ILLINOIS POLLUTION CONTROL BOARD
February 21, 2002

IN THE MATTER OF:	)	
	)	
SDWA UPDATE, USEPA AMENDMENTS	)	R02-5
(January 1, 2001 through June 30, 2001;	)	(Identical-in-Substance
Arsenic Rule)	)	Rulemaking - Public Water Supply)

Adopted Rule. Final Order.

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

By this order, the Board is adopting amendments to the Illinois drinking water regulations that are identical in substance to amendments adopted by the United States Environmental Protection Agency (USEPA) to the federal Safe Drinking Water Act (SDWA) (42 U.S.C. §§ 300f *et seq.* (1994)) drinking water regulations. The federal amendments included in this docket include those adopted by USEPA during the period between January 1, 2001 and June 30, 2001. The Board has also included a number of amendments prompted by comments from the Joint Committee on Administrative Rules (JCAR), the Illinois Environmental Protection Agency (Agency), and USEPA.

These adopted amendments are based on a proposal for public comment adopted by the Board on October 4, 2001, for which a Notice of Proposed Amendments appeared in the October 26, 2001 issue of the *Illinois Register*. The Board has made only non-substantive changes to the proposal to public comments.

Under Sections 7.2 and 17.5 of the Environmental Protection Act (Act) (415 ILCS 5/7.2 and 17.5 (2000)), the Board today adopts amendments to the Illinois regulations that are "identical in substance" to drinking water regulations that USEPA adopted to implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal SDWA (42 U.S.C. §§ 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (1994)). The nominal timeframe of this docket includes federal SDWA amendments that USEPA adopted in the period January 1, 2001 through June 30, 2001.

Sections 7.2 and 17.5 provide for quick adoption 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 (2000)) 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 supports an opinion that the Board also adopts today. The Board will file the adopted amendments with the Office of the Secretary of State without delay. The complete text of the adopted amendments follows.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above order on February 21, 2002, 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: POLLUTION CONTROL BOARD

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

SOURCE: Adopted in R88-26 at 14 Ill. Reg. 16517, effective September 20, 1990; amended in R90-21 at 14 Ill. Reg. 20448, effective December 11, 1990; amended in R90-13 at 15 Ill. Reg. 1562, effective January 22, 1991; amended in R91-3 at 16 Ill. Reg. 19010, effective December 1, 1992; amended in R92-3 at 17 Ill. Reg. 7796, effective May 18, 1993; amended in R93-1 at 17 Ill. Reg. 12650, effective July 23, 1993; amended in R94-4 at 18 Ill. Reg. 12291, effective July 28, 1994; amended in R94-23 at 19 Ill. Reg. 8613, effective June 20, 1995; amended in R95-17 at 20 Ill. Reg. 14493, effective October 22, 1996; amended in R98-2 at 22 Ill. Reg. 5020, effective March 5, 1998; amended in R99-6 at 23 Ill. Reg. 2756, effective February 17, 1999; amended in R99-12 at 23 Ill. Reg. 10348, effective August 11, 1999; amended in R00-8 at 23 Ill. Reg. 14715, effective December 8, 1999; amended in R00-10 at 24 Ill. Reg. 14226 effective September 11, 2000; amended in R01-7 at 25 Ill. Reg. 1329, effective January 11, 2001; amended in R01-20 at 25 Ill. Reg. 13611, effective October 9, 2001; amended in R02-5 at 26 Ill. Reg. ________, effective ______________________.

SUBPART A: GENERAL

Section 611.101 Definitions

As used in this Part, the term:

“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”)~~ regulates non-community water supplies (“non-CWSs,”~~;~~ including non-transient, non-community water supplies (“NTNCWSs”) and transient non-community water supplies (“transient non-CWSs”)). For the purposes of regulation of supplies by Public Health by reference to this Part, “Agency” ~~shall~~ 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) ~~(1998)~~ (2000). The Board cannot compile an exhaustive listing of all federal, state, and local laws to which bottled water and bottling water may be subjected. However, the statutes and regulations of which the Board is aware are the following: the Illinois Food, Drug and Cosmetic Act [410 ILCS 620], 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 ~~Practices for human foods~~ 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 NOTE: Derived from 40 CFR 141.2 (1998).~~

“Board” means the Illinois Pollution Control Board.

“CAS No.” means “Chemical Abstracts Services Number.”~~.~~

“CT” or “CT_{calc}” is the product of “residual disinfectant concentration” (RDC or C) in mg/L determined before or at the first customer, and the corresponding “disinfectant

contact time" (T) in minutes. If a supplier applies disinfectants at more than one point prior to the first customer, it ~~shall~~ 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 ~~shall~~ must determine the RDC of each disinfection sequence and corresponding contact time before any subsequent disinfection application ~~point(s)~~ points. (See "CT$_{99.9}$."~~.~~)
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"CT$_{99.9}$" is the CT value required for 99.9 percent (3-log) inactivation of Giardia lamblia cysts. CT$_{99.9}$ for a variety of disinfectants and conditions appear in Tables 1.1-1.6, 2.1 and 3.1 of Section 611.Appendix B. (See "Inactivation Ratio."~~.~~)
BOARD NOTE: Derived from the definition of "CT" in 40 CFR 141.2 ~~(1998)~~ (2000).

"Coagulation" means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Community ~~Water System~~ water system" or "CWS" means a public water system (PWS) that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.
BOARD NOTE: ~~Derived from 40 CFR 141.2 (1998).~~ This definition differs slightly from that of Section 3.05 of the Act.

"Compliance cycle" means the nine-year calendar year cycle during which public water systems (PWSs) must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar cycle begins January 1, 1993, and ends December 31, 2001; the second begins January 1, 2002, and ends December 31, 2010; the third begins January 1, 2011, and ends December 31, 2019.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

"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: Derived from 40 CFR 141.2 (1998).~~

"Confluent growth" means a continuous bacterial growth covering the entire filtration area of a membrane filter or a portion thereof, in which bacterial colonies are not discrete.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Contaminant" means any physical, chemical, biological or radiological substance or matter in water.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Conventional filtration treatment" means a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

> A precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum); and
>
> While the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Direct filtration" means a series of processes including coagulation and filtration but excluding sedimentation resulting in substantial particulate removal.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Disinfectant" means any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process, that is intended to kill or inactivate pathogenic microorganisms.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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:
>
> > For the first measurement of RDC, the time in minutes that it takes

for water to move from the first or only point of disinfectant application to a point before or at the point where the first RDC is measured, and

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

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

T within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Disinfection" means a process that inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Disinfection ~~Byproduct~~ 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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

"Domestic or other non-distribution system plumbing problem" means a coliform contamination problem in a PWS with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Dose equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Enhanced coagulation” means the addition of sufficient coagulant for improved removal of disinfection byproduct (DBP) precursors by conventional filtration treatment.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Enhanced softening” means the improved removal of disinfection byproduct (DBP) precursors by precipitative softening.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Filtration” means a process for removing particulate matter from water by passage through porous media.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Flocculation” means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“GC” means “gas chromatography” or “gas-liquid phase chromatography.”~~.~~

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

“Gross alpha particle activity” means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Gross beta particle activity” means the total radioactivity due to beta particle

emission as inferred from measurements on a dry sample.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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 (for Subpart B systems serving at least 10,000 persons only) Cryptosporidium, or 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. "Groundwater under the direct influence of surface water" is as determined in Section 611.212.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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 ~~(1998)~~ (2000).

"Haloacetic acids (five)" or "HAA5" means the sum of the concentrations in milligrams per liter (mg/L) of five haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Halogen" means one of the chemical elements chlorine, bromine or iodine.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

"Inactivation ~~Ratio~~ ratio" (Ai) means:

> $Ai = CT_{calc}/CT_{99.9}$
>
> The sum of the inactivation ratios, or "total inactivation ratio" (B) is calculated by adding together the inactivation ratio for each disinfection sequence:
>
> $B = \sum(Ai)$
>
> A total inactivation ratio equal to or greater than 1.0 is assumed to provide a 3-log inactivation of Giardia lamblia cysts.

BOARD NOTE: Derived from the definition of "CT" in 40 CFR 141.2 ~~(1998)~~ (2000).

"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,~~ benzo(a)pyrene, dalapon, di(2-ethylhexyl)-adipate, di(2-ethylhexyl)phthalate, dinoseb, diquat, endothall, endrin, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram, simazine, 2,3,7,8-TCDD, antimony, beryllium, cyanide, nickel, and thallium as they apply to suppliers whose supplies have fewer than 150 service connections, for which it means the three-year compliance period that begins on January 1, 1996.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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)~~ (1998)~~ (2000).

"L" means "liter."~~.~~

"Legionella" means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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.)
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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: ~~Derived from 40 CFR 141.2 (1998).~~ The Board has not routinely adopted the regulations relating to the federal MCLGs because they are outside the scope of the Board's identical-in-substance mandate under Section 17.5 of the Act.

"Maximum residual disinfectant level" or "MRDL" means the maximum permissible 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.)
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Maximum total trihalomethane potential" or "MTP" means the maximum concentration of total trihalomethanes (TTHMs) produced in a given water containing a disinfectant residual after 7 days at a temperature of 25° C or above.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"MFL" means millions of fibers per liter larger than 10 micrometers.
BOARD NOTE: Derived from 40 CFR 141.23(a)(4)(i) ~~(1998)~~ (2000).

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

"mg/L" means milligrams per liter.

"Mixed system" means a PWS that uses both groundwater and surface water sources.
BOARD NOTE: Drawn from 40 CFR 141.23(b)(2) and 141.24(f)(2) note ~~(1998)~~ (2000).

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

"Near the first service connection" means at one of the 20 percent of all service connections in the entire system that are nearest the public water system (PWS) treatment facility, as measured by water transport time within the distribution system.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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)."
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Non-transient non-community water system" or "NTNCWS" means a public water system (PWS) that is not a community water system (CWS) and that regularly serves

at least 25 of the same persons over 6 months per year.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“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~~ 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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Person” means an individual, corporation, company, association, partnership, ~~State~~ state, unit of local government, or federal agency.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

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

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

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

“Picocurie” or “pCi” means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Point of disinfectant application” is the point at which the disinfectant is applied and downstream of which water is not subject to recontamination by surface water runoff.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

> Any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and
>
> Any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system.

BOARD NOTE: ~~Derived from 40 CFR 141.2 (1998).~~ Where used in Subpart F, “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 ~~(1998)~~ (2000). These radioactive contaminants must be reported in Consumer Confidence Reports under Subpart U when they are detected above the levels indicated in Section 611.720(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 ~~shall~~ 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) ~~(1998)~~ (2000).

"Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem (mrem)" is 1/1000 of a rem.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Repeat compliance period" means a compliance period that begins after the initial compliance period.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

"Residual disinfectant concentration" ("RDC" or "C" in CT calculations) means the concentration of disinfectant measured in mg/L in a representative sample of water. For purposes of the requirement of Section 611.241(d) of maintaining a detectable RDC in the distribution system, "RDC" means a residual of free or combined chlorine.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Sanitary survey" means an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system (PWS) for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“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~~ an 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~~ an 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 (1998).~~ See sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42 USC 300f(4)(B)(i)(II) & (4)(B)(i)(III) (1996)).

“Slow sand filtration” means a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 meters per hour (m/h)) resulting in substantial particulate removal by physical and biological mechanisms.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“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, poly-chlorinated biphenyls (PCBs), 2,4-D, 2,3,7,8-TCDD, and 2,4,5-TP.

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

“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~~ an 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~~ an 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 ~~(1998)~~ (2000) and sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42 USC 300f(4)(B)(i)(II) & (4)(B)(i)(III) (1996)).

"Standard sample" means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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 and the analytical and monitoring requirements of Sections 611.531, 611.532, 611.533, 611.Appendix B, and 611.Appendix C of this Part.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Supplier of water" or "supplier" means any person who owns or operates a public water system (PWS). This term includes the "official custodian."~~.~~
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"Surface water" means all water that is open to the atmosphere and subject to surface runoff.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

"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).
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

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

BOARD NOTE: Drawn from 40 CFR 141.23(b)(2) and 141.24(f)(2) note ~~(1998)~~ (2000).

“System with a single service connection” means a system that supplies drinking water to consumers via a single service line.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Too numerous to count” means that the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Total ~~Organic Carbon~~ organic carbon” ~~(~~ or “TOC”~~)~~ means total organic carbon (in mg/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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Total trihalomethanes” or “TTHM” means the sum of the concentration of trihalomethanes (THMs), in milligrams per liter (mg/L), rounded to two significant figures.
BOARD NOTE: ~~Derived from~~ See the definition of “~~total~~ trihalomethanes” ~~in 40 CFR 141.2 (1998). (See the definition of THMs~~ for a listing of the four compounds that USEPA considers TTHMs to comprise.~~)~~

“Transient, non-community water system” or “transient non-CWS” means a non-CWS that does not regularly serve at least 25 of the same persons over six months of the year.
BOARD NOTE: ~~Derived from 40 CFR 141.2 (1998).~~ 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)
~~BOARD NOTE: Derived from the definitions of “total trihalomethanes” and “trihalomethanes” in 40 CFR 141.2 (1998).~~

“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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“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.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Waterborne disease outbreak” means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system (PWS) that is deficient in treatment, as determined by the appropriate local or State agency.
~~BOARD NOTE: Derived from 40 CFR 141.2 (1998).~~

“Wellhead ~~Protection Program~~ protection program” means the wellhead protection program for the State of Illinois, approved by USEPA under Section 1428 of the SDWA.
BOARD NOTE: Derived from 40 CFR 141.71(b) ~~(1998)~~ (2000). The wellhead protection program includes the “groundwater protection needs assessment” under Section 17.1 of the Act, and 35 Ill. Adm. Code 615 et seq.

BOARD NOTE: Derived from 40 CFR 141.2 (2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001).

(Source: Amended at 26 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.

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

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

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

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

“NTIS” means “National Technical Information Service.”~~.~~

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

Environmental Protection.

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

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

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

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

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

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

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

“Technicon Methods” means “Fluoride in Water and Wastewater,”~~,~~ available from ~~Technicon~~ 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~~; “Methods for the Determination of Inorganic Substances in Environmental Samples”, August 1993, for Method~~

~~300.0; “Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0”, 1997, for Method 300.1~~.

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

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

“USEPA 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.

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

“USEPA Radiochemical Analyses” means “Radiochemical Analytical

Procedures for Analysis of Environmental Samples,”~~;~~ March 1979. Available from NTIS.

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

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

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

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

b) The Board incorporates the following publications by reference:

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

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

Amco-AEPA-1 Polymer. See 40 CFR 141.22(a) ~~(1998)~~ (2000). Also, as referenced in ASTM D1889.

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

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

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

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

Methods, 19th ed.”).

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

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

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

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

Method 304, Radium in Water by Precipitation.

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

Method 306, Tritium in Water.

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

Method 2130 B, Turbidity, Nephelometric Method.

Method 2320 B, Alkalinity, Titration Method.

Method 2510 B, Conductivity, Laboratory Method.

Method 2550, Temperature, Laboratory and Field Methods.

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

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

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

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

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

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

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

<u>Method 3500-Mg E, Magnesium, EDTA Titrimetric Method.</u>

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

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

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

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

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

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

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

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

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

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

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

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

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

Method.

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

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

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

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

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

Method 4500-Si D, Silica, Molybdosilicate Method.

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

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

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

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

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

Method 6610, Carbamate Pesticide Method.

Method 6651, Glyphosate Herbicide (Proposed).

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

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

Method 7500-Cs B, Radioactive Cesium, Precipitation

Method.

Method 7500-~~3H,~~ ^{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).

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

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

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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.

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

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

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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 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-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-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.

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~~Method 7500-U C, Uranium, Isotopic Method.~~

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

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

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

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

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

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

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

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

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

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

ASTM. American Society for Testing and Materials,~~ 1976 Race Street, Philadelphia, PA 19103 215-299-5585~~ 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 610-832-9585:

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

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

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

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

ASTM Method D1293-84, “Standard Test Methods for pH of Water,”~~;~~ “Test Method A--Precise Laboratory Measurement” &

“Test Method B--Routine or Continuous Measurement,”~~;~~ approved October 26, 1984.

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

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

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

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

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

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

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

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

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

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

ASTM Method D3867-90 A and B, “Standard Test Methods for Nitrite-Nitrate in Water,”~~;~~ “Test Method A--Automated Cadmium Reduction” & “Test Method B--Manual Cadmium Reduction,”~~;~~ approved January 10, 1990.

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

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

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

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

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ERDA Health and Safety Laboratory, New York, NY:

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

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The Hach Company, P.O. Box 389, Loveland, CO 80539 800-227-4224:

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

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

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

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

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

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

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

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Method 100.2, “Determination of Asbestos Structures over 10-mm in Length in Drinking Water,”~~;~~ EPA-600/4-83-043, June~~,~~ 1994, Doc. No. PB94-201902 (~~Referred~~ referred to as “USEPA Asbestos Methods-100.2”).

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

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

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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): “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:

“Determination of Ra-226 and Ra-228 (Ra-02),”~~,~~ January 1980, Revised June 1982.

Palintest, Ltd., 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY

800-835-9629:

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~~Technicon Industrial Systems, Tarrytown, NY 10591:~~

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

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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:

“EML Procedures Manual,”~~;~~ 27th Edition, Volume 1, 1990.

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

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

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

“Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions.”~~.~~ See NTIS.

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

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

USGS. Books and Open-File Reports Section, United States Geological Survey, Federal Center, Box ~~25425~~ 25286, Denver, CO 80225-0425:

Methods available upon request by method number from “Methods ~~of~~ for Analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments,”~~;~~ Open File Report 93-125, 1993, or Book 5, Chapter A-1, “Methods for Determination of Inorganic Substances in Water and Fluvial Sediments,”~~;~~ ~~3d~~ 3rd ed., Open-File Report 85-495, 1989, as appropriate (referred to as “USGS Methods”).

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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 B and C (2000).

d) This Part incorporates no later amendments or editions.

(Source: Amended at 26 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 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).

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).

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

1) In granting to a supplier that is a CWS or NTNCWS any variance or adjusted standard from the maximum contaminant levels for any VOC or SOC, listed in Section 611.311(a) or (c), or for any inorganic chemical contaminant, listed in Section 611.301, the supplier must have first applied the best available technology (BAT) identified at Section 611.311(b) (VOCs and SOCs) or Section 611.301(c) (inorganic chemical contaminants) for that constituent, unless the supplier has demonstrated through comprehensive engineering assessments that application of BAT would achieve only a minimal and insignificant reduction in the level of

contaminant.

BOARD NOTE: USEPA lists BAT for each SOC and VOC at 40 CFR 142.62(a) ~~(2000)~~, for the purposes of variances and exemptions (adjusted standards). That list is identical to the list at 40 CFR 141.61(b) ~~(2000)~~.

2) The Board may require any of the following as a condition for relief from ~~a~~ 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).

d) Conditions requiring use of bottled water, ~~or~~ a point-of-use treatment device, or a point-of-entry ~~devices~~ 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 ~~devices~~ treatment device, or a point-of-use ~~devices~~ 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 ~~devices~~ treatment device, ~~or~~ a point-of-use ~~devices~~ 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, ~~and~~ a point-of-use ~~devices~~ treatment device, or other means, but not a point-of-entry ~~devices~~ 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 ~~devices~~ treatment device to avoid an unreasonable risk to health.

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

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 (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).

f) Use of a point-of-entry ~~devices~~ 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).

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~~ radon and ~~Uranium~~ 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. The Agency's determination must be based upon studies by the system and other relevant information.

5) The Board may require a ~~community water system~~ 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~~ section 1415 variance or a ~~Section~~ 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~~ section 1415 variance or a ~~Section~~ 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~~ section 1415 variance or a ~~Section~~ 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.

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

SUBPART B: FILTRATION AND DISINFECTION

Section 611.232 Site-specific Conditions

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

a) Disinfection.

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

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

A) The comprehensiveness of the watershed review;

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

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

i) Characterize the watershed hydrology and land ownership;

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

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

2) The supplier ~~shall~~ must demonstrate through ownership or written agreements with landowners within the watershed that it can control all human activities ~~which~~ that may have an adverse impact on the microbiological quality of the source water. The supplier ~~shall~~ 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 ~~shall~~ must be subject to an annual on-site inspection to assess the watershed control program and disinfection treatment process. The Agency ~~shall~~ 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:

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 ~~system's~~ 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 ~~which~~ 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 ~~shall~~ 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 ~~shall~~ must comply with the MCL for TTHM in Section 611.310. The PWS ~~shall~~ must comply with the requirements for trihalomethanes until December 31, 2001. After December 31, 2001, the ~~system shall~~ 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) ~~(1998)~~ (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001).

(Source: Amended at 26 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 ~~Section~~ Sections 611.231 and 611.232 for avoiding filtration, ~~shall~~ must provide treatment consisting of both disinfection, as specified in Section 611.242, and filtration treatment ~~which~~ 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 ~~Section~~ 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 ~~systems~~ a system using conventional filtration or direct filtration, the turbidity level of representative samples of ~~a~~ 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, 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 ~~shall~~ 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 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.

b) Slow sand filtration.

1) For ~~systems~~ a system using slow sand filtration, the turbidity level of representative samples of ~~a~~ 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, that there is no significant interference with disinfection at a higher level, the Agency ~~shall~~ 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 ~~systems~~ a system using diatomaceous earth filtration, the turbidity

level of representative samples of ~~a~~ 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 application, 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 ~~system~~ supplier that makes this demonstration, the requirements of subsection (b) apply. Beginning January 1, 2002, ~~systems~~ a supplier serving 10,000 or more persons ~~shall~~ must meet the requirements for other filtration technologies in Section 611.743(b).

e) Turbidity is measured as specified in Sections 611.531(d) and 611.533(a). Beginning January 1, 2002, ~~systems~~ a supplier serving 10,000 or more persons ~~shall~~ must meet the turbidity requirements in Section 611.743(a).

BOARD NOTE: Derived from 40 CFR 141.73 ~~(1998)~~ (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001).

(Source: Amended at 26 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).

(Source: Adended at 26 Ill. Reg. ________, effective ______________________)

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

Section 611.300 Old MCLs for Inorganic Chemicals

a) The old MCLs listed in subsection (b) of this Section for inorganic chemicals 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 MCL for arsenic are to be performed pursuant to ~~Section~~ Sections 611.600 through 611.611.

BOARD NOTE: Derived from 40 CFR 141.11(a) ~~(1999)~~ (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).

b) The following are the old MCLs for inorganic chemicals:

Contaminant	Level, mg/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) ~~& (c) (1999)~~ (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). ~~This provision, which corresponds with 40 CFR 141.11, was formerly the only listing of MCLs for inorganic parameters. However, USEPA added another listing of inorganic MCLs at 40 CFR 141.62 at 56 Fed. Reg. 3594 (Jan. 30, 1991), which corresponds with Section 611.301~~ 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) ~~(1999)~~ (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,

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 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, and

5) No adverse public health effects result.

BOARD NOTE: Derived from 40 CFR 141.11(d) ~~(1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (2000). 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, allow iron and manganese in excess of the MCL if sequestration tried on an experimental basis proves to be effective. If sequestration is not effective, positive iron or manganese reduction treatment as applicable must be provided. Experimental use of a sequestering agent may be tried only if approved by special exception permit.

BOARD NOTE: The requirements of subsection (e) of this Section are an additional State requirement.

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.301 Revised MCLs for Inorganic Chemicals

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

b) The MCLs in the following table apply to CWSs. Except for fluoride, the MCLs also apply to NTNCWSs. The MCLs for nitrate, nitrite, and total nitrate and nitrite also apply to transient non-CWSs.

Contaminant	MCL	Units
Antimony	0.006	mg/L
Arsenic (effective January 23, 2006)	0.01	mg/L
Asbestos	7	MFL
Barium	2	mg/L
Beryllium	0.004	mg/L

Cadmium	0.005	mg/L
Chromium	0.1	mg/L
Cyanide (as free CN^-)	0.2	mg/L
Fluoride	4.0	mg/L
Mercury	0.002	mg/L
Nitrate (as N)	10~~.~~	mg/L
Nitrite (as N)	1~~.~~	mg/L
Total Nitrate and Nitrite (as N)	10~~.~~	mg/L
Selenium	0.05	mg/L
Thallium	0.002	mg/L

BOARD NOTE:_See Section 611.300(d) for an elevated nitrate level for non-CWSs. USEPA removed and reserved the MCL for nickel on June 29, 1995, at 60 Fed. Reg. 33932, as a result of a judicial order in Nickel Development Institute v. EPA, No. 92-1407, and Specialty Steel Industry of the U.S. v. Browner, No. 92-1410 (D.C. Cir. Feb. 23 & Mar. 6, 1995), while retaining the contaminant, analytical methodology, and detection limit listings for this contaminant.

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

Contaminant	BAT(s)
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)~~ Cr^{III} only
	RO
Cyanide	IX
	RO
	Cl_2
Mercury	C/F, BAT only if influent Hg concentrations less than or equal to (≤) 10 µg/L
	GAC
	LIME, BAT only if influent Hg concentrations ≤ 10 µg/L
	RO, BAT only if influent Hg concentrations ≤ 10 µg/L
Nickel	IX
	LIME
	RO
Nitrate	IX
	RO
	ED
Nitrite	IX
	RO
Selenium	AAL
	C/F, BAT for ~~Se(IV)~~ 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), 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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

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

The following are the MCLs for organic chemicals. The MCLs for organic chemicals in 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	Additional State Requirement (*)
a)	Chlorinated hydrocarbons		
	Aldrin	0.001	*
	DDT	0.05	*
	Dieldrin	0.001	*
	Heptachlor	0.0001	*
	Heptachlor epoxide	0.0001	*

BOARD NOTE: Originally derived from 40 CFR 141.12(a)(1994), USEPA removed the last entry in this subsection and marked it reserved at 57 Fed. Reg. 31838 (July 17, 1992). USEPA added another listing of organic MCLs at 40 CFR 141.61 ~~(1994)~~ (2000). 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	Additional State Requirement (*)
b)	Chlorophenoxys		
	2,4-D	0.01	*

BOARD NOTE: Originally derived from 40 CFR 141.12(b) ~~(1994)~~ (2000), 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.

	Contaminant	Level mg/L	Additional State Requirement (*)
c)	TTHM	0.10	*

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

31, 2001.

2) The MCL of 0.10 mg/L for TTHM applies to ~~community water systems~~ a CWS supplier that ~~use~~ uses only groundwater not under the direct influence of surface water and ~~serve~~ 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 ~~(1999)~~ (2000). This is an additional State requirement to the extent that it applies to ~~supplies~~ a supplier other than ~~CWSs~~ a CWS supplier that ~~add~~ adds a disinfectant at any part of treatment and which ~~provide~~ provides water to 10,000 or more persons. The new MCL for TTHM is listed in Section 611.312.

(Source: Amended at 26 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)
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 ~~shall~~ must comply with this Section beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons ~~and systems~~ or a supplier using only groundwater not under the direct influence of surface water ~~shall~~ 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 ~~shall~~ must grant the extension, and ~~shall~~ 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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.313 Maximum Residual Disinfectant Levels (MRDLs)

a) Maximum residual disinfectant levels (MRDLs) are as follows:

Disinfectant residual	MRDL (mg/L)
Chlorine	4.0 (as Cl_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 ~~shall~~ must comply with this Section beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons ~~and systems~~ or a supplier using only groundwater not under the direct influence of surface water ~~shall~~ 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 ~~shall~~ 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 ~~and systems~~ or a supplier using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant ~~shall~~ 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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

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

Section 611.380 General Requirements

a) The requirements of this Subpart constitute NPDWRs.

1) The regulations in this Subpart establish standards under which ~~community water systems (CWSs) and non-transient, non-community water systems (NTNCWSs)~~ a CWS supplier or an NTNCWS supplier that ~~add~~ adds a chemical disinfectant to the water in any part of the drinking water treatment process or which ~~provide~~ provides water that contains a chemical disinfectant must modify ~~their~~ 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 establish standards under which ~~transient non-community water systems (transient non-CWSs)~~ a transient non-CWS supplier that ~~use~~ uses chlorine dioxide as a disinfectant or oxidant must modify ~~their~~ 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 ~~which~~ that may have adverse health effects. These DBPs may include chloroform, bromodichloromethane, dibromochloromethane, bromoform, dichloroacetic acid, and ~~trichloroaecetic~~ trichloroacetic acid.

b) Compliance dates.

1) CWSs and NTNCWSs. Unless otherwise noted, ~~systems~~ a supplier must comply with the requirements of this Subpart as follows~~.~~: A Subpart B system supplier serving 10,000 or more persons ~~shall~~ must comply with this Subpart beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons ~~and systems~~ or a supplier using only groundwater not under the direct influence of surface water must comply with this Subpart 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 ~~shall~~ must comply with any requirements for chlorine dioxide in this Subpart beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant ~~and systems~~ or a supplier using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant ~~shall~~ must comply with any requirements for chlorine dioxide in this Subpart beginning January 1, 2004.

c) Each CWS ~~and~~ 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, ~~systems~~ 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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.381 Analytical Requirements

a) ~~Systems shall~~ A supplier must use only the analytical ~~method(s)~~ methods specified in this Section to demonstrate compliance with the requirements of this Subpart.

b) Disinfection byproducts (DBPs).

1) ~~Systems shall~~ 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

			~~Byproduct Measured~~			
~~Methodology~~[2]	~~EPA method~~	~~Standard method~~	~~TTHM~~	~~HAA5~~	~~Chlorite~~[4]	~~Bromate~~
~~P&T/GC/ElCD & PID~~	[3]~~502.2~~		~~X~~			
~~P&T/GC/MS~~	~~524.2~~		~~X~~			
~~LLE/GC/ECD~~	~~551.1~~		~~X~~			
~~LLE/GC/ECD~~		~~6251 B~~		~~X~~		
~~SPE/GC/ECD~~	~~552.1~~			~~X~~		
~~LLE/GC/ECD~~	~~552.2~~			~~X~~		
~~Amperometric Titration~~		~~4500-ClO$_2$ E~~			~~X~~	
~~IC~~	~~300.0~~				~~X~~	
~~IC~~	~~300.1~~				~~X~~	~~X~~

[1] ~~X indicates 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).~~

~~BOARD NOTE: Derived from 40 CFR 141.131(b) (1998).~~

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 ~~shall~~ 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) ~~Systems shall~~ 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

			~~Residual Measured~~[~~1~~]			
~~Methodology~~	~~Standard method~~	~~ASTM method~~	~~Free chlorine~~	~~Combined chlorine~~	~~Total chlorine~~	~~Chlorine dioxide~~
~~Amperometric Titration~~	~~4500-Cl D~~	~~D 1253-86~~	~~X~~	~~X~~	~~X~~	
~~Low Level Amperometric Titration~~	~~4500-Cl E~~				~~X~~	
~~DPD Ferrous Titrimetric~~	~~4500-Cl F~~		~~X~~	~~X~~	~~X~~	
~~DPD Colorimetric~~	~~4500-Cl G~~		~~X~~	~~X~~	~~X~~	
~~Syringaldazine (FACTS)~~	~~4500-Cl H~~		~~X~~			
~~Iodometric Electrode~~	~~4500-Cl I~~				~~X~~	
~~DPD~~	~~4500-ClO_2 D~~					~~X~~
~~Amperometric Method II~~	~~4500-ClO_2 E~~					~~X~~

~~[1] X indicates method is approved for measuring specified disinfectant residual.~~

~~BOARD NOTE: Derived from 40 CFR 141.131(c) (1998).~~

Methodology	Standard Method	ASTM Method	Residual Measured[1]
Amperometric Titration	4500-Cl D	D 1253-86	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, ~~systems~~ 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 ~~shall~~ must measure residual disinfectant concentration.

d) ~~Systems~~ A supplier required to analyze parameters not included in subsections (b) and (c) of this Section ~~shall~~ must use the methods listed below. A party approved by USEPA or the Agency ~~shall~~ must measure these parameters.

1) Alkalinity. All methods allowed in Section ~~611.611 (a) (21)~~ 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 ~~254nm~~ 254 nm (UV_{254}) (measured in ~~m^{-1}~~ m^{-1}) divided by the dissolved organic carbon (DOC) concentration (measured as mg/L). In order to determine SUVA, it is necessary to separately measure UV_{254} and DOC. When determining SUVA, ~~systems~~ 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 ~~system~~ 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 < 0.5 mg/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}). 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) for measuring pH.

BOARD NOTE: Derived from 40 CFR 141.131 (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.382 Monitoring Requirements

a) General requirements.

1) ~~Systems shall~~ A supplier must take all samples during normal operating conditions.

2) ~~Systems~~ 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 ~~system's~~ 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) ~~Systems shall~~ A supplier must use only data collected under the provisions of this Subpart 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. ~~Systems shall~~ A supplier must monitor at the frequency indicated in the following table:

~~Routine Monitoring Frequency for TTHM and HAA5~~

~~Type of system~~	~~Minimum monitoring frequency~~	~~Sample location in the distribution system~~
~~Subpart B system 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 serving from 500 to 9,999 persons.~~	~~One water sample per quarter per treatment plant.~~	~~Locations representing maximum residence time.[1]~~
~~Subpart B system 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 MCL, system 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 system meets reduced monitoring standards in Section 611.382(b)(1)(D).~~
~~System 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]~~
~~System 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 plant[2] 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, system 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 system meets standards in Section 611.382(b)(1)(D) for reduced monitoring.~~

~~[1] If a system 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.~~

~~[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.~~

~~BOARD NOTE: Derived from 40 CFR 141.132(b) (1998)~~ (2000)~~.~~

Routine Monitoring Frequency for TTHM and HAA5

Type of supplier	Minimum monitoring frequency	Sample location in the distribution system
Subpart B system	Four water samples	At least 25 percent

supplier serving 10,000 or more persons.	per quarter per treatment plant.	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 plant[2] 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.

[1] 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.

[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) ~~Systems~~ 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 serving 10,000 or more persons which 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 serving from 500 to 9,999 persons which 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 serving fewer than 500 persons may not reduce its monitoring to less than one sample per treatment plant per year.~~
~~System 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.~~
~~System 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 system qualifies for reduced monitoring.~~

~~BOARD NOTE: Derived from 40 CFR 132(c) (1998) (2000)~~.

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.

C) ~~Systems~~ 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 ~~systems which~~ a supplier that must monitor quarterly) or the result of the sample (for ~~systems which~~ a supplier that must monitor no more frequently than annually) is no more than 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively. ~~Systems~~ A supplier that ~~do~~ does not meet these levels ~~shall~~ 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 ~~quarter~~ monitoring period in which the ~~system~~ supplier exceeds 0.060 mg/L for TTHMs ~~and~~ or 0.045 mg/L for ~~TTHMs and~~ HAA5~~, respectively~~. For ~~systems~~ 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 ~~≥~~>0.080 mg/L or the HAA5 annual average is ~~≥~~>0.060 mg/L, the ~~system~~ 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 for TTHMs or 0.060 mg/L for HAA5.

D) ~~Systems~~ A supplier on increased monitoring may return to routine monitoring if, after at least one year of monitoring, ~~the~~ its TTHM annual average is ~~≤0.040~~ ≤0.060 mg/L and ~~the~~ its HAA5 annual average is ~~≤0.030~~ ≤0.045 mg/L.

E) The Agency may return a ~~system~~ supplier to routine monitoring.

2) Chlorite. ~~Community and nontransient noncommunity water systems~~ A CWS or NTNCWS supplier using chlorine dioxide, for disinfection or oxidation, ~~shall~~ must conduct monitoring for chlorite.

A) Routine monitoring.

i) Daily monitoring. ~~Systems shall~~ A supplier must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the ~~system shall~~ 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. ~~Systems shall~~ A supplier must take a three-sample set each month in the distribution system. The ~~system~~ 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 ~~system~~ 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 ~~system shall~~ 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 ~~system~~ supplier has not been required to conduct monitoring under subsection (b)(2)(B) of this Section. The ~~system~~ 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 ~~system~~ supplier is required to conduct monitoring under subsection (b)(2)(B) of this Section, at which time the ~~system shall~~ supplier must revert to routine monitoring.

3) Bromate.

A) Routine monitoring. ~~Community and nontransient noncommunity systems~~ A CWS or NTNCWS supplier using ozone, for disinfection or oxidation, ~~shall~~ must take one sample per month for each treatment plant in the system using ozone. ~~Systems shall~~ 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. ~~Systems~~ A supplier required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the ~~system~~ supplier demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly bromide measurements for one year. The ~~system~~ 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 based upon representative monthly measurements. If the running annual average source water bromide concentration is equal to or greater than 0.05 mg/L, the ~~system shall~~ 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. ~~Community and nontransient noncommunity systems~~ A CWS or NTNCWS supplier that ~~use~~ uses chlorine or chloramines ~~shall~~ must measure the residual disinfectant level in the distribution system at the same ~~points~~ 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. ~~Community, nontransient noncommunity, and transient noncommunity water systems~~ A CWS, an NTNCWS, or a transient non-CWS supplier that ~~use~~ uses chlorine dioxide for disinfection or oxidation ~~shall~~ must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the ~~system shall~~ 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 ~~system shall~~ 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 ~~system shall~~ 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 ~~system shall~~ 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) ~~shall~~ must monitor each treatment plant for TOC not past the point of combined filter effluent turbidity monitoring and representative of the treated water. ~~All systems~~ A supplier required to monitor under this subsection (d)(1) ~~shall~~ 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, ~~all systems shall~~ a system must monitor for alkalinity in the source water prior to any treatment. ~~Systems~~ 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 for two consecutive years, or less than 1.0 mg/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 ~~system shall~~ supplier must revert to routine monitoring in the month following the quarter when the annual average treated water TOC ≥ 2.0 mg/L.

e) Bromide. ~~Systems~~ A supplier required to analyze for bromate may reduce bromate monitoring from monthly to once per quarter, if the ~~system~~ supplier demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly measurements for one year. The ~~system shall~~ supplier must continue bromide monitoring to remain on reduced bromate monitoring.

f) Monitoring plans. Each ~~system~~ supplier required to monitor under this Subpart ~~shall~~ must develop and implement a monitoring plan. The ~~system shall~~ 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 ~~shall~~ 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 ~~system~~ 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).

(Source: Amended at 26 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 ~~system~~ 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 ~~system's~~ 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 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 ~~system~~ supplier to exceed the MCL, the ~~system~~ supplier is out of compliance at the end of that quarter.

b) Disinfection byproducts (DBPs).

1) TTHMs and HAA5.

A) For ~~systems~~ 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 ~~system~~ supplier as prescribed by Section 611.382(b)(1).

B) For ~~systems~~ a supplier monitoring less frequently than quarterly, ~~systems demonstrate~~ 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 ~~exceed~~ exceeds the MCL, the ~~system~~ 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 ~~system~~ supplier is in violation at the end of that quarter. ~~Systems~~ 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 ~~system~~ 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 ~~system~~ supplier takes more than one sample, the average of all samples taken during the month) collected by the ~~system~~ supplier, as prescribed by Section 611.382(b)(3). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the ~~system~~ 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 ~~twelve~~ 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 ~~system~~ 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 ~~system~~ supplier under Section 611.382(c)(1). If the average of quarterly averages covering any consecutive four-quarter period exceeds the MRDL, the ~~system~~ 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 ~~systems switch~~ 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 residual disinfectant was analyzed for each sample.

2) Chlorine dioxide.

A) Acute violations. Compliance must be based on consecutive daily samples collected by the ~~system~~ 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 ~~system~~ 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 ~~system~~ 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 ~~system~~ 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 ~~system~~ 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 ~~system~~ 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). ~~Systems~~ A supplier may begin monitoring to determine whether Step 1 TOC removals can be met ~~twelve~~ 12 months prior to the compliance date for the~~ system~~ supplier. This monitoring is not required and failure to monitor during this period is not a violation. However, any ~~system~~ supplier that does not monitor during this period, and then determines in the first ~~twelve~~ 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. ~~Systems~~ A supplier may apply for alternate minimum TOC removal (Step 2) requirements any time after the compliance date. For ~~systems~~ 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 ~~system~~ 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 ~~(1999), as amended at 65 Fed. Reg. 26022, May 4, 2000~~ (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.384 Reporting and Recordkeeping Requirements

a) ~~Systems~~ A supplier required to sample quarterly or more frequently ~~shall~~ 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. ~~Systems~~ A supplier required to sample less frequently than quarterly ~~shall~~ must report to the Agency within ten days after the end of each monitoring period in which samples were collected.

b) Disinfection byproducts (DBPs). ~~Systems shall~~ A supplier must report the information specified in the following table:

If ~~you are~~ a supplier is a . . .	~~You~~ The supplier must report...[1]
(1) ~~System~~ Supplier monitoring for TTHMs and HAA5 under the requirements of Section 611.382(b) on a quarterly or more frequent basis.	(~~1~~A) The number of samples taken during the last quarter. (~~2~~B) The location, date, and result of each sample taken during the last quarter. (~~3~~C) The arithmetic average of all

	samples taken in the last quarter. (~~4~~D) The annual arithmetic average of the quarterly arithmetic averages of this Section for the last four quarters. (~~5~~E) Whether, based on Section 611.383(b)(1), the MCL was ~~exceeded~~ violated.
(2) ~~System~~ Supplier monitoring for TTHMs and HAA5 under the requirements of Section 611.382(b) less frequently than quarterly (but at least annually).	(~~1~~A) The number of samples taken during the last year. (~~2~~B) The location, date, and result of each sample taken during the last monitoring period. (~~3~~C) The arithmetic average of all samples taken over the last year. (~~4~~D) Whether, based on Section 611.383(b)(1), the MCL was ~~exceeded~~ violated.
(3) ~~System~~ Supplier monitoring for TTHMs and HAA5 under the requirements of Section 611.382(b) less frequently than annually.	(~~1~~A) The location, date, and result of the last sample taken. (~~2~~B) Whether, based on Section 611.383(b)(1), the MCL was ~~exceeded~~ violated.
(4) ~~System~~ Supplier monitoring for chlorite under the requirements of Section 611.382(b).	(~~1~~A) The number of entry point samples taken each month for the last three months. (~~2~~B) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter. (~~3~~C) For each month in the reporting period, the arithmetic average of ~~all samples taken in the month~~ each three-sample set for all sample sets taken in the distribution system. (~~4~~D) Whether, based on Section 611.383(b)(3), the MCL was ~~exceeded~~ violated, ~~and~~ in which month it was ~~exceeded~~ violated, and how many times it was violated in each month.
(5) ~~System~~ Supplier monitoring for bromate under the requirements of Section 611.382(b).	(~~1~~A) The number of samples taken during the last quarter. (~~2~~B) The location, date, and result of

	each sample taken during the last quarter. (~~3~~C) The arithmetic average of the monthly arithmetic averages of all samples taken in the last year. (~~4~~D) Whether, based on Section 611.383(b)(2), the MCL was ~~exceeded~~ violated.

[1] The Agency may choose to perform calculations and determine whether the MCL was exceeded, in lieu of having the ~~system~~ supplier report that information.

~~BOARD NOTE: Derived from 40 CFR 141.134(b) (1998).~~

c) Disinfectants. ~~Systems shall~~ A supplier must report the information specified in the following table:

If ~~you are~~ a supplier is a . . .	~~You~~ The supplier must report...[1]
(1) ~~System~~ Supplier monitoring for chlorine or chloramines under the requirements of Section 611.382(c).	(~~1~~A) The number of samples taken during each month of the last quarter. (~~2~~B) The monthly arithmetic average of all samples taken in each month for the last ~~twelve~~ 12 months. (~~3~~C) The arithmetic average of all monthly averages for the last ~~twelve~~ 12 months. (~~4~~D) Whether, based on Secton 611.383(c)(1), the MRDL was ~~exceeded~~ violated.
(2) ~~System~~ Supplier monitoring for chlorine dioxide under the requirements of Section 611.382(c).	(~~1~~A) The dates, results, and locations of samples taken during the last quarter. (~~2~~B) Whether, based on Secton 611.383(c)(2), the MRDL was ~~exceeded~~ violated. (~~3~~C) Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute or nonacute.

[1] The Agency may choose to perform calculations and determine whether the MRDL was exceeded, in lieu of having the ~~system~~ supplier report that information.

~~BOARD NOTE: Derived from 40 CFR 141.134(c) (1998).~~

d) Disinfection byproduct (DBP) precursors and enhanced coagulation or enhanced softening. ~~Systems shall~~ A supplier must report the information specified in the following table:

If ~~you are~~ a supplier is a . . .	~~You~~ The supplier must report...[1]
(1) ~~System~~ 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).	(~~1~~A) The number of paired (source water and treated water~~, prior to continuous disinfection~~) samples taken during the last quarter. (~~2~~B) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. (~~3~~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. (~~4~~D) Calculations for determining compliance with the TOC percent removal requirements, as provided in Section 611.385(c)(1). (~~5~~E) Whether the ~~system~~ 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) ~~System~~ 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).	(~~1~~A) The alternative compliance criterion that the ~~system~~ supplier is using. (~~2~~B) The number of paired samples taken during the last quarter. (~~3~~C) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. (~~4~~D) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for ~~systems~~ a supplier meeting a criterion in Section 611.385(a)(2)(A) or (a)(2)(C) or of treated water TOC for ~~systems~~ a supplier meeting the criterion in Section 611.385(a)(2)(B). (~~5~~E) The running annual arithmetic average based on monthly averages (or

quarterly samples) of source water SUVA for ~~systems~~ a supplier meeting the criterion in Section 611.385(a)(2)(E) or of treated water SUVA for ~~systems~~ a supplier meeting the criterion in Section 611.385(a)(2)(F).

(~~6~~F) The running annual average of source water alkalinity for ~~systems~~ a supplier meeting the criterion in Section 611.385(a)(2)(C) and of treated water alkalinity for ~~systems~~ a supplier meeting the criterion in Section 611.385(a)(3)(A).

(~~7~~G) The running annual average for both TTHM and HAA5 for ~~systems~~ a supplier meeting the criterion in Section 611.385(a)(2)(C) or (D).

(~~8~~H) The running annual average of the amount of magnesium hardness removal (as $CaCO_3$ in mg/L) for ~~systems~~ a supplier meeting the criterion in Section 611.385(a)(3)(B).

(~~9~~I) Whether the ~~systems~~ supplier is in compliance with the particular alternative compliance criterion in Section 611.385(a)(2) or (3).

[1] The Agency may choose to perform calculations and determine whether the treatment technique was met, in lieu of having the ~~system~~ supplier report that information.

~~BOARD NOTE: Derived from 40 CFR 141.134(d) (1998).~~

BOARD NOTE: Derived from 40 CFR 141.134 (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001).

(Source: Amended at 26 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) ~~shall~~ must operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in subsection (b) of this Section unless the ~~system~~ 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). ~~Systems~~ A supplier ~~shall~~ must comply with monitoring requirements in Section 611.382(d) of this Part.

A) The ~~system's~~ supplier's source water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/L, calculated quarterly as a running annual average.

B) The ~~system's~~ supplier's treated water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/L, calculated quarterly as a running annual average.

C) The ~~system's~~ supplier's source water TOC level, measured ~~as required by~~ according to Section 611.381(d)(3), is less than 4.0 mg/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 (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 and 0.030 mg/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 and 0.030 mg/L, respectively. ~~Systems shall~~ 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 ~~a~~ an NPDWR.

D) The TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively, and the ~~system~~ supplier uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

E) The ~~system's~~ 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/mg-m, calculated quarterly as a running annual average.

F) The ~~system's~~ supplier's finished water SUVA, measured monthly according to Section 611.381(d)(4), is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

3) Additional alternative compliance standards for softening systems. ~~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. ~~Systems shall~~ A supplier must comply with monitoring requirements in Section 611.382(d). The alternative compliance standards are as follows:

A) ~~Softening~~ The supplier may undertake softening that results in lowering the treated water alkalinity to less than 60 mg/L (as $CaCO_3$), measured monthly according to Section 611.381(d)(1) and calculated quarterly as a running annual average.

B) ~~Softening~~ The supplier may undertake softening that results in removing at least 10 mg/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) ~~Systems shall~~ 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 ~~system's~~ 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). ~~Systems~~ A supplier practicing softening ~~shall~~ must meet the Step 1 TOC reductions in the far-right column (source water alkalinity >120 mg/L) for the 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	Source-water alkalinity, mg/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] ~~Systems~~ 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 one of the alternative compliance standards in subsection (a)(3) of this Section are not required to operate with enhanced softening.
[3] ~~Systems~~ A supplier practicing softening ~~shall~~ 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 ~~system~~ supplier. If the PWS cannot achieve the Step 1 TOC removal requirement due to water quality parameters or operational constraints, the Agency ~~shall~~ 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 ~~alternate~~ alternative minimum TOC removal (Step 2) requirements, the ~~system shall~~ supplier must meet the Step 1 TOC removals contained in subsection (b)(2) of this Section.

4) ~~Alternate~~ Alternative minimum TOC removal (Step 2) requirements. ~~Applications~~ An application made to the Agency by an enhanced coagulation ~~systems~~ 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 ~~and~~. The submitted bench- or pilot-scale testing must be used to determine the ~~alternate~~ alternative enhanced coagulation level.

A) For the purposes of this Subpart, "~~Alternate~~ 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 of alum (or equivalent amount of ferric salt) results in a TOC removal of ≤0.3 mg/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 ~~system~~ 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 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 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 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 ~~system shall~~ 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 per 10 mg/L alum added (or equivalent addition of iron coagulant) is reached.

D) The ~~system~~ 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 of TOC per 10 mg/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 ~~system~~ 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 of TOC per 10 mg/L of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the Agency ~~shall~~ 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 ~~shall~~ must comply with requirements contained in subsection (b)(2) or (b)(3) of this Section. ~~Systems shall~~ A supplier must calculate compliance quarterly, beginning after the ~~system~~ 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:

~~$\left(1-\left(\frac{\text{treatedwaterTOC}}{\text{sourcewaterTOC}}\right)\right)\times 100$~~

$$\left(1-\left(\frac{\text{treated water TOC}}{\text{source water TOC}}\right)\right)\times 100$$

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 ~~twelve~~ 12 months and divide by ~~twelve~~ 12.

E) If the value calculated in subsection (c)(1)(D) of this Section is less than 1.00, the ~~system~~ supplier is not in compliance with the TOC percent removal requirements.

2) ~~Systems~~ 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 ~~system's~~ supplier's treated or source water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/L, the ~~system~~ 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 of magnesium hardness (as $CaCO_3$), the ~~system~~ 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 ≤2.0 L/mg-m, the ~~system~~ 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 ≤2.0 L/mg-m, the ~~system~~ 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 (as $CaCO_3$), the ~~system~~ 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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.600 Applicability

The following types of suppliers shall conduct monitoring to determine compliance with the old

MCLs in Section 611.300 and the revised MCLs in 611.301, as appropriate, in accordance with this Subpart:

a) CWS suppliers.

b) NTNCWS suppliers.

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

~~BOARD NOTE: Derived from 40 CFR 141.23 (preamble) (1995).~~

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

Contaminant	MCL (mg/L, except asbestos)	Method	Detection Limit (mg/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] ~~(using a 2x preconcentration step; a lower MDL is possible using 4x preconcentration)~~	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] ~~(screening method for total cyanides)~~	0.02
		Automated distillation, spectrophotometric[3] ~~(screening method for total cyanides)~~	0.005
		Distillation, selective electrode[3] ~~(screening method for total cyanides)~~	0.05
		Distillation, amenable, spectrophotometric[4] ~~(for free cyanides)~~	0.02
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] ~~(using a 2x preconcentration step; a lower MDL is possible using 4x preconcentration)~~	0.005
		Inductively-coupled plasma-mass spectrometry	0.0005
Nitrate (as N)	10	Manual 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 temperature)	0.0007[5]
		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.

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.

8 Using selective ion monitoring, USEPA Method 200.8 (ICP-MS) is capable of obtaining an MDL of 0.0001 mg/L.

BOARD NOTE: ~~Derived~~ Subsections (a) through (c) of this Section are derived from 40 CFR 141.23 preamble (2000), and ~~paragraph~~ subsection (d) is derived from 40 CFR 141.23(a)(4)(i) ~~(1995)~~ (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). See the Board Note at Section 611.301(b) relating to the MCL for nickel.

(Source: Amended at 26 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 ~~a~~ an 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 ~~SWSs and mixed systems~~ an SWS or a mixed system supplier . Unless otherwise provided by SEP, ~~a~~ 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 ~~system~~ 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).

(Source: Amended at 26 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 ~~GWSs~~ a GWS supplier: at least one sample during each compliance period;

2) For ~~SWSs and mixed systems~~ an SWS or a mixed system supplier: at least one sample each year.

BOARD NOTE: Derived from 40 CFR 141.23(c)(1) (2000).

b) SEP Application.

1) The supplier may apply to the Agency for ~~a~~ an 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 ~~a~~ an 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).

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).

d) Standard for SEP reduction in monitoring. The Agency must grant ~~a~~ an 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 ~~and~~ or mixed system ~~suppliers~~ 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 ~~a~~ an SEP until it completes three rounds of monitoring from the new source.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(4) (2000).

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:

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 ~~CWSs~~ 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).

f) SEP Conditions and Revision.

1) ~~A~~ An 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).

2) In issuing ~~a~~ an SEP, the Agency must specify the level of the contaminant upon which the "reliably and consistently" determination was based. ~~A~~ An 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).

g) A supplier that exceeds the MCL ~~for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium,~~ 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).

h) Reduction of quarterly monitoring.

1) The Agency must grant ~~a~~ an 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 ~~a~~ an 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. ~~All SEPs~~ Any SEP that ~~allow~~ 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).

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).

(Source: Amended at 26 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 ~~supplier receives notification of the analytical result~~ initial sample was taken (but ~~no later than~~ not to exceed two weeks ~~after the initial sample was taken~~) 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 ~~of~~ 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) ~~(1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.609 Determining Compliance

Compliance with the MCLs of ~~Sections~~ Section 611.300 or 611.301 (as appropriate) must be determined based on the analytical ~~result(s)~~ 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 ~~a~~ confirmation ~~sample is taken~~ samples are required by the Agency, the determination of compliance will be based on the average of the ~~two samples~~ 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 exceed the MCLs in the initial sample, Section 611.606 requires confirmation sampling, and compliance is determined based on the average of the initial and confirmation samples.

d) ~~When the portion of the distribution system that is out of compliance is separable from other parts of the distribution system and has no interconnections, the supplier may give the public notice required by Subpart T only to persons served by that portion of the distribution system not in compliance.~~ Arsenic sampling results must be reported to the nearest 0.001 mg/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).

(Source: Amended at 26 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 available for compliance monitoring until July 1, 1996. These methods will 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) 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) 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 L of 30% hydrogen peroxide per 100 mL of solution. For direct analysis of arsenic with method 200.8 using ultrasonic nebulization, samples and standards must contain one mg/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 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 may not be used for compliance determinations for the revised MCL of 0.01 mg/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 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~~ absorption, furnace technique:

i) ASTM Method D2972-93 C, or

ii) Standard Methods, 18th or 19th ed.: Method 3113 B.

E) Atomic absorption, hydride technique:

i) ASTM Method D2972-93 B, or

ii) Standard Methods, 18th or 19th ed.: Method 3114 B.

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

4) Barium:

A) Inductively-coupled plasma:

i) USEPA Environmental Metals Methods: Method 200.7, or

ii) Standard Methods, 18th or 19th 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) Beryllium:

A) Inductively-coupled plasma:

        i) USEPA Environmental Metals Methods: Method 200.7, or

        ii) Standard Methods, 18th or 19th ed.: Method 3120 B.

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

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

    D) Atomic absorption, furnace technique:

        i) ASTM Method D3645-93 B, or

        ii) Standard Methods, 18th or 19th ed.: Method 3113 B.

6) Cadmium:

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

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

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

    D) Atomic absorption, furnace technique: Standard Methods, 18th or 19th ed.: Method 3113 B.

7) Chromium:

    A) Inductively-coupled plasma arc furnace:

        i) USEPA Environmental Metals Methods: Method 200.7, or

        ii) Standard Methods, 18th or 19th 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.

8) Cyanide:

A) Manual distillation (Standard Methods, 18th or 19th ed.: Method 4500-CN$^-$ C), followed by spectrophotometric, amenable:

i) ASTM Method D2036-91 B, or

ii) Standard Methods, 18th or 19th ed.: Method 4500-CN$^-$ G.

B) Manual distillation (Standard Methods, 18th or 19th ed.: Method 4500-CN$^-$ C), followed by spectrophotometric, manual:

i) ASTM Method D2036-91 A,

ii) Standard Methods, 18th or 19th ed.: Method 4500-CN$^-$ E, or

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

C) Manual distillation (Standard Methods, 18th or 19th ed.: Method 4500-CN$^-$ C), followed by semiautomated spectrophotometric: USEPA Environmental Inorganic Methods: Method 335.4.

D) Selective electrode: Standard Methods, 18th or 19th ed.: Method 4500-CN$^-$ F.

9) Fluoride:

A) Ion Chromatography:

i) USEPA Environmental Inorganic Methods: Method 300.0,

ii) ASTM Method D4327-91, or

iii) Standard Methods, 18th or 19th ed.: Method 4110 B.

B) Manual distillation, colorimetric SPADNS: Standard Methods, 18th or 19th ed.: Method 4500-F$^-$ B and D.

C) Manual electrode:

i) ASTM Method ~~D1179-93B~~ D1179-93 B, or

ii) Standard Methods, 18th or 19th ed.: Method 4500-F$^-$ C.

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

E) Automated alizarin:

  i) Standard Methods, 18th or 19th ed.: Method 4500-F^- E, or

  ii) Technicon Methods: Method 129-71W.

10) Mercury:

A) Manual cold vapor technique:

  i) USEPA Environmental Metals Methods: Method 245.1,

  ii) ASTM Method D3223-91, or

  iii) Standard Methods, 18th 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) Nickel:

A) Inductively-coupled plasma:

  i) USEPA Environmental Metals Methods: Method 200.7, or

  ii) Standard Methods, 18th or 19th 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) Nitrate:

A) Ion chromatography:

  i) USEPA Environmental Inorganic Methods: Method 300.0,

  ii) ASTM Method D4327-91,

  iii) Standard Methods, 18th or 19th 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 ed.: Method 4500-NO_3^- F.

C) Ion selective electrode:

  i) Standard Methods, 18th or 19th 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 ed.: Method 4500-NO_3^- E.

13) Nitrite:

A) Ion chromatography:

  i) USEPA Environmental Inorganic Methods: Method 300.0,

  ii) ASTM Method D4327-91,

  iii) Standard Methods, 18th or 19th 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 ed.: Method 4500-NO_3^- F.

C) Manual cadmium reduction:

i) ASTM Method D3867-90 B, or

ii) Standard Methods, 18th or 19th ed.: Method 4500-NO_3^- E.

D) Spectrophotometric: Standard Methods, 18th or 19th ed.: Method 4500-NO_2^- B.

14) Selenium:

A) Atomic absorption, hydride:

i) ASTM Method D3859-93 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 B, or

ii) Standard Methods, 18th or 19th ed.: Method 3113 B.

15) Thallium:

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

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

16) Lead:

A) Atomic absorption, furnace technique:

i) ASTM Method D3559-95 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 <u>or 19th</u> 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 <u>or 19th</u> ed.: Method 2510 B.

20) Calcium:

A) EDTA titrimetric:

i) ASTM Method D511-93 A, or

ii) Standard Methods, 18th <u>or 19th</u> ed.: Method 3500-Ca D.

B) Atomic absorption, direct aspiration:

i) ASTM Method D511-93 B, or

ii) Standard Methods, 18th <u>or 19th</u> ed.: Method 3111 B.

C) Inductively-coupled plasma:

i) USEPA Environmental Metals Methods: Method 200.7, or

ii) Standard Methods, 18th <u>or 19th</u> ed.: Method 3120 B.

21) Alkalinity:

A) Titrimetric:

i) ASTM Method D1067-92 B, or

ii) Standard Methods, 18th <u>or 19th</u> 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.

~~2~~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.

~~3~~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.

~~4~~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 months.

~~5~~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 months.

~~6~~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 months.

~~7~~8) Cyanide:

A) Preservative: Cool to ~~4°C~~ 4° C. Add sodium hydroxide to pH > 12. See the analytical methods for information on sample preservation.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.

~~8~~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 month.

~~9~~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.

~~10~~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 months.

~~11~~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.

~~12~~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.

~~13~~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.

~~14~~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 months.

~~15~~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 months.

c) Analyses under this Subpart must be conducted by laboratories that received approval from USEPA or the Agency. Laboratories may conduct sample analyses for antimony, beryllium, cyanide, nickel, and thallium under provisional certification granted by the Agency until January 1, 1996. The Agency ~~shall~~ 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:

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

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

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

   B) Arsenic: ± 30% at greater than or equal to 0.003 mg/L.

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

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

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

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

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

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

   ~~H~~I) Fluoride: ± 10% at 1 to 10 mg/L.

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

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

   ~~K~~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.

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

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

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

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

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

a) Definitions. As used in this Section:

“Detect” and “detection” means that the contaminant of interest is present at a level greater than or equal to the “detection limit.”

“Detection limit” means 0.0005 mg/L.

BOARD NOTE: Derived from 40 CFR 141.24(f)(7), (f)(11), (f)(14)(i), and (f)(20) ~~(1999)~~ (2000). 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 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 ~~(1999)~~ (2000). 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 ~~GWSs~~ a GWS. Unless otherwise provided by ~~a~~ an 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 ~~SWSs and~~ an SWS or mixed ~~systems~~ system supplier. Unless otherwise provided by ~~a~~ an SEP granted by the Agency pursuant to Section 611.110, ~~a~~ 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 ~~a~~ an 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) ~~(1999)~~ (2000).

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 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 ~~a~~ an 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 ~~a~~ an 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) ~~(1999)~~ (2000), 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~~ assessment. The Agency must consider the factors of Section 611.110(e) in granting ~~a~~ an SEP from the requirements of subsection (d), (e), or (f) of this Section sought pursuant to subsection (g) of this Section.

i) ~~A~~ An SEP issued to a GWS pursuant to subsection (g) of this Section is for a maximum of six years, except that ~~a~~ an 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 ~~a~~ an SEP, except as to ~~a~~ an 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 ~~a~~ an SEP pursuant to subsection (g) of this Section. Based on this application, the Agency must either:

1) If it determines that the PWS meets the standard of Section 611.610(e), issue ~~a~~ an 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 ~~SWSs~~ an SWS ~~and~~ or mixed ~~systems~~ system supplier.

j) Special considerations for ~~SEPs~~ an SEP for an SWS ~~and~~ or mixed ~~systems~~system supplier.

1) The Agency must determine that ~~a~~ an SWS is not vulnerable before issuing ~~a~~ an SEP pursuant to Section 611.110 to ~~a~~ an SWS supplier. ~~A~~ An SEP issued to ~~a~~ 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 ~~a~~ an SEP issued to ~~a~~ 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) ~~(1999)~~ (2000), the provision applicable to GWSs, and 40 CFR 141.24(f)(10) ~~(1999)~~ (2000), 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 ~~and~~ or mixed ~~systems~~ system, and subsection (i) of this Section relates to ~~GWSs~~ a GWS supplier. Although 40 CFR 141.24(f)(7) and (f)(10) are silent as to a mixed ~~systems~~ system supplier, the Board has included a mixed ~~systems~~ system supplier with ~~SWSs~~ 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:

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 ~~a~~ an SEP pursuant to Section 611.110 that allows a supplier to reduce the monitoring frequency to annual at a sampling point if it determines that the sampling point is reliably and consistently below the MCL.

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

i) For a GWS, two quarterly samples.

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

C) In issuing ~~a~~ an SEP, the Agency must specify the level of the contaminant upon which the “reliably and consistently” determination was based. ~~All SEPs~~ Any SEP that ~~allow~~ 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 ~~a~~ an 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):

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 ~~a~~ an 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 ~~a~~ an SEP pursuant to Section 611.110 that allows a supplier to reduce the monitoring frequency to annually if it determines that the sampling point is reliably and consistently below the MCL.

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

C) In issuing ~~a~~ an SEP, the Agency must specify the level of the contaminant upon which the “reliably and consistently” determination was based. ~~All SEPs~~ Any SEP that ~~allow~~ 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 ~~quarter(s)~~ quarters that previously yielded the highest analytical result.

m) Confirmation samples. The Agency may issue ~~a~~ an 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) ~~(1999)~~, 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.

~~1~~6) ~~For suppliers~~ Until January 22, 2004, for a supplier that ~~conduct~~ 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.

~~2~~7) ~~If~~ 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. ~~If~~ 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) ~~(1999)~~, which USEPA removed and reserved at 59 Fed. Reg. 62468 (Dec. 5, 1994). This statement maintains structural consistency with the federal regulations.

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

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

A) Analyze performance evaluation (PE) samples that include these substances provided by the Agency pursuant to 35 Ill. Adm. Code ~~183.125(c)~~ 186.170;

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

C) 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 ~~performance evaluation~~ PE sample when the actual amount is greater than or equal to 0.010 mg/L;

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

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

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

A) Analyze ~~performance evaluation~~ PE samples provided by the Agency pursuant to 35 Ill. Adm. Code~~ 183.125(c)~~ 186.170;

B) 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 ~~performance evaluation~~ PE sample;

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

D) Obtain certification pursuant to subsection (q)(1) of this Section 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 ~~the effective date of this Section~~ 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 ~~a~~ an 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 ~~a~~ an 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:

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

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

u) Each supplier 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 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) ~~(1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (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).

(Source: Amended at 26 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.

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 ~~SWSs and~~ an SWS or mixed~~ systems~~ system supplier. Unless otherwise provided by SEP, ~~a~~ 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 ~~a~~ an 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) ~~(1999)~~ (2000).

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 ~~a~~ an SEP that releases it from the requirements of subsection (d) of this Section. ~~A~~ An 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 ~~a~~ an 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 ~~a~~ an SEP pursuant to Section 610.110 that reduces the monitoring frequency to annual.

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

i) For a GWS, two quarterly samples.

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

C) The Agency must grant ~~a~~ an 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. ~~All SEPs~~ Any SEP that ~~allow~~ 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 ~~a~~ an 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

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 ~~a~~ an SEP pursuant to Section 611.110 that reduces the monitoring frequency to annual.

B) A request for ~~a~~ an SEP must include, at a minimum, the results from four quarterly samples.

C) The Agency must grant ~~a~~ an 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. ~~All SEPs~~ Any SEP that ~~allow~~ 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) This subsection (k) corresponds with 40 CFR 141.24(h)(11) (1999), which~~

~~USEPA removed at 65 Fed. Reg. 26022 (May 4, 2000). This statement maintains structural consistency with the federal regulations.~~

k) Compliance with the MCLs for the Phase II, Phase IIB, and Phase V SOCs shall be determined based on the analytical results obtained at each sampling point. 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) ~~(1999)~~, 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, ~~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 ~~a~~ an 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 ~~a~~ an 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 enforcement authority to the

State and would serve no useful function as part of the State's rules. This statement maintains structural consistency with USEPA rules.

q) Each supplier 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):

Aroclor	Detection Limit (mg/L)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

2) for other Phase II, Phase IIB, and Phase V SOCs:

Contaminant	Detection Limit (mg/L)
Alachlor	0.0002
Aldicarb	0.0005
Aldicarb sulfoxide	0.0005
Aldicarb sulfone	0.0008
Atrazine	0.0001
Benzo(a)pyrene	0.00002
Carbofuran	0.0009
Chlordane	0.0002
2,4-D	0.0001
Dalapon	0.001
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

s) Laboratory certification.

1) Analyses under this Section must only be conducted by laboratories that have received approval by USEPA or the Agency according to the ~~following~~ conditions 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 ~~performance evaluation~~ 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%

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) ~~(1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.680 Sampling, Analytical and other Requirements

a) Required monitoring.

1) ~~CWS suppliers~~ 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 ~~shall~~ must analyze for

TTHMs in accordance with this ~~Section~~Subpart.

2) For the purpose of this ~~Section~~Subpart, the minimum number of samples required to be taken by the ~~system~~ supplier must be based on the number of treatment plants used by the ~~system~~ supplier. However, the Agency shall, by special exception permit, 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) ~~CWSs~~ A CWS supplier serving 10,000 or more individuals.

1) For ~~CWSs~~ a CWS supplier utilizing surface a water ~~sources~~ source in whole or in part, and for ~~CWSs~~ a CWS supplier utilizing only a groundwater ~~sources~~ 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 ~~of~~ 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, by special exception permit, 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 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 ~~shall~~ 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, by special exception permit, 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 from 40 CFR 141.30(a) and (b) ~~(1989)~~ (2000), modified to remove the limitation regarding addition of disinfectant.

c) Surface water sources for ~~CWSs~~ a CWS supplier serving fewer than 10,000 individuals. Suppliers ~~shall~~ must submit 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 ~~shall~~ 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 ~~shall~~ must submit to the Agency samples in accordance with the sampling frequency specified in subsection (b).

BOARD NOTE: This is an additional State requirement.

d) Groundwater sources for ~~CWSs~~ a CWS supplier serving fewer than 10,000 individuals. Suppliers are not required to submit samples for THM analysis under this ~~Section~~Subpart.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 26 Ill. Reg. ________, effective ________________________)

Section 611.685 Analytical Methods

Sampling and analyses made pursuant to this Subpart must be conducted by one of the total trihalomethanes (TTHM) methods, as directed in Section 611.645; ~~and~~ 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) ~~(1998)~~ (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001).

(Source: Amended at 26 Ill. Reg. ________, effective ________________________)

SUBPART R: ENHANCED FILTRATION AND DISINFECTION

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~~ Part. The requirements of this Subpart are applicable to a Subpart B system supplier serving 10,000 or more persons, beginning January 1, 2002, unless otherwise specified in this Subpart. The regulations in this Subpart 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 ~~shall~~ 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:

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 ~~public water system~~ PWS supplier subject to the requirements of this Subpart is considered to be in compliance with the requirements of subsection (a) of this Section if:

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) ~~Systems shall~~ A supplier must not begin construction of uncovered finished water storage facilities after February 16, 1999.

BOARD NOTE: Derived from 40 CFR 141.170 (2000), as amended at 66 Fed. Reg. 3770 (January 16, 2001).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.741 Standards for Avoiding Filtration

In addition to the requirements of Section 611.232, a ~~public water system~~ PWS supplier subject to the requirements of this Subpart that does not provide filtration ~~shall~~ 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, ~~systems shall~~ 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:

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

2) Monitor the occurrence of activities ~~which~~ 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 ~~shall~~ 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 ~~system's~~ supplier's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water ~~system~~ supplier has maximized land ownership or controlled land use within the watershed.

BOARD NOTE: Derived from 40 CFR 141.171 (2000).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.742 Disinfection Profiling and Benchmarking

a) Determination of ~~systems~~ a supplier required to profile. A ~~public water system~~ PWS supplier subject to the requirements of this Subpart ~~shall~~ 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) ~~Those systems~~ A supplier that collected data under the provisions of 40 CFR 141 Subpart M (Information Collection Rule) ~~shall~~ must use the results of the samples collected during the last four quarters of required monitoring under ~~Section 611.382~~ former 40 CFR 141.42 (1994), as amended at 59 Fed. Reg. 62456 (Dec. 5, 1994).

B) ~~Those systems~~ A supplier that ~~use~~ uses "grandfathered" HAA5 occurrence data that meet the provisions of subsection (a)(2)(B) of this Section ~~shall~~ must use TTHM data collected at the same time under the provisions of Section 611.680.

C) ~~Those systems~~ A supplier that ~~use~~ uses HAA5 occurrence data that meet the provisions of subsection (a)(2)(C)(i) of this Section ~~shall~~ 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) ~~Those systems~~ A supplier that collected data under the provisions of 40 CFR 141 Subpart M (Information Collection Rule) ~~shall~~ must use the results of the samples collected during the last four quarters of required monitoring under ~~Section 611.382~~ former 40 CFR 141.42 (1994), as amended at 59 Fed. Reg. 62456 (Dec. 5, 1994).

B) ~~Those systems~~ A supplier that ~~have~~ 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) ~~Those systems~~ A supplier that ~~have~~ has not collected four quarters of HAA5 occurrence data that meets the provisions of either subsection (a)(2)(A) or (B) of this Section by March 31, 1999 ~~shall~~ must either:

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 ~~system~~ supplier may request that the Agency approve a more representative annual data set than the data set determined under subsection (a)(1) or (2) of this Section for the purpose of determining applicability of the requirements of this Section.

4) The Agency may require that a ~~system~~ supplier use a more representative annual data set than the data set determined under subsection (a)(1) or (2) of this Section for the purpose of determining the applicability of the requirements of this Section.

5) The ~~system shall~~ supplier must submit data to the Agency on the schedule in subsections (a)(5)(A) through ~~(D)~~ (a)(5)(E) of this Section.

A) ~~Those systems~~ A supplier that collected TTHM and HAA5 ~~date~~ data under the provisions of 40 CFR Subpart M (Information Collection Rule), as required by ~~subsection~~ subsections (a)(1)(A) and (a)(2)(A) of this Section, ~~shall~~ must submit the results of the samples collected during the last ~~twelve~~ 12 months of required monitoring under Section 611.685 not later than December 31, 1999.

B) ~~Those systems~~ A supplier that ~~have~~ has collected four consecutive quarters of HAA5 occurrence data that meets the routine monitoring sample number and location for TTHM in ~~Section 611.382~~ 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, ~~shall~~ must submit that data to the Agency not later than April 30, 1999. Until the Agency has approved the data, the ~~system shall~~ supplier must conduct monitoring for HAA5 using the monitoring requirements specified under subsection (a)(2)(C) of this Section.

C) ~~Those systems~~ A supplier that ~~conduct~~ conducts monitoring for HAA5 using the monitoring requirements specified by subsections (a)(1)(C) and (a)(2)(C)(i) of this Section~~,~~ ~~shall~~ must submit TTHM and HAA5 data not later than March 31, 2000.

D) ~~Those systems~~ A supplier that ~~elect~~ elects 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, ~~shall~~ must notify the Agency in writing of ~~their~~ its election not later than December 31, 1999.

E) If the ~~system~~ supplier elects 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 ~~system shall~~ supplier must submit this request in writing not later than December 31, 1999.

6) Any ~~system~~ supplier having either a TTHM annual average ≥ 0.064 mg/L or an HAA5 annual average ≥ 0.048 mg/L during the period identified in subsections (a)(1) and (a)(2) of this Section ~~shall~~ must comply with subsection (b) of this Section.

b) Disinfection profiling.

1) Any ~~system~~ supplier that meets the standards in subsection (a)(6) of this Section ~~shall~~ must develop a disinfection profile of its disinfection practice for a period of up to three years. The Agency ~~shall~~ must determine the period of the disinfection profile, with a minimum period of 1 year.

2) The ~~system shall~~ supplier must monitor daily for a period of ~~twelve~~ 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 ~~system shall~~ supplier must begin this monitoring not later than April 1, 2000. As a minimum, the ~~system~~ supplier with a single point of disinfectant application prior to entrance to the distribution system ~~shall~~ must conduct the monitoring in subsections (b)(2)(A) through (b)(2)(D) of this Section. A ~~system~~ supplier with more than one point of disinfectant application ~~shall~~ must conduct the monitoring in subsections (b)(2)(A) through (b)(2)(D) of this Section for each disinfection segment. The ~~system shall~~ 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 ~~system~~ 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 ~~time(s)~~ times ("T") must be determined for each day during peak hourly flow.

D) The residual disinfectant ~~concentration(s)~~ 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 ~~system~~ 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 ~~system~~ supplier may elect to meet the requirements of subsection (b)(3)(B) of this Section.

A) A PWS supplier that has three years of existing operational data may submit 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 ~~April 1, 2000~~ March 31, 2000. The Agency ~~shall~~ 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 ~~shall~~ 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 ~~shall~~ 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 ~~system shall~~ supplier must calculate the total inactivation ratio as

follows:

A) If the ~~system~~ 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 ~~system shall~~ supplier must calculate the total inactivation ratio (Σ ($CT_{calc}/CT_{99.9}$)) by determining ~~(~~$CT_{calc}/CT_{99.9}$~~)~~ for each sequence and then adding the ~~(~~$CT_{calc}/CT_{99.9}$~~)~~ values together to determine ~~(~~Σ ($CT_{calc}/CT_{99.9}$)~~)~~.

B) If the ~~system~~ supplier uses more than one point of disinfectant application before the first customer, the system ~~shall~~ 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 (Σ ($CT_{calc}/CT_{99.9}$)) must be calculated using the method in subsection (b)(4)(A) of this Section.

C) The ~~system shall~~ 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 ~~system~~ supplier that uses either chloramines or ozone for primary disinfection ~~shall~~ must also calculate the logs of inactivation for viruses using a method approved by the Agency.

6) The ~~system shall~~ 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 ~~system~~ 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 ~~shall~~ must consult with the Agency prior to making such change. Significant changes to

disinfection practice are:

A) Changes to the point of disinfection;

B) Changes to the ~~disinfectant(s)~~ disinfectants used in the treatment plant;

C) Changes to the disinfection process; and

D) Any other modification identified by the Agency.

2) Any ~~system~~ supplier that is modifying its disinfection practice ~~shall~~ 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 ~~system shall~~ supplier must determine the lowest average monthly Giardia lamblia inactivation in each year of profiling data. The ~~system shall~~ 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 ~~system~~ supplier that uses either chloramines or ozone for primary disinfection ~~shall~~ must also calculate the disinfection benchmark for viruses using a method approved by the Agency.

4) The ~~system shall~~ 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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.743 Filtration

A PWS supplier subject to the requirements of this Subpart that does not meet all of the standards in this Subpart and Subpart B of this Part for avoiding filtration ~~shall~~ must provide treatment consisting of both disinfection, as specified in Section 611.242, and filtration treatment ~~which~~ 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 ~~systems~~ 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 ~~system's~~ supplier's filtered water must at no time exceed 1 NTU, measured as specified in Sections 611.531 and 611.533.

3) A ~~system~~ 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 ~~shall~~ must set turbidity performance requirements that the ~~system shall~~ supplier must meet at least 95 percent of the time and that the ~~system shall~~ 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).

(Source: Amended at 26 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 ~~public water system~~ PWS supplier subject to the requirements of this Subpart 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 ~~public water system~~ PWS supplier subject to the requirements of this Subpart 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 ~~systems~~ a supplier using conventional filtration treatment or direct filtration, or that exceed the maximum level under Section 611.743(b).

b) ~~Systems~~ A supplier must maintain the results of individual filter monitoring taken under Section 611.744 for at least three years. ~~Systems~~ A supplier must report that ~~they have~~ 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. ~~Systems~~ A supplier must report individual filter turbidity measurement results taken under Section 611.744 within ten days after the end of each month the ~~system~~ supplier serves water to the public only if measurements demonstrate one or more of the conditions in subsections (b)(1) through (4) of this Section. ~~Systems~~ A supplier that ~~use~~ uses lime softening may apply to the Agency for alternative exceedence levels for the levels specified in subsections (b)(1) through (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 ~~system~~ supplier must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the ~~system~~ supplier must either produce a filter profile for the filter within seven days after the exceedence (if the ~~system~~ 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 ~~system~~ supplier must report the filter number, the turbidity, and the dates on which the exceedence occurred. In addition, the ~~system~~ supplier must either produce a filter profile for the filter within seven days after the exceedence (if the ~~system~~ 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 ~~system~~ supplier must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the ~~system~~ 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 ~~system~~ supplier must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the ~~system~~ 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 ~~practical~~ possible, but no later than ~~24 hours after the exceedence is known, in accordance with the public notification requirements under Section 611.903(b)(3)~~ 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 ~~consult with~~ inform the Agency as soon as ~~practical~~ possible, but no later than ~~24 hours after the exceedence is known, in accordance with the public notification requirements under Section 611.903(b)(3)~~ 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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

SUBPART U: CONSUMER CONFIDENCE REPORTS

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) ~~A CWS~~ Ending in the report due by July 1, 2001, a supplier that detects arsenic at levels above 25 μg/L, but below ~~the MCL~~ 0.05 mg/L, and beginning in the report due by July 1, 2002, a supplier that detects arsenic above 0.005 mg/L and up to and including 0.01 mg/L must do the following:

1) The ~~CWS~~ supplier must include in its report a short informational statement about arsenic, using the following language: ~~USEPA is reviewing the drinking water standard for arsenic because of special concerns that it may not be stringent enough. Arsenic~~ “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 ~~CWS~~ supplier may write its own educational statement, but only in consultation with the Agency.

c) A ~~CWS~~ supplier that detects nitrate at levels above 5 mg/L, but below the MCL~~,~~ must do the following:

1) The ~~CWS~~ 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, 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 January 22, 2006, a CWS supplier that detects arsenic above 0.01 mg/L and up to and including 0.05 mg/L must include the arsenic health effects language prescribed by Appendix A to this Part.

BOARD NOTE: Derived from 40 CFR 141.154~~ (1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (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).

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)

Section 611.Appendix A Regulated Contaminants

Microbiological contaminants:

Contaminant (units): Total Coliform Bacteria
Traditional MCL in mg/L: MCL: (~~systems~~ a supplier that ~~collect~~ collects ≥40 samples/month) fewer than 5% of monthly samples are positive; (systems that collect < 40 samples/month) fewer than 1 positive monthly sample.
To convert for CCR, multiply by: --
MCL in CCR units: MCL: (~~systems~~ a supplier that ~~collect~~ collects ≥40 samples/month) fewer than 5% of monthly samples are positive; (~~systems~~ a supplier that ~~collect~~ collects < 40 samples/month) fewer than 1 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: 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: 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: 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: 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)
Traditional MCL in mg/L: 15 pCi/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)
Traditional MCL in mg/L: 5 pCi/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)
Traditional MCL in mg/L: 30 μg/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: 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: 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: ~~N/A~~ 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: 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: 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: 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): Cadmium (ppb)
Traditional MCL in mg/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): Chromium (ppb)
Traditional MCL in mg/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: 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: 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: 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: 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]~~ (inorganic) (ppb)
Traditional MCL in mg/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: 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: 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: 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: 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: 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]~~ (silvex) (ppb)
Traditional MCL in mg/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: 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: 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: 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]~~ (PAH) (nanograms/L)
Traditional MCL in mg/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: 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: 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: 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: 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 or reproductive difficulties.

Contaminant (units): Di(2-ethylhexyl)phthalate (ppb)
Traditional MCL in mg/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 in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.

Contaminant (units): Dibromochloropropane ~~[DBCP]~~ (DBCP) (ppt)
Traditional MCL in mg/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: 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: 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]~~ (2,3,7,8-TCDD) (ppq)
Traditional MCL in mg/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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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]~~ (vydate) (ppb)
Traditional MCL in mg/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]~~ (polychlorinated biphenyls) (ppt)
Traditional MCL in mg/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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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~~ acids (HAA5) (ppb)
Traditional MCL in mg/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: 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: 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: 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: 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: 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: 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]~~ (total trihalomethanes) (ppb)
Traditional MCL in mg/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.
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 ~~systems~~ system, and may have an increased risk of getting cancer.

Contaminant (units): Toluene (ppm)
Traditional MCL in mg/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: 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: 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~~ action level
MCL	~~Maximum Contaminant Level~~ maximum contaminant level
MCLG	~~Maximum Contaminant Level Goal~~ maximum contaminant level goal
MFL	million fibers per liter
MRDL	~~Maximum Residual Disinfectant Level~~ maximum residual disinfectant level
MRDLG	~~Maximum Residual Disinfectant Level Goal~~ maximum residual

	disinfectant level goal
mrem/year	millirems per year (a measure of radiation absorbed by the body)
N/A	~~Not Applicable~~ not applicable
NTU	~~Nephelometric Turbidity Units~~ nephelometric turbidity units(a measure of water clarity)
pCi/L	picocuries per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/L)
ppb	parts per billion, or micrograms per liter (μg/L)
ppt	parts per trillion, or nanograms per liter
ppq	parts per quadrillion, or picograms per liter
TT	~~Treatment Technique~~ treatment technique

BOARD NOTE: Derived from Appendix A to Subpart O to 40 CFR 141 (2000)~~, as added at 65 Fed. Reg. 76749 (December 7, 2000), effective December 8, 2003~~, 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).

(Source: Amended at 26 Ill. Reg. ________ effective ______________________)

Section 611.Appendix G NPDWR Violations and Situations Requiring Public Notice

See note 1 at the end of this Appendix 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 >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)	3	611.531(a), 611.532(b), 611.533(a), 611.744
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	3	611.742, 611.744
8. Filter Backwash Recycling Rule violations	2	611.276	3	611.276

B. Inorganic Chemicals (IOCs)

1. Antimony	2	611.301(b)	3	611.600, 611.601, 611.603
2. Arsenic	2	~~611.300(b),~~ ~~611.612(c)~~ [10] 611.301(b)	3	~~611.100,~~ ~~611.101,~~ ~~611.612~~ [9] 611.601, 611.612(a), 611.612(b)
3. Asbestos (fibers >10 m)	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)	~~[8]-~~[10]1, 3	611.600, 611.601, 611.604, 611.606
12. Nitrite	1	611.301(b)	~~[8]-~~[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, for copper is 1.3 mg/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	~~[9]~~-[11]2	611.330(e)	~~[10]~~-[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).~~[11]~~[13]

1. Total trihalomethanes (TTHMs)	2	~~[12]~~-[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-~~[13]~~[15], 3	611.382(a), (c), 611.383(c)(2)
8. Chlorine dioxide (MRDL), where ~~sample(s)~~ samples in distribution system the next day are also above MRDL	-~~[14]~~[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
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:~~-[15]~~ [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 1415 Variance or a Section 1416 Exemption:

A. Operation under relief equivalent to a SDWA section 1415 variance or a section 1416 exemption	3	~~[16]-~~ [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, ~~[17]-~~ [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 ~~non-community systems~~ 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 ~~[18]~~ [20]	1	N/A	N/A	N/A
F. Other situations as determined by the Agency by ~~a~~ an 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 ~~a~~ an SEP issued pursuant to Section 611.110. The Agency may, by ~~a~~ an 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 ~~a~~ an SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a ~~system~~ 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) or the Interim Enhanced Surface Water Treatment Rule (IESWTR) 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 ~~a~~ an SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a ~~system~~ 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 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 ~~systems~~ 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.

~~8.~~ 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.

~~9.~~ 11. The uranium MCL Tier 2 violation citations are effective December 8, 2003 for ~~all community water systems~~ a CWS supplier.

~~10.~~ 12. The uranium Tier 3 violation citations are effective December 8, 2000 for ~~all community water systems~~ a CWS supplier.

~~11.~~ 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.

~~12.~~ 14. Section 611.310 will no longer apply after January 1, 2004.

~~13.~~ 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.

~~14.~~ 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.

~~15.~~ 17. Some water suppliers must monitor for certain unregulated contaminants listed in Section 611.510.

~~16.~~ 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 . . .."

~~17.~~ 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.

~~18.~~ 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 (2000)~~, as amended at 65 Fed. Reg. 76750 (December 7, 2000), effective December 8, 2003~~.

(Source: Amended at 26 Ill. Reg. ________ effective ______________________)

Section 611.Appendix H Standard Health Effects Language for Public Notification

Contaminant	MCLG [1] mg/L	MCL [2] mg/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)	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)~~ and~~, Interim Enhanced Surface Water Treatment Rule (IESWTR) violations, and Filter Backwash Recycling Rule (FBRR)			
3. Giardia lamblia (SWTR/IESWTR)	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)			

5. Heterotrophic plate count (HPC) bacteria[9] (SWTR/IESWTR)			
6. Legionella (SWTR/IESWTR)			
7. Cryptosporidium (IESWTR/FBRR)			
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]	~~None~~ 0	~~0.05~~ 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~~[11]~~[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-~~[12]~~ [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-~~[13]~~ [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 or reproductive difficulties.
34. Di(2-ethylhexyl)-phthalate	Zero	0.006	Some people who drink water containing di(2-ethylhexyl)-phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and 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. Hexachlorocyclopentadiene	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
47. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

48. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
49. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
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-~~[14]~~[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-~~[15]~~[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	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~~[16]~~ [17]	Zero	30 μg/L	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals: 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)~~[17]~~ [18]			
80. Total trihalomethanes (TTHMs)	N/A	0.10/0.080~~[18]~~ [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~~[20]~~ [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)[~~21~~ 22]	4.0 (MRDL)[~~22~~ 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, and the 1998 Interim 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), and the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR). 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), and the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR). 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.

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 and IESWTR 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 and there is no MCLG.

~~11.~~ 12. Millions of fibers per liter.

~~12.~~ 13. Action Level = 0.015 mg/L.

~~13.~~ 14. Action Level = 1.3 mg/L.

~~14.~~ 15. Millirems per year.

~~15.~~ 16. Picocuries per liter.

~~16.~~ 17. The uranium MCL is effective December 8, 2003 for all community water systems.

~~17.~~ 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.

~~18.~~ 19. The MCL of 0.10 mg/L for TTHMs is 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. On January 1, 2004, a supplier serving fewer than 10,000 will have to comply with the new MCL as well.

~~19.~~ 20. The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.

~~20.~~ 21. The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic acids.

~~21.~~ 22. “MRDLG” means maximum residual disinfectant level goal.

~~22.~~ 23. “MRDL” means maximum residual disinfectant level.

BOARD NOTE: Derived from Appendix B to Subpart Q to 40 CFR 141 (2000), as ~~added~~ amended at 65 Fed. Reg. 76751 (December 7, 2000), effective December 8, 2003, and at 66 Fed. Reg. 6976 (January 22, 2001).

BOARD NOTE: Derived from Appendix B to Subpart Q to 40 CFR 141~~, as added at 65 Fed. Reg. 26043 (May 4, 2000)~~ (2000), as amended at 66 Fed. Reg. 6976 (January 22, 2001).

(Source: Amended at 26 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))	July 30, 1992

(corresponding with Section 611.311(a))
(o-dichlorobenzene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, 1,2-dichloropropane, ethylbenzene, monochlorobenzene, styrene, tetrachloroethylene, toluene, and xylenes (total))

Phase II SOCs (40 CFR 141.60(a)(2)) July 30, 1992
(corresponding with Section 611.311(c))
(alachlor, atrazine, carbofuran, chlordane, dibromochloropropane, ethylene dibromide, heptachlor, heptachlor epoxide, lindane, methoxychlor, polychlorinated biphenyls, toxaphene, 2,4-D, and 2,4,5-TP ~~(Silvex)~~ (silvex))

Lead and Copper (40 CFR, Subpart I) December 7, 1992
(corresponding with Subpart G of this Part)
(lead and copper corrosion control, water treatment, public education, and lead service line replacement requirements of 40 CFR 141.81 through 141.85)

Phase IIB IOC (40 CFR 141.60(b)(2)) January 1, 1993
(corresponding with Section 611.301(b))
(barium)

Phase IIB SOCs (40 CFR 141.60(a)(2)) January 1, 1993
(corresponding with Section 611.311(c))
(aldicarb, aldicarb sulfone, aldicarb sulfoxide, and pentachlorophenol; ~~U.S. EPA~~ USEPA stayed the effective date as to the MCLs for aldicarb, aldicarb sulfone, and aldicarb sulfoxide, but the monitoring requirements became effective January 1, 1993)

Phase V IOCs (40 CFR 141.60(b)(3)) January 17, 1994
(corresponding with Section 611.301(b))
(antimony, beryllium, cyanide, nickel, and thallium)

Phase V VOCs (40 CFR 141.60(a)(3)) January 17, 1994
(corresponding with Section 611.311(a))
(dichloromethane, 1,2,4-trichlorobenzene, and 1,1,2-trichloroethane)

Phase V SOCs (40 CFR 141.60(a)(3)) January 17, 1994
(corresponding with Section 611.311(c))
(benzo[a]pyrene, dalapon, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate dinoseb, diquat, endothall, endrin, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram, simazine, and 2,3,7,8-TCDD)

Disinfection/disinfectant byproducts (40 CFR 141.64 & 141.65)
Smaller Systems (serving ≤10,000 persons) December 16, 2001
Larger Systems (serving >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 (40 CFR 141.66) (corresponding with Section 611.330) (combined radium (Ra-226 + Ra-228), gross alpha particle activity, beta particle and photon activity, and uranium)	December 8, 2003
Arsenic (40 CFR 141.62(b)(16)) (corresponding with Section 611.301(b)) (arsenic)	January 23, 2006

(Source: Amended at 26 Ill. Reg. ________, effective ______________________)