg/~~L~~ℓ: 4
To convert for CCR, multiply by: --
MCL in CCR units: 4
MCLG: 4
Major sources in drinking water: Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Health effects language: Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining ~~and/~~or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

Contaminant (units): Lead (ppb)
Traditional MCL in mg/~~L~~ℓ: AL=0.015
To convert for CCR, multiply by: 1000
MCL in CCR units: AL=15
MCLG: 0
Major sources in drinking water: Corrosion of household plumbing systems; erosion of natural deposits.
Health effects language: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Contaminant (units): Mercury (inorganic) (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Health effects language: Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

Contaminant (units): Nitrate (ppm)
Traditional MCL in mg/~~L~~ℓ: 10
To convert for CCR, multiply by: --
MCL in CCR units: 10
MCLG: 10

Major sources in drinking water: Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Health effects language: Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant (units): Nitrite (ppm)
Traditional MCL in mg/~~L~~ℓ: 1
To convert for CCR, multiply by: --
MCL in CCR units: 1
MCLG: 1
Major sources in drinking water: Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Health effects language: Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant (units): Selenium (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Health effects language: Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

Contaminant (units): Thallium (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0.5
Major sources in drinking water: Leaching from ore-processing sites; discharge from electronics, glass, and drug factories.
Health effects language: Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

Synthetic organic contaminants including pesticides and herbicides~~:~~.

Contaminant (units): 2,4-D (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70

MCLG: 70
Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

Contaminant (units): 2,4,5-TP (silvex) (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Residue of banned herbicide.
Health effects language: Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

Contaminant (units): Acrylamide
Traditional MCL in mg/~~L~~ℓ: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: 0
Major sources in drinking water: Added to water during sewage/wastewater treatment.
Health effects language: Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.

Contaminant (units): Alachlor (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

Contaminant (units): Atrazine (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.003
To convert for CCR, multiply by: 1000
MCL in CCR units: 3
MCLG: 3
Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

Contaminant (units): Benzo(a)pyrene (PAH) (nanograms/~~L~~ℓ)

Traditional MCL in mg/~~L~~ℓ: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Leaching from linings of water storage tanks and distribution lines.
Health effects language: Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

Contaminant (units): Carbofuran (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.04
To convert for CCR, multiply by: 1000
MCL in CCR units: 40
MCLG: 40
Major sources in drinking water: Leaching of soil fumigant used on rice and alfalfa.
Health effects language: Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.

Contaminant (units): Chlordane (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Residue of banned termiticide.
Health effects language: Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.

Contaminant (units): Dalapon (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff from herbicide used on rights of way.
Health effects language: Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

Contaminant (units): Di(2-ethylhexyl)adipate (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.4
To convert for CCR, multiply by: 1000
MCL in CCR units: 400
MCLG: 400
Major sources in drinking water: Discharge from chemical factories.
Health effects language: Some people who drink water containing di(2-

ethylhexyl)adipate well in excess of the MCL over many years could experience ~~general~~ toxic effects, such as weight loss, liver enlargement, or possible reproductive difficulties.

Contaminant (units): Di(2-ethylhexyl)phthalate (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.006
To convert for CCR, multiply by: 1000
MCL in CCR units: 6
MCLG: 0
Major sources in drinking water: Discharge from rubber and chemical factories.
Health effects language: Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver~~,~~ or experience reproductive difficulties, and they may have an increased risk of getting cancer.

Contaminant (units): Dibromochloropropane (DBCP) (ppt)
Traditional MCL in mg/~~L~~ℓ: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Health effects language: Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.

Contaminant (units): Dinoseb (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.007
To convert for CCR, multiply by: 1000
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Runoff from herbicide used on soybeans and vegetables.
Health effects language: Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

Contaminant (units): Diquat (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.02
To convert for CCR, multiply by: 1000
MCL in CCR units: 20
MCLG: 20
Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

Contaminant (units): Dioxin (2,3,7,8-TCDD) (ppq)

Traditional MCL in mg/~~L~~ℓ: 0.00000003
To convert for CCR, multiply by: 1,000,000,000
MCL in CCR units: 30
MCLG: 0
Major sources in drinking water: Emissions from waste incineration and other combustion; discharge from chemical factories.
Health effects language: Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

Contaminant (units): Endothall (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.

Contaminant (units): Endrin (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Residue of banned insecticide.
Health effects language: Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

Contaminant (units): Epichlorohydrin
Traditional MCL in mg/~~L~~ℓ: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories; an impurity of some water treatment chemicals.
Health effects language: Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

Contaminant (units): Ethylene dibromide (ppt)
Traditional MCL in mg/~~L~~ℓ: 0.00005
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 50
MCLG: 0
Major sources in drinking water: Discharge from petroleum refineries.

Health effects language: Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.

Contaminant (units): Glyphosate (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.7
To convert for CCR, multiply by: 1000
MCL in CCR units: 700
MCLG: 700
Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

Contaminant (units): Heptachlor (ppt)
Traditional MCL in mg/~~L~~ℓ: 0.0004
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 400
MCLG: 0
Major sources in drinking water: Residue of banned pesticide.
Health effects language: Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

Contaminant (units): Heptachlor epoxide (ppt)
Traditional MCL in mg/~~L~~ℓ: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Breakdown of heptachlor.
Health effects language: Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

Contaminant (units): Hexachlorobenzene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.001
To convert for CCR, multiply by: 1000
MCL in CCR units: 1
MCLG: 0
Major sources in drinking water: Discharge from metal refineries and agricultural chemical factories.
Health effects language: Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.

Contaminant (units): Hexachlorocyclopentadiene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Discharge from chemical factories.
Health effects language: Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.

Contaminant (units): Lindane (ppt)
Traditional MCL in mg/~~L~~ℓ: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff/leaching from insecticide used on cattle, lumber, gardens.
Health effects language: Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

Contaminant (units): Methoxychlor (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.04
To convert for CCR, multiply by: 1000
MCL in CCR units: 40
MCLG: 40
Major sources in drinking water: Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.
Health effects language: Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

Contaminant (units): Oxamyl (vydate) (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff/leaching from insecticide used on apples, potatoes and tomatoes.
Health effects language: Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

Contaminant (units): PCBs (polychlorinated biphenyls) (ppt)
Traditional MCL in mg/~~L~~ℓ: 0.0005
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 500
MCLG: 0

Major sources in drinking water: Runoff from landfills; discharge of waste chemicals.
Health effects language: Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

Contaminant (units): Pentachlorophenol (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.001
To convert for CCR, multiply by: 1000
MCL in CCR units: 1
MCLG: 0
Major sources in drinking water: Discharge from wood preserving factories.
Health effects language: Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.

Contaminant (units): Picloram (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.5
To convert for CCR, multiply by: 1000
MCL in CCR units: 500
MCLG: 500
Major sources in drinking water: Herbicide runoff.
Health effects language: Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): Simazine (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.004
To convert for CCR, multiply by: 1000
MCL in CCR units: 4
MCLG: 4
Major sources in drinking water: Herbicide runoff.
Health effects language: Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

Contaminant (units): Toxaphene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.003
To convert for CCR, multiply by: 1000
MCL in CCR units: 3
MCLG: 0
Major sources in drinking water: Runoff/leaching from insecticide used on cotton and cattle.
Health effects language: Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

Volatile organic contaminants~~:~~.

Contaminant (units): Benzene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from factories; leaching from gas storage tanks and landfills.
Health effects language: Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

~~Contaminant (units): Bromate (ppb)~~
~~Traditional MCL in mg/L: 0.010~~
~~To convert for CCR, multiply by: 1000~~
~~MCL in CCR units: 10~~
~~MCLG: 0~~
~~Major sources in drinking water: Byproduct of drinking water chlorination.~~
~~Health effects language: Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.~~

Contaminant (units): Carbon tetrachloride (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from chemical plants and other industrial activities.
Health effects language: Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

~~Contaminant (units): Chloramines (ppm)~~
~~Traditional MCL in mg/L: MRDL = 4~~
~~To convert for CCR, multiply by: --~~
~~MCL in CCR units: MRDL = 4~~
~~MCLG: MRDLG = 4~~
~~Major sources in drinking water: Water additive used to control microbes.~~
~~Health effects language: Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.~~

~~Contaminant (units): Chlorine (ppm)~~
~~Traditional MCL in mg/L: MRDL = 4~~

~~To convert for CCR, multiply by: --~~
~~MCL in CCR units: MRDL = 4~~
~~MCLG: MRDLG = 4~~
~~Major sources in drinking water: Water additive used to control microbes.~~
~~Health effects language: Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.~~

~~Contaminant (units): Chlorite (ppm)~~
~~Traditional MCL in mg/L: 1~~
~~To convert for CCR, multiply by: --~~
~~MCL in CCR units: 1~~
~~MCLG: 0.8~~
~~Major sources in drinking water: Byproduct of drinking water chlorination.~~
~~Health effects language: Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.~~

~~Contaminant (units): Chlorine dioxide (ppb)~~
~~Traditional MCL in mg/L: MRDL = 0.8~~
~~To convert for CCR, multiply by: 1000~~
~~MCL in CCR units: MRDL = 800~~
~~MCLG: MRDLG = 800~~
~~Major sources in drinking water: Water additive used to control microbes.~~
~~Health effects language: Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.~~

Contaminant (units): Chlorobenzene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from chemical and agricultural chemical factories.
Health effects language: Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

Contaminant (units): o-Dichlorobenzene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.6
To convert for CCR, multiply by: 1000

MCL in CCR units: 600
MCLG: 600
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

Contaminant (units): p-Dichlorobenzene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.075
To convert for CCR, multiply by: 1000
MCL in CCR units: 75
MCLG: 75
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia~~,~~; damage to their liver, kidneys, or spleen~~,~~; or changes in their blood.

Contaminant (units): 1,2-Dichloroethane (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): 1,1-Dichloroethylene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.007
To convert for CCR, multiply by: 1000
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): cis-1,2-Dichloroethylene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70
MCLG: 70
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): trans-1,2-Dichloroethylene (ppb)

Traditional MCL in mg/~~L~~ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): Dichloromethane (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from pharmaceutical and chemical factories.
Health effects language: Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

Contaminant (units): 1,2-Dichloropropane (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Ethylbenzene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.7
To convert for CCR, multiply by: 1000
MCL in CCR units: 700
MCLG: 700
Major sources in drinking water: Discharge from petroleum refineries.
Health effects language: Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

Contaminant (units): Haloacetic acids (HAA5) (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.060
To convert for CCR, multiply by: 1000
MCL in CCR units: 60
MCLG: N/A
Major sources in drinking water: Byproduct of drinking water disinfection.
Health effects language: Some people who drink water containing haloacetic acids in

excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Styrene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from rubber and plastic factories; leaching from landfills.
Health effects language: Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

Contaminant (units): Tetrachloroethylene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from factories and dry cleaners.
Health effects language: Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.

Contaminant (units): 1,2,4-Trichlorobenzene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70
MCLG: 70
Major sources in drinking water: Discharge from textile-finishing factories.
Health effects language: Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

Contaminant (units): 1,1,1-Trichloroethane (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Discharge from metal degreasing sites and other factories.
Health effects language: Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

Contaminant (units): 1,1,2-Trichloroethane (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005

To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 3
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

Contaminant (units): Trichloroethylene (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from metal degreasing sites and other factories.
Health effects language: Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Contaminant (units): TTHMs (total trihalomethanes) (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.10/0.080
To convert for CCR, multiply by: 1000
MCL in CCR units: 100/80
MCLG: N/A
Major sources in drinking water: Byproduct of drinking water ~~chlorination~~ disinfection.
Health effects language: Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Contaminant (units): Toluene (ppm)
Traditional MCL in mg/~~L~~ℓ: 1
To convert for CCR, multiply by: --
MCL in CCR units: 1
MCLG: 1
Major sources in drinking water: Discharge from petroleum factories.
Health effects language: Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

Contaminant (units): Vinyl Chloride (ppb)
Traditional MCL in mg/~~L~~ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Leaching from PVC piping; discharge from plastics

factories.

Health effects language: Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Xylenes (ppm)
Traditional MCL in mg/~~L~~ℓ: 10
To convert for CCR, multiply by: --
MCL in CCR units: 10
MCLG: 10
Major sources in drinking water: Discharge from petroleum factories; discharge from chemical factories.
Health effects language: Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

Key~~:~~.

Abbreviation	Meaning
AL	action level
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MFL	million fibers per liter
MRDL	maximum residual disinfectant level
MRDLG	maximum residual disinfectant level goal
mrem/year	millirems per year (a measure of radiation absorbed by the body)
N/A	not applicable
NTU	nephelometric turbidity units(a measure of water clarity)
pCi/~~L~~ℓ	picocuries per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/~~L~~ℓ)
ppb	parts per billion, or micrograms per liter (μg/~~L~~ℓ)
ppt	parts per trillion, or nanograms per liter
ppq	parts per quadrillion, or picograms per liter
TT	treatment technique

BOARD NOTE: Derived from Appendix A to Subpart O to 40 CFR 141 ~~(2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001), 66 Fed. Reg. 16134 (March 23, 2001), and 66 Fed. Reg. 28342 (May 22, 2001)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Appendix B Percent Inactivation of G. Lamblia Cysts

~~TABLE~~ Table 1.1
CT-99.9 ~~FOR~~ for 99.9 ~~PERCENT INACTIVATION OF GIARDIA LAMBLIA~~
~~CYSTS BY FREE CHLORINE AT~~ Percent Inactivation of Giardia Lamblia Cysts
by Free Chlorine at 0.5° ~~DEGREES~~ C ~~OR LOWER~~ or Lower

These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT 99.9 value at the lower temperature and at the higher pH.

Free Residual	PH						
(mg/~~L~~ℓ)	≤6.0	6.5	7.0	7.5	8.0	8.5	≥9.0
≤0.41	137	163	195	237	277	329	390
0.6	141	168	200	239	286	342	407
0.8	145	172	205	246	295	354	422
1.0	148	176	210	253	304	365	437
1.2	152	180	215	259	313	376	451
1.4	155	184	221	266	321	387	464
1.6	157	189	226	273	329	397	477
1.8	162	193	231	279	338	407	489
2.0	165	197	236	286	346	417	500
2.2	169	201	242	297	353	426	511
2.4	172	205	247	298	361	435	522
2.6	175	209	252	304	368	444	533
2.8	178	213	257	310	375	452	543
3.0	181	217	261	316	382	460	552

~~TABLE~~ Table 1.2
CT-99.9 ~~FOR~~ for 99.9 ~~PERCENT INACTIVATION OF GIARDIA LAMBLIA~~
~~CYSTS BY FREE CHLORINE AT~~ Percent Inactivation of Giardia Lamblia Cysts
by Free Chlorine at 5.0° ~~DEGREES~~ C

These CT values achieve greater than a 99.99 percent inctivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT 99.9 value at the lower temperature and at the higher pH.

Free Residual	PH						
(mg/~~L~~ℓ)	≤6.0	6.5	7.0	7.5	8.0	8.5	≥9.0
≤0.4	97	117	139	166	198	236	279
0.6	100	120	143	171	204	244	291
0.8	103	122	146	175	210	252	301
1.0	105	125	149	179	216	260	312
1.2	107	127	152	183	221	267	320

1.4	109	130	155	187	227	274	329
1.6	111	132	158	192	232	281	337
1.8	114	135	162	196	238	287	345
2.0	116	138	165	200	243	294	353
2.2	118	140	169	204	248	300	361
2.4	120	143	172	209	253	306	368
2.6	122	146	175	213	258	312	375
2.8	124	148	178	217	263	318	382
3.0	126	151	182	221	268	324	369

~~TABLE~~ Table 1.3
CT-99.9 ~~FOR~~ for 99.9 ~~PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT~~ Percent Inactivation of Giardia Lamblia Cysts by Free Chlorine at 10.0° ~~DEGREES~~ C

These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT 99.9 value at the lower temperature and at the higher pH.

Free Residual	PH						
(mg/~~L~~ℓ)	≤6.0	6.5	7.0	7.5	8.0	8.5	≥9.0
≤0.4	73	88	104	125	149	177	209
0.6	75	90	107	128	153	183	218
0.8	78	92	110	131	158	189	226
1.0	79	94	112	134	162	195	234
1.2	80	95	114	137	166	200	240
1.4	82	98	116	140	170	206	247
1.6	83	99	119	144	174	211	253
1.8	86	101	122	147	179	215	259
2.0	87	104	124	150	182	221	265
2.2	89	105	127	153	186	225	271
2.4	90	107	129	157	190	230	276
2.6	92	110	131	160	194	234	281
2.8	93	111	134	163	197	239	287
3.0	95	113	137	166	201	243	292

~~TABLE~~ Table 1.4
CT-99.9 ~~FOR~~ for 99.9 ~~PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT~~ Percent Inactivation of Giardia Lamblia Cysts by Free Chlorine at 15.0° ~~DEGREES~~ C

These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT 99.9 value at the lower temperature and at the higher pH.

Free Residual	PH						
(mg/~~L~~ℓ)	≤6.0	6.5	7.0	7.5	8.0	8.5	≥9.0
≤0.4	49	59	70	83	99	118	140
0.6	50	60	72	86	102	122	146
0.8	52	61	73	88	105	126	151
1.0	53	63	75	90	108	130	156
1.2	54	64	76	92	111	134	160
1.4	55	65	78	94	114	137	165
1.6	56	66	79	96	116	141	169
1.8	57	68	81	98	119	144	173
2.0	58	69	83	100	122	147	177
2.2	59	70	85	102	124	150	181
2.4	60	72	86	105	127	153	184
2.6	61	73	88	107	129	156	188
2.8	62	74	89	109	132	159	191
3.0	63	76	91	111	134	162	195

~~TABLE~~ Table 1.5
CT-99.9 ~~FOR~~ for 99.9 ~~PERCENT INACTIVATION OF GIARDIA LAMBLIA~~
~~CYSTS BY FREE CHLORINE AT~~ Percent Inactivation of Giardia Lamblia Cysts
by Free Chlorine at 20° ~~DEGREES~~ C

These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT 99.9 value at the lower temperature and at the higher pH.

Free Residual	PH						
(mg/~~L~~ℓ)	≤6.0	6.5	7.0	7.5	8.0	8.5	≥9.0
≤0.4	36	44	52	62	74	89	105
0.6	38	45	54	64	77	92	109
0.8	39	46	55	66	79	95	113
1.0	39	47	56	67	81	98	117
1.2	40	48	57	69	83	100	120
1.4	41	49	58	70	85	103	123
1.6	42	50	59	72	87	105	126
1.8	43	51	61	74	89	108	129
2.0	44	52	62	75	91	110	132
2.2	44	53	63	77	93	113	135
2.4	45	54	65	78	95	115	138
2.6	46	55	66	80	97	117	141
2.8	47	56	67	81	99	119	143
3.0	47	57	68	83	101	122	146

~~TABLE~~ Table 1.6
CT-99.9 ~~FOR~~ for 99.9 ~~PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT~~ Percent Inactivation of Giardia Lamblia Cysts by Free Chlorine at 25° ~~DEGREES~~ C ~~AND HIGHER~~ and Higher

These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT 99.9 value at the lower temperature and at the higher pH.

Free Residual	PH						
(mg/~~L~~ℓ)	≤6.0	6.5	7.0	7.5	8.0	8.5	≥9.0
≤0.4	24	29	35	42	50	59	70
0.6	25	30	36	43	51	61	73
0.8	26	31	37	44	53	63	75
1.0	26	31	37	45	54	65	78
1.2	27	32	38	46	55	67	80
1.4	27	33	39	47	57	69	82
1.6	28	33	40	48	58	70	84
1.8	29	34	41	49	60	72	86
2.0	29	35	41	50	61	74	88
2.2	30	35	42	51	62	75	90
2.4	30	36	43	52	63	77	92
2.6	31	37	44	53	65	78	94
2.8	31	37	45	54	66	80	96
3.0	32	38	46	55	67	81	97

~~TABLE~~ Table 2.1
CT-99.9 ~~FOR~~ for 99.9 ~~PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY CHLORINE DIOXIDE AND OZONE~~Percent Inactivation of Giardia Lamblia Cysts by Chlorine Dioxide and Ozone

These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature for determining $CT_{99.9}$ values between indicated temperatures.

	≤1°C	5°C	10°C	15°C	20°C	≥25° C
Chlorine dioxide	63	26	23	19	15	11
Ozone	2.9	1.9	1.4	0.95	0.72	0.48

~~TABLE~~ Table 3.1
CT-99.9 ~~FOR~~ for 99.9 ~~PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY CHLORAMINES~~ Percent Inactivation of Giardia Lamblia Cysts by Chloramines

These values are for pH values of 6 to 9. These CT values may be assumed to achieve greater than a 99.99 percent inactivation of viruses only if chlorine is added and mixed in the water prior to the addition of ammonia. If this condition is not met, the system must demonstrate, based on on-site studies or other information, as approved by the Agency, that the system is achieving at least a 99.99 percent inactivation of viruses. CT values between the indicated temperatures may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature for determining $CT_{99.9}$ values between indicated temperatures.

	≤1°C	5°C	10°C	15°C	20°C	≥25°C
Chloramines	3800	2200	1850	1500	1100	750

BOARD NOTE: Derived from 40 CFR 141.74(b) Tables 1.1 through 3.1 ~~(1995)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Appendix C Common Names of Organic Chemicals

The following common names are used for certain organic chemicals:

Common Name	CAS No.	CAS Name
Aldrin	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha, 4alpha, 4abeta, 5alpha, 8alpha, 8abeta)-
Bromoform	75-25-2	Methane, tribromo-
Chlordane	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
Chloroform	67-66-3	Methane, trichloro-
2,4-D	94-75-7	Acetic acid, 2,4-dichlorophenoxy-
DDT	50-29-3	Benzene, 1,1'-(2, 2, 2-trichloroethylidene) bis~~[~~(4-chloro-
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth~~[~~(2,3-b~~]~~)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha, 2beta, 2aalpha, 3beta, 6beta, 6aalpha, 7beta, 7aalpha)-
Endrin	72-20-8	2,7:3,6-Dimethanonaphth~~[~~(2,3-b~~]~~)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-,

		(1aalpha, 2beta, 2abeta, 3alpha, 6alpha, 6abeta, 7beta, 7aalpha)-,
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
Heptachlor epoxide	1024-57-3	2, 5-Methano-2H-indeno~~[~~(1, 2b~~]~~)oxirene, 2, 3, 4, 5, 6, 7, 7-heptachloro-1a, 1b, 5, 5a, 6, 6a-hexahydro-, (1a alpha, 1b beta, 2 alpha, 5 alpha, 5a beta, 6beta, 6a alpha)-
Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1 alpha,2 alpha,3 beta,4 alpha,5 alpha,6 beta)-
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis~~[~~(4-methoxy-
Silvex (2,4,5-TP)	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
Toxaphene	8001-35-2	Toxaphene
TTHM	Total trihalomethanes (See Section 611.101)	

BOARD NOTE: Derived from 40 CFR 141.30 ~~(1989),~~ and ~~40 CFR~~ 261, Appendix VIII ~~(1989)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ________________________)

Section 611.Appendix D Defined Substrate Method for the Simultaneous Detection of Total Coliforms and Escherichia Coli from Drinking Water

Autoanalysis Colilert Presence-Absence (AC P-A) Method.

The AC P-A test format must be either a 100 ~~mL~~ mℓ 10-tube most probable number test (~~1~~ one tube positive denoting the presence of total coliforms in that sample) or a single vessel containing sufficient reagent to receive 100 ~~mL~~ mℓ of sample. The reagent is available from Access Medical Systems, Branford Connecticut.

The AC P-A method must be performed as follows:

1. For the 10-tube method, add 10 ~~mL~~ mℓ of water sample to each test tube. For the single-vessel method, add 100 ~~mL~~ mℓ of water sample to the vessel.

2. Dissolve the reagent powder by agitation. (This should produce a colorless solution.)

3. Incubate the test tubes or vessel at 35°C for 24 hours.

4. Development of yellow during incubation denotes the presence of total coliforms in either the test tube or the vessel.

5. Expose each positive (yellow) test tube or vessel to a fluorescent (366 nm) light source. Fluorescence specifically demonstrates the presence of Escherichia coli.

   BOARD NOTE: Derived from S. Edberg, M. Allen & D. Smith, "National Field Evaluation of a Defined Substrate Method for the Simultaneous Detection of Total Coliforms and Escherichia coli from Drinking Water: Comparison with Presence-Absence Techniques", Applied and Environmental Microbiology, vol. 55, pp. 1003-1008, as incorporated by reference at 40 CFR 141.21(f)(6)(iii)~~, as amended at 57 Fed. Reg. 24747 (June 10, 1992)~~ (2002). This method is for use in conjunction with the requirements of Section 611.526.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Appendix E Mandatory Lead Public Education Information for Community Water Systems

1) INTRODUCTION

The United States Environmental Protection Agency (USEPA) and ~~[~~(insert name of water supplier~~]~~) are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the USEPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/~~L~~ℓ). Under Federal law we are required to have a program in place to minimize lead in your drinking water by ~~[~~(insert date when corrosion control will be completed for your system~~]~~). This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at ~~[~~(insert water system's phone number~~]~~). This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

2) HEALTH EFFECTS OF LEAD

Lead is a common metal found throughout the environment in lead-based paint; air; soil; household dust; food; certain types of pottery, porcelain, and pewter; and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells, and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination -- like dirt and dust -- that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

3) LEAD IN DRINKING WATER

A) Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

B) Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

C) When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

4) STEPS YOU CAN TAKE IN THE HOME TO REDUCE EXPOSURE TO LEAD IN DRINKING WATER

A) Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call ~~[~~(insert phone number of water system~~]~~).

B) If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

i) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than ~~[~~(insert a cost estimate based on flushing two times a day for 30 days~~]~~) per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

ii) Try not to cook with or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

iii) Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

iv) If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify the Illinois Environmental Protection Agency about the violation.

v) Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of the ~~[~~(insert name of department that issues building permits~~]~~). A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line that we own. If the line is only partially owned by the ~~[~~(insert name of the city, county, or water system that controls the line~~]~~), we are required to provide the owner of the privately-owned portion of the line with information on how to replace the privately-owned portion of the service line, and offer to replace that portion of the line at the owner's expense. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps that you can take to minimize exposure to any temporary increase in lead levels which may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within three business days after receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

vi) Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

C) The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

i) Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

ii) Purchase bottled water for drinking and cooking.

D) You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include the following:

i) ~~[~~(~~insert~~ Insert the name of city or county department of public utilities~~]~~) at ~~[~~(insert phone number~~]~~) can provide you with information about your community's water supply, and a list of local laboratories that have been certified by EPA for testing water quality;

ii) ~~[~~(~~insert~~ Insert the name of city or county department that issues building permits~~]~~) at ~~[~~(insert phone number~~]~~) can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

iii) The Illinois Department of Public Health at 217-782-4977 or 312-814-2608 or the ~~[~~(insert the name of the city or county health department~~]~~) at ~~[~~(insert phone number~~]~~) can provide you with information about the health effects of lead and how you can have your child's blood tested.

E) The following is a list of some State-approved laboratories in your area that you can call to have your water tested for lead. ~~[~~(Insert names and phone numbers of at least two laboratories.~~]~~)

BOARD NOTE: Derived from 40 CFR 141.85(a)(1)~~ (1999), as renumbered and amended at 65 Fed. Reg. 2005 (Jan. 12, 2000)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Appendix F Mandatory Lead Public Education Information for Non-Transient Non-Community Water Systems

1) INTRODUCTION

The United States Environmental Protection Agency (USEPA) and ~~[~~(insert name of water supplier~~]~~) are concerned about lead in your drinking water. Some drinking water samples taken from this facility have lead levels above the USEPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/~~L~~ℓ). Under Federal law we are required to have a program in place to minimize lead in your drinking water by ~~[~~(insert date when corrosion control will be completed for your system~~]~~). This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at ~~[~~(insert water system's phone number~~]~~). This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

2) HEALTH EFFECTS OF LEAD

Lead is found throughout the environment in lead-based paint; air; soil; household dust; food; certain types of pottery, porcelain, and pewter; and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells, and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination -- like dirt and dust -- that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

3) LEAD IN DRINKING WATER

A) Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

B) Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass, and chrome plated brass faucets, and in some cases, pipes made of lead that connect houses and buildings to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes, and other plumbing materials to 8.0%.

C) When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

4) STEPS YOU CAN TAKE TO REDUCE EXPOSURE TO LEAD IN DRINKING WATER

A) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. Although toilet flushing or showering flushes water through a portion of the plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one gallon.

B) Do not cook with or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it.

C) The steps described above will reduce the lead concentrations in your drinking water. However, if you are still concerned, you may wish to use bottled water for drinking and cooking.

D) You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include the following:

i) ~~[~~(~~insert~~ Insert the name or title of facility official if appropriate~~]~~) at ~~[~~(insert phone number~~]~~) can provide you with information about your facility's water supply; and

ii) The Illinois Department of Public Health at 217-782-4977 or 312-814-2608 or the ~~[~~(insert the name of the city or county health department~~]~~) at ~~[~~(insert phone number~~]~~) can provide you with information about the health effects of lead.

BOARD NOTE: Derived from 40 CFR 141.85(a)(2)~~, as added at 65 Fed. Reg. 2006 (Jan. 12, 2000)~~ (2002). The Department of Public Health (Department) regulates non-community water supplies, including non-transient, non-community water supplies. The Department has incorporated this Part into its regulations at 77 Ill. Adm. Code 900.15(a)(2)(A) and~~ 900-20(k)(2)~~ 900.20(k)(2). Thus, the Board has included the notice language of 40 CFR 141.85(a)(2) as this Section for the purposes of facilitating federal review and authorization of the Illinois drinking water regulations.

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Appendix G NPDWR Violations and Situations Requiring Public Notice

See note 1 at the end of this Appendix G for an explanation of the Agency's authority to alter the magnitude of a violation from that set forth in the following table.

	MCL/MRDL/TT violations[2]		Monitoring & testing procedure violations	
Contaminant	Tier of public notice required	Citation	Tier of public notice required	Citation

I. Violations of National Primary Drinking Water Regulations (NPDWR):[3]

A. Microbiological Contaminants

1. Total coliform	2	611.325(a)	3	611.521-611.525
2. Fecal coliform/E. coli	1	611.325(b)	[4] 1, 3	611.525

3. Turbidity MCL	2	611.320(a)	3	611.560
4. Turbidity MCL (average of two days' samples~~>~~ greater than 5 NTU)	[5] 2, 1	611.320(b)	3	611.560
5. Turbidity (for TT violations resulting from a single exceedence of maximum allowable turbidity level)	[6] 2, 1	611.231(b), 611.233(b)(1), 611.250(a)(2), 611.250(b)(2), 611.250(c)(2), 611.250(d), 611.743(a)(2), 611.743(b), 611.955(b)(2)	3	611.531(a), 611.532(b), 611.533(a), 611.744, 611.956(a)(1)-(a)(3), 611.956(b)
6. Surface Water Treatment Rule violations, other than violations resulting from single exceedence of max. allowable turbidity level (TT)	2	611.211, 611.213, 611.220, 611.230-611.233, 611.240-611.242, 611.250	3	611.531-611.533
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedence of max. turbidity level (TT)	2	[7] 611.740-611.743, 611.950-611.955	3	611.742, 611.744, 611.953, 611.954, 611.956
8. Filter Backwash Recycling Rule violations	2	611.276	3	611.276
9. Long Term 1 Enhanced Surface Water Treatment Rule violations	2	611.950-611.955	3	611.953, 611.954, 611.956

B. Inorganic Chemicals (IOCs)

1. Antimony	2	611.301(b)	3	611.600, 611.601, 611.603
2. Arsenic	2	[10] 611.301(b)	3	[9] 611.601, 611.612(a), 611.612(b)
3. Asbestos (fibers~~>~~ greater than 10 µm)	2	611.301(b)	3	611.600, 611.601, 611.602

4. Barium	2	611.301(b)	3	611.600, 611.601, 611.603
5. Beryllium	2	611.301(b)	3	611.600, 611.601, 611.603
6. Cadmium	2	611.301(b)	3	611.600, 611.601, 611.603
7. Chromium (total)	2	611.301(b)	3	611.600, 611.601, 611.603
8. Cyanide	2	611.301(b)	3	611.600, 611.601, 611.603
9. Fluoride	2	611.301(b)	3	611.600, 611.601, 611.603
10. Mercury (inorganic)	2	611.301(b)	3	611.600, 611.601, 611.603
11. Nitrate	1	611.301(b)	[10] 1, 3	611.600, 611.601, 611.604, 611.606
12. Nitrite	1	611.301(b)	[10] 1, 3	611.600, 611.601, 611.605, 611.606
13. Total Nitrate and Nitrite	1	611.301(b)	3	611.600, 611.601
14. Selenium	2	611.301(b)	3	611.600, 611.601, 611.603
15. Thallium	2	611.301(b)	3	611.600, 611.601, 611.603

C. Lead and Copper Rule (Action Level for lead is 0.015 mg/~~L~~ℓ, for copper is 1.3 mg/~~L~~ℓ)

1. Lead and Copper Rule (TT)	2	611.350-611.355	3	611.356-611.359

D. Synthetic Organic Chemicals (SOCs)

1. 2,4-D	2	611.310(c)	3	611.648
2. 2,4,5-TP (silvex)	2	611.310(c)	3	611.648

3. Alachlor	2	611.310(c)	3	611.648
4. Atrazine	2	611.310(c)	3	611.648
5. Benzo(a)pyrene (PAHs)	2	611.310(c)	3	611.648
6. Carbofuran	2	611.310(c)	3	611.648
7. Chlordane	2	611.310(c)	3	611.648
8. Dalapon	2	611.310(c)	3	611.648
9. Di(2-ethylhexyl)adipate	2	611.310(c)	3	611.648
10. Di(2-ethylhexyl)phthalate	2	611.310(c)	3	611.648
11. Dibromochloropropane (DBCP)	2	611.310(c)	3	611.648
12. Dinoseb	2	611.310(c)	3	611.648
13. Dioxin (2,3,7,8-TCDD)	2	611.310(c)	3	611.648
14. Diquat	2	611.310(c)	3	611.648
15. Endothall	2	611.310(c)	3	611.648
16. Endrin	2	611.310(c)	3	611.648
17. Ethylene dibromide	2	611.310(c)	3	611.648
18. Glyphosate	2	611.310(c)	3	611.648
19. Heptachlor	2	611.310(c)	3	611.648
20. Heptachlor epoxide	2	611.310(c)	3	611.648
21. Hexachlorobenzene	2	611.310(c)	3	611.648
22. Hexachlorocyclopentadiene	2	611.310(c)	3	611.648
23. Lindane	2	611.310(c)	3	611.648
24. Methoxychlor	2	611.310(c)	3	611.648
25. Oxamyl (Vydate)	2	611.310(c)	3	611.648
26. Pentachlorophenol	2	611.310(c)	3	611.648
27. Picloram	2	611.310(c)	3	611.648
28. Polychlorinated biphenyls (PCBs)	2	611.310(c)	3	611.648
29. Simazine	2	611.310(c)	3	611.648
30. Toxaphene	2	611.310(c)	3	611.648

E. Volatile Organic Chemicals (VOCs)

1. Benzene	2	611.310(a)	3	611.646
2. Carbon tetrachloride	2	611.310(a)	3	611.646
3. Chlorobenzene (monochlorobenzene)	2	611.310(a)	3	611.646
4. o-Dichlorobenzene	2	611.310(a)	3	611.646
5. p-Dichlorobenzene	2	611.310(a)	3	611.646
6. 1,2-Dichloroethane	2	611.310(a)	3	611.646
7. 1,1-Dichloroethylene	2	611.310(a)	3	611.646
8. cis-1,2-Dichloroethylene	2	611.310(a)	3	611.646
9. trans-1,2-Dichloroethylene	2	611.310(a)	3	611.646
10. Dichloromethane	2	611.310(a)	3	611.646
11. 1,2-Dichloropropane	2	611.310(a)	3	611.646

12. Ethylbenzene	2	611.310(a)	3	611.646
13. Styrene	2	611.310(a)	3	611.646
14. Tetrachloroethylene	2	611.310(a)	3	611.646
15. Toluene	2	611.310(a)	3	611.646
16. 1,2,4-Trichlorobenzene	2	611.310(a)	3	611.646
17. 1,1,1-Trichloroethane	2	611.310(a)	3	611.646
18. 1,1,2-Trichloroethane	2	611.310(a)	3	611.646
19. Trichloroethylene	2	611.310(a)	3	611.646
20. Vinyl chloride	2	611.310(a)	3	611.646
21. Xylenes (total)	2	611.310(a)	3	611.646

F. Radioactive Contaminants

1. Beta/photon emitters	2	611.330(d)	3	611.720(a), 611.732
2. Alpha emitters	2	611.330(c)	3	611.720(a), 611.731
3. Combined radium (226 & 228)	2	611.330(b)	3	611.720(a), 611.731
4. Uranium	[11] 2	611.330(e)	[12] 3	611.720(a), 611.731

G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).[13]

1. Total trihalomethanes (TTHMs)	2	[14] 611.310, 611.312(a)	3	611.680-611.688, 611.382(a)-(b)
2. Haloacetic Acids (HAA5)	2	611.312(a)	3	611.382(a)-(b)
3. Bromate	2	611.312(a)	3	611.382(a)-(b)
4. Chlorite	2	611.312(a)	3	611.382(a)-(b)
5. Chlorine (MRDL)	2	611.313(a)	3	611.382(a), (c)
6. Chloramine (MRDL)	2	611.313(a)	3	611.382(a), (c)
7. Chlorine dioxide (MRDL), where any two consecutive daily samples at entrance to distribution system only are above MRDL	2	611.313(a), 611.383(c)(3)	2 [15], 3	611.382(a), (c), 611.383(c)(2)
8. Chlorine dioxide (MRDL), where samples in distribution system the next day are also above MRDL	[16]1	611.313(a), 611.383(c)(3)	1	611.382(a), (c), 611.383(c)(2)

9. Control of DBP precursors--TOC (TT)	2	611.385(a)-(b)	3	611.382(a), (d)
10. Benchmarking and disinfection profiling	N/A	N/A	3	611.742, 611.953, 611.954
11. Development of monitoring plan	N/A	N/A	3	611.382(f)

H. Other Treatment Techniques

1. Acrylamide (TT)	2	611.296	N/A	N/A
2. Epichlorohydrin (TT)	2	611.296	N/A	N/A

II. Unregulated Contaminant Monitoring: [17]

A. Unregulated contaminants	N/A	N/A	3	611.510
B. Nickel	N/A	N/A	3	611.603, 611.611

III. Public Notification for Relief Equivalent to a SDWA ~~Section~~ section 1415 Variance or a ~~Section~~ section 1416 Exemption~~:~~.

A. Operation under relief equivalent to a SDWA section 1415 variance or a section 1416 exemption	3	[18] 1415, 1416	N/A	N/A
B. Violation of conditions of relief equivalent to a SDWA section 1415 variance or a section 1416 exemption	2	1415, 1416, [19] 611.111, 611.112	N/A	N/A

IV. Other Situations Requiring Public Notification~~:~~.

A. Fluoride secondary maximum contaminant level (SMCL) exceedence	3	611.858	N/A	N/A
B. Exceedence of nitrate MCL for a non-CWS supplier, as allowed by the Agency	1	611.300(d)	N/A	N/A
C. Availability of unregulated contaminant monitoring data	3	611.510	N/A	N/A
D. Waterborne disease outbreak	1	611.101, 611.233(b)(2)	N/A	N/A
E. Other waterborne emergency[20]	1	N/A	N/A	N/A
F. Other situations as determined by the Agency by ~~an~~ a SEP issued pursuant to Section 611.110	1, 2, 3	N/A	N/A	N/A

Appendix G--Endnotes

1. Violations and other situations not listed in this table (e.g., reporting violations and failure to prepare Consumer Confidence Reports) do not require notice, unless otherwise determined by the Agency by ~~an~~ a SEP issued pursuant to Section 611.110. The Agency may, by ~~an~~ a SEP issued pursuant to Section 611.110, further require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under Sections 611.902(a) and 611.903(a).

2. Definition of the abbreviations used: "MCL" means maximum contaminant level, "MRDL" means maximum residual disinfectant level, and "TT" means treatment technique.

3. The term "violations of National Primary Drinking Water Regulations (NPDWR)" is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

4. Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3 violations.

5. A supplier that violates the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue ~~an~~ a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a supplier is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.

6. A supplier with a treatment technique violation involving a single exceedence of a maximum turbidity limit under the Surface Water Treatment Rule (SWTR), the Interim Enhanced Surface Water Treatment Rule (IESWTR), or the Long Term 1 Enhanced Surface Water Treatment Rule are required to consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue ~~an~~ a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a supplier is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.

7. Most of the requirements of the Interim Enhanced Surface Water Treatment Rule (63 Fed. Reg. 69477 (December 16, 1998)) (Sections 611.740-611.741, 611.743-611.744) ~~become~~ were effective January 1, 2002 for a Subpart B supplier (surface water systems and groundwater systems under the direct influence of surface water) that serves at least 10,000 persons. However, Section 611.742 is currently effective. The Surface Water Treatment Rule (SWTR) remains in effect for a supplier serving at least 10,000 persons even after 2002; the Interim Enhanced Surface Water Treatment Rule adds additional requirements and does not in many cases supercede the SWTR.

8. The arsenic MCL citations are effective January 23, 2006. Until then, the citations are Sections 611.330(b) and 611.612(c).

9. The arsenic Tier 3 violation MCL citations are effective January 23, 2006. Until then, the citations are Sections 611.100, 611.101, and 611.612.

10. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.

11. The uranium MCL Tier 2 violation citations are effective December 8, 2003 for a CWS supplier.

12. The uranium Tier 3 violation citations ~~are~~ were effective December 8, 2000 for a CWS supplier.

13. A Subpart B community or non-transient non-community system supplier that serves 10,000 persons or more must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements ~~beginning January 1, 2002~~. All other community and non-transient non-community systems must meet the MCLs and MRDLs beginning January 1, 2004. A Subpart B transient non-community system supplier serving 10,000 or more persons that uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL ~~beginning January 1, 2002~~. A Subpart B transient non-community system supplier that serves fewer than 10,000 persons, which uses only groundwater not under the direct influence of surface water, and which uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

14. Section 611.310 will no longer apply after January 1, 2004.

15. Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system is a Tier 2 violation.

16. If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. A failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

17. Some water suppliers must monitor for certain unregulated contaminants listed in Section 611.510.

18. This citation refers to sections 1415 and 1416 of the federal Safe Drinking Water Act. sections 1415 and 1416 require that "a schedule prescribed . . . for a public water system granted relief equivalent to a SDWA section 1415 variance or a section 1416 exemption must require compliance by the system . . .."

19. In addition to sections 1415 and 1416 of the federal Safe Drinking Water Act, 40 CFR

142.307 specifies the items and schedule milestones that must be included in relief equivalent to a SDWA section 1415 small system variance. In granting any form of relief from an NPDWR, the Board will consider all applicable federal requirements for and limitations on the State's ability to grant relief consistent with federal law.

20. Other waterborne emergencies require a Tier 1 public notice under Section 611.902(a) for situations that do not meet the definition of a waterborne disease outbreak given in Section 611.101, but which still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.

BOARD NOTE: Derived from Appendix A to Subpart Q to 40 CFR 141 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Appendix H Standard Health Effects Language for Public Notification

Contaminant	MCLG[1] mg/~~L~~ℓ	MCL[2] mg/~~L~~ℓ	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR):			
A. Microbiological Contaminants			
1a. Total coliform	Zero	See footnote 3	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal coliform/E. coli	Zero	Zero	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

2a. Turbidity (MCL) [4]	None	1 NTU[5]/ 5 NTU	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
2b. Turbidity (SWTR TT)	None	TT[7]	Turbidity has no health effects. However,[6] turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
2c. Turbidity (IESWTR TT and LT1ESWTR TT)	None	TT	Turbidity has no health effects. However,[8] turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
B. Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), and Filter Backwash Recycling Rule (FBRR) violations:			
3. Giardia lamblia (SWTR/IESWTR/ LT1ESWTR)	Zero	TT[10]	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

4. Viruses (SWTR/IESWTR/ LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
5. Heterotrophic plate count (HPC) bacteria[9] (SWTR/IESWTR/ LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
6. Legionella (SWTR/IESWTR/ LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
7. Cryptosporidium (IESWTR/FBRR/ LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
C. Inorganic Chemicals (IOCs)			
8. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
9. Arsenic[11]	0	0.01	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

10. Asbestos (10 µm)	7 MFL[12]	7 MFL	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
11. Barium	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
12. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
13. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
14. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
15. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
16. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining ~~and~~/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

17. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
18. Nitrate	10	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
19. Nitrite	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
20. Total Nitrate and Nitrite	10	10	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
21. Selenium	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
22. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

D. Lead and Copper Rule			
23. Lead	Zero	TT[13]	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
24. Copper	1.3	TT[14]	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
E. Synthetic Organic Chemicals (SOCs)			
25. 2,4-D	0.07	0.07	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
26. 2,4,5-TP (silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
27. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

28. Atrazine	0.003	0.003	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
29. Benzo(a)pyrene (PAHs).	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
30. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
31. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
32. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
33. Di(2-ethylhexyl)adipate	0.4	0.4	Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience ~~general~~ toxic effects, such as weight loss, liver enlargement, or possible reproductive difficulties.
34. Di(2-ethylhexyl)-phthalate	Zero	0.006	Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver~~,~~ or experience reproductive difficulties, and they may have an increased risk of getting cancer.

35. Dibromochloropropane (DBCP)	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
36. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
37. Dioxin (2,3,7,8-TCDD)	Zero	3×10^{-8}	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
38. Diquat	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
39. Endothall	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
40. Endrin	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
41. Ethylene dibromide	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
42. Glyphosate	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

43. Heptachlor	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
44. Heptachlor epoxide	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
45. Hexachlorobenzene	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
46. Hexachlorocyclopenta-diene	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
47. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
48. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
49. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

50. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
51. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
52. Polychlorinated biphenyls (PCBs)	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
53. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
54. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
F. Volatile Organic Chemicals (VOCs)			
55. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
56. Carbon tetrachloride	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

57. Chlorobenzene (monochlorobenzene)	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
58. o-Dichlorobenzene	0.6	0.6	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
59. p-Dichlorobenzene	0.075	0.075	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
60. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
61. 1,1-Dichloroethylene	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
62. cis-1,2-Dichloroethylene	0.07	0.07	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
63. trans-1,2-Dichloroethylene	0.1	0.1	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
64. Dichloromethane	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

65. 1,2-Dichloropropane	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
66. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
67. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
68. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
69. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
70. 1,2,4-Trichlorobenzene	0.07	0.07	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
71. 1,1,1-Trichloroethane	0.2	0.2	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
72. 1,1,2-Trichloroethane	0.003	0.005	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

73. Trichloroethylene	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
74. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
75. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
G. Radioactive Contaminants			
76. Beta/photon emitters	Zero	4 mrem/yr[15]	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
77. Alpha emitters	Zero	15 pCi/~~L~~ℓ[16]	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
78. Combined radium (226 & 228)	Zero	5 pCi/~~L~~ℓ	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
79. Uranium[17]	Zero	30 µg/~~L~~ℓ	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals: Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAA5)[18]			
80. Total trihalomethanes (TTHMs)	N/A	0.10/ 0.080[19] [20]	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
81. Haloacetic Acids (HAA5)	N/A	0.060[21]	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
82. Bromate	Zero	0.010	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
83. Chlorite	0.08	1.0	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
84. Chlorine	4 (MRDLG)[22]	4.0 (MRDL)[23]	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

85. Chloramines	4 (MRDLG)	4.0 (MRDL)	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
85a. Chlorine dioxide, where any two consecutive daily samples taken at the entrance to the distribution system are above the MRDL	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. Add for public notification only: The chlorine dioxide violations reported today are the result of exceedences at the treatment facility only, not within the distribution system that delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.
86a. Chlorine dioxide, where one or more distribution system samples are above the MRDL	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

			Add for public notification only: The chlorine dioxide violations reported today include exceedences of the USEPA standard within the distribution system that delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.
87. Control of DBP precursors (TOC)	None	TT	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
I. Other Treatment Techniques:			
88. Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
89. Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

Appendix H--Endnotes

1. “MCLG” means maximum contaminant level goal.

2. “MCL” means maximum contaminant level.

3. For a water supplier analyzing at least 40 samples per month, no more than 5.0 percent of the monthly samples may be positive for total coliforms. For a supplier analyzing fewer than 40 samples per month, no more than one sample per month may be positive for total coliforms.

4. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 Surface Water Treatment Rule, the 1998 Interim Enhanced Surface Water Treatment Rule, and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule. The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for a supplier that is required to filter but has not yet installed filtration (Section 611.320).

5. “NTU” means nephelometric turbidity unit.

6. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 Surface Water Treatment Rule (SWTR), the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR), and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule. A supplier subject to the Surface Water Treatment Rule (both filtered and unfiltered) may not exceed 5 NTU. In addition, in filtered systems, 95 percent of samples each month must not exceed 0.5 NTU in systems using conventional or direct filtration and must not exceed 1 NTU in systems using slow sand or diatomaceous earth filtration or other filtration technologies approved by the Agency.

7. “TT” means treatment technique.

8. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 Surface Water Treatment Rule (SWTR), the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR), and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule. For a supplier subject to the IESWTR (systems serving at least 10,000 people, using surface water or groundwater under the direct influence of surface water), that use conventional filtration or direct filtration, ~~after January 1, 2002,~~ the turbidity level of a system’s combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system’s combined filter effluent must not exceed 1 NTU at any time. A supplier subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the Agency. For a supplier subject to the LT1ESWTR (a supplier that serves fewer than 10,000 people, using surface water or groundwater under the direct influence of surface water) that uses conventional filtration or direct filtration, after January 1, 2005, the turbidity level of the supplier’s combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of the supplier’s combined filter effluent must not exceed 1 NTU at any time. A supplier subject to the LT1ESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the **Agency**.

9. The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.

10. SWTR, IESWTR, and LT1ESWTR treatment technique violations that involve turbidity exceedences may use the health effects language for turbidity instead.

11. These arsenic values are effective January 23, 2006. Until then, the MCL is 0.05 mg/~~L~~ℓ and there is no MCLG.

12. Millions of fibers per liter.

13. Action Level = 0.015 mg/~~L~~ℓ.

14. Action Level = 1.3 mg/~~L~~ℓ.

15. Millirems per year.

16. Picocuries per liter.

17. The uranium MCL is effective December 8, 2003 for all community water systems.

18. A surface water system supplier or a groundwater system supplier under the direct influence of surface water is regulated under Subpart B of this Part. A Supbart B community water system supplier or a non-transient non-community system supplier that serves 10,000 or more persons must comply with DBP MCLs and disinfectant maximum residual disinfectant levels (MRDLs) ~~beginning January 1, 2002~~. All other community and non-transient non-community system suppliers must meet the MCLs and MRDLs beginning January 1, 2004. Subpart B transient non-community system suppliers serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL~~ beginning January 1, 2002~~. Subpart B transient non-community system suppliers serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

19. The MCL of 0.10 mg/~~L~~ℓ for TTHMs ~~is~~ was in effect until January 1, 2002 for a Subpart B community water system supplier serving 10,000 or more persons. This MCL is in effect until January 1, 2004 for community water systems with a population of 10,000 or more using only groundwater not under the direct influence of surface water. After these deadlines, the MCL will be 0.080 mg/~~L~~ℓ. On January 1, 2004, a supplier serving fewer than 10,000 will have to comply with the new MCL as well.

20. The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.

21. The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic acids.

22. "MRDLG" means maximum residual disinfectant level goal.

23. "MRDL" means maximum residual disinfectant level.

BOARD NOTE: Derived from Appendix B to Subpart Q to 40 CFR 141 (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Table A Total Coliform Monitoring Frequency

TOTAL COLIFORM MONITORING FREQUENCY FOR CWSs

Population Served	Minimum Number of Samples per ~~month~~ Month
25 to 1000	1
1001 to 2500	2
2501 to 3300	3
3301 to 4100	4
4101 to 4900	5
4901 to 5800	6
5801 to 6700	7
6701 to 7600	8
7601 to 8500	9
8501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330

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

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

BOARD NOTE: Derived from 40 CFR 141.21(a)(2)~~, as amended at 54 Fed. Reg. 27562, June 29, 1989~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Table C Frequency of RDC Measurement

System Size (Persons Served)	Samples per Day
500 or fewer	1
501 to 1000	2
1001 to 2,500	3
2501 to 3,300	4

The day's samples cannot be taken at the same time. The sampling intervals are subject to Agency review and approval by ~~special exception permit~~ a SEP issued pursuant to Section 611.110.

BOARD NOTE: Derived from 40 CFR 141.74(b)(5) and (c)(2) ~~(1991)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Table E Lead and Copper Monitoring Start Dates

System Size (Persons served)	First Six-month Monitoring Period Begins
more than 50,000	~~Upon effective date[1]~~January 1, 1992
3,301 to 50,000	~~Upon effective date[2]~~July 1, 1992
3,300 or fewer	July 1, 1993

~~1 U.S. EPA sets forth a date of January 1, 1992.~~
~~2 U.S. EPA sets forth a date of July 1, 1992.~~

BOARD NOTE: Derived from 40 CFR 141.86(d)(1) ~~(1994)~~ (2002).

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)

Section 611.Table G Summary of Section 611.357 Monitoring Requirements for Water Quality Parameters

See end note 1 below.

Monitoring Period	Parameters[2]	Location	Frequency
Initial Monitoring	~~PH,~~ pH, alkalinity, orthophosphate or silica[3], calcium, conductivity, temperature	Taps and at entry points to the distribution system	Every six months
After installation of corrosion control	~~PH,~~ pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every six months
	~~PH,~~ pH, alkalinity dosage rate and concentration (if alkalinity is adjusted as part of corrosion control), inhibitor dosage rate, and inhibitor residual[5]	Entry points to the distribution system[6]	No less frequently than every two weeks
After the Agency specifies parameter values for optimal corrosion control	~~PH,~~ pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every six months
	~~PH,~~ pH, alkalinity dosage rate and concentration (if alkalinity is adjusted as part of corrosion control), inhibitor dosage rate, and inhibitor residual[5]	Entry points to the distribution system[6]	No less frequently than every two weeks
Reduced monitoring	~~PH,~~ pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every six months, annually[7] or every three years[8]; reduced number of sites

~~PH,~~ pH, alkalinity dosage rate and concentration (if alkalinity is adjusted as part of corrosion control), inhibitor dosage rate, and inhibitor residual[5]	Entry points to the distribution system[6]	No less frequently than every two weeks

1. This Table G is for illustrative purposes; consult the text of Section 611.357 for precise regulatory requirements.

2. Small- and medium-sized systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.

3. Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.

4. Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.

5. Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

6. A groundwater system supplier may limit monitoring to representative locations throughout the system.

7. A water supplier may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if it has maintained the range of values for water quality parameters reflecting optimal corrosion control during three consecutive years of monitoring.

8. A water supplier may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every three years if it has maintained the range of values for water quality parameters reflecting optimal corrosion control during three consecutive years of annual monitoring. A water supplier may accelerate to triennial monitoring for water quality parameters at the tap if it has maintained 90th percentile lead levels less than or equal to 0.005 mg/~~L~~ℓ, 90th percentile copper levels less than or equal to 0.65 mg/~~L~~ℓ, and the range of water quality parameters designated by the Agency under Section 611.352(f) as representing optimal corrosion control during two consecutive six-month monitoring periods.

BOARD NOTE: Derived from the table to 40 CFR 141.87 ~~(1999)~~ (2002).

(Source: Amended at 27 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)) (corresponding with Section 611.301(b))	October 2, 1987
Phase I VOCs (40 CFR 141.60(a)(1)) (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)	July 9, 1989
Lead and Copper (40 CFR, Subpart I) (corresponding with Subpart G of this Part) (lead and copper monitoring, reporting, and recordkeeping requirements of 40 CFR 141.86 through 141.91)	July 7, 1991
Phase II IOCs (40 CFR 141.60(b)(2)) (corresponding with Section 611.301(b)) (asbestos, cadmium, chromium, mercury, nitrate, nitrite, and selenium)	July 30, 1992
Phase II VOCs (40 CFR 141.60(a)(2)) (corresponding with Section 611.311(a)) (o-dichlorobenzene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, 1,2-dichloropropane, ethylbenzene, monochlorobenzene, styrene, tetrachloroethylene, toluene, and xylenes (total))	July 30, 1992
Phase II SOCs (40 CFR 141.60(a)(2)) (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))	July 30, 1992
Lead and Copper (40 CFR, Subpart I) (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)	December 7, 1992
Phase IIB IOC (40 CFR 141.60(b)(2)) (corresponding with Section 611.301(b)) (barium)	January 1, 1993
Phase IIB SOCs (40 CFR 141.60(a)(2)) (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~~	January 1, 1993

~~aldicarb sulfoxide, but the monitoring requirements became effective January 1, 1993~~. See the Board note appended to Section 611.311(c) for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.)

Phase V IOCs (40 CFR 141.60(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)

Disinfection/disinfectant byproducts (40 CFR 141.64 & 141.65)
Smaller Systems (serving ~~≤~~10,000 or fewer persons) December 16, 2001
Larger Systems (serving ~~>~~ more than 10,000 persons) December 16, 2003
(corresponding with Section 611.312 & 611.313)
(total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide)

~~Radionuclidess~~ Radionuclides (40 CFR 141.66) December 8, 2003
(corresponding with Section 611.330)
(combined radium (Ra-226 + Ra-228), gross alpha particle activity, beta particle and photon activity, and uranium)

Arsenic (40 CFR 141.62(b)(16)) January 23, 2006
(corresponding with Section 611.301(b))
(arsenic)

(Source: Amended at 27 Ill. Reg. ________, effective ______________________)