

EXEMPT

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

PART 611
PRIMARY DRINKING WATER STANDARDS

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RECEIVED
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STATE OF ILLINOIS
Pollution Control Board

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364 AUTHORITY: Implementing Sections 7.2, 17, and 17.5 and authorized by Section 27 of the
 365 Environmental Protection Act [415 ILCS 5/7.2, 17, 17.5, and 27].
 366

367 SOURCE: Adopted in R88-26 at 14 Ill. Reg. 16517, effective September 20, 1990; amended in
 368 R90-21 at 14 Ill. Reg. 20448, effective December 11, 1990; amended in R90-13 at 15 Ill. Reg.
 369 1562, effective January 22, 1991; amended in R91-3 at 16 Ill. Reg. 19010, effective December 1,
 370 1992; amended in R92-3 at 17 Ill. Reg. 7796, effective May 18, 1993; amended in R93-1 at 17
 371 Ill. Reg. 12650, effective July 23, 1993; amended in R94-4 at 18 Ill. Reg. 12291, effective July
 372 28, 1994; amended in R94-23 at 19 Ill. Reg. 8613, effective June 20, 1995; amended in R95-17
 373 at 20 Ill. Reg. 14493, effective October 22, 1996; amended in R98-2 at 22 Ill. Reg. 5020,
 374 effective March 5, 1998; amended in R99-6 at 23 Ill. Reg. 2756, effective February 17, 1999;
 375 amended in R99-12 at 23 Ill. Reg. 10348, effective August 11, 1999; amended in R00-8 at 23 Ill.
 376 Reg. 14715, effective December 8, 1999; amended in R00-10 at 24 Ill. Reg. 14226, effective
 377 September 11, 2000; amended in R01-7 at 25 Ill. Reg. 1329, effective January 11, 2001;
 378 amended in R01-20 at 25 Ill. Reg. 13611, effective October 9, 2001; amended in R02-5 at 26 Ill.
 379 Reg. 3522, effective February 22, 2002; amended in R03-4 at 27 Ill. Reg. 1183, effective January
 380 10, 2003; amended in R03-15 at 27 Ill. Reg. 16447, effective October 10, 2003; amended in
 381 R04-3 at 28 Ill. Reg. 5269, effective March 10, 2004; amended in R04-13 at 28 Ill. Reg. 12666,
 382 effective August 26, 2004; amended in R05-6 at 29 Ill. Reg. 2287, effective January 28, 2005;
 383 amended in R06-15 at 30 Ill. Reg. 17004, effective October 13, 2006; amended in R07-2/R07-11
 384 at 31 Ill. Reg. 11757, effective July 27, 2007; amended in R08-5/R08-7/R08-13 at 33 Ill. Reg.
 385 _____, effective _____.

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Section 611.101 Definitions

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

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

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

"Approved source of bottled water," for the purposes of Section 611.130(d) (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) (2007)(2006). 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 Practice in Manufacturing, Packing, or Holding Human Food (21 CFR 110), the federal Fair Packaging and Labeling Act (15 USC 1451 et seq.), and the federal Fair Packaging and Labeling regulations (21 CFR 201).

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

431 "Bank filtration" means a water treatment process that uses a well to recover
432 surface water that has naturally infiltrated into groundwater through a river bed or
433 banks. Infiltration is typically enhanced by the hydraulic gradient imposed by a
434 nearby pumping water supply or other wells.

435
436 "Best available technology" or "BAT" means the best technology, treatment
437 techniques, or other means that USEPA has found are available for the
438 contaminant in question. BAT is specified in Subpart F of this Part.

439
440 "Bin classification" or "bin" means, for the purposes of Subpart Z of this Part, the
441 appropriate of the four treatment categories (Bin 1, Bin 2, Bin 3, or Bin 4) that is
442 assigned to a filtered system supplier pursuant to Section 611.1010 based on the
443 results of the source water Cryptosporidium monitoring described in the previous
444 section. This bin classification determines the degree of additional
445 Cryptosporidium treatment, if any, the filtered PWS must provide.
446 BOARD NOTE: Derived from 40 CFR 141.710 and the preamble discussion at
447 71 Fed. Reg. 654, 657 (Jan. 5, 2006).

448
449 "Board" means the Illinois Pollution Control Board.

450
451 "Cartridge filters" means pressure-driven separation devices that remove
452 particulate matter larger than 1 micrometer using an engineered porous filtration
453 media. They are typically constructed as rigid or semi-rigid, self-supporting filter
454 elements housed in pressure vessels in which flow is from the outside of the
455 cartridge to the inside.

456
457 "CAS No." means "Chemical Abstracts Services Number."

458
459 "CT" or "CT_{calc}" is the product of "residual disinfectant concentration" (RDC or
460 C) in mg/l determined before or at the first customer, and the corresponding
461 "disinfectant contact time" (T) in minutes. If a supplier applies disinfectants at
462 more than one point prior to the first customer, it must determine the CT of each
463 disinfectant sequence before or at the first customer to determine the total percent
464 inactivation or "total inactivation ratio." In determining the total inactivation
465 ratio, the supplier must determine the RDC of each disinfection sequence and
466 corresponding contact time before any subsequent disinfection application points.
467 (See "CT_{99.9}".)

468
469 "CT_{99.9}" is the CT value required for 99.9 percent (3-log) inactivation of Giardia
470 lamblia cysts. CT_{99.9} for a variety of disinfectants and conditions appear in Tables
471 1.1-1.6, 2.1 and 3.1 of Appendix B of this Part. (See "Inactivation Ratio.")
472 BOARD NOTE: Derived from the definition of "CT" in 40 CFR 141.2
473 (2007)~~(2006)~~.

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

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

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

BOARD NOTE: This definition differs slightly from that of Section 3.05 of the Act.

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

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

"Comprehensive performance evaluation" or "CPE" is a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation, and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements.

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

"Confluent growth" means a continuous bacterial growth covering the entire filtration area of a membrane filter or a portion thereof, in which bacterial colonies are not discrete.

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

520

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

523

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

527

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

530

531 A precoat cake of diatomaceous earth filter media is deposited on a
532 support membrane (septum); and

533

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

537

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

540

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

545

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

549

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

553

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

555

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

559 measured; and

560
561 For subsequent measurements of RDC, the time in minutes that it
562 takes for water to move from the previous RDC measurement
563 point to the RDC measurement point for which the particular T is
564 being calculated.

565
566 T in pipelines must be calculated based on "plug flow" by dividing the
567 internal volume of the pipe by the maximum hourly flow rate through that
568 pipe.

569
570 T within mixing basins and storage reservoirs must be determined by
571 tracer studies or an equivalent demonstration.

572
573 "Disinfection" means a process that inactivates pathogenic organisms in water by
574 chemical oxidants or equivalent agents.

575
576 "Disinfection byproduct" or "DBP" means a chemical byproduct that forms when
577 disinfectants used for microbial control react with naturally occurring compounds
578 already present in source water. DBPs include, but are not limited to,
579 bromodichloromethane, bromoform, chloroform, dichloroacetic acid, bromate,
580 chlorite, dibromochloromethane, and certain haloacetic acids.

581
582 "Disinfection profile" is a summary of daily Giardia lamblia inactivation through
583 the treatment plant. The procedure for developing a disinfection profile is
584 contained in Section 611.742.

585
586 "Distribution system" includes all points downstream of an "entry point" to the
587 point of consumer ownership.

588
589 "Domestic or other non-distribution system plumbing problem" means a coliform
590 contamination problem in a PWS with more than one service connection that is
591 limited to the specific service connection from which the coliform-positive
592 sample was taken.

593
594 "Dose equivalent" means the product of the absorbed dose from ionizing radiation
595 and such factors as account for differences in biological effectiveness due to the
596 type of radiation and its distribution in the body as specified by the International
597 Commission on Radiological Units and Measurements (ICRU).

598
599 "Dual sample set" means a set of two samples collected at the same time and
600 same location, with one sample analyzed for TTHM and the other sample
601 analyzed for HAA5. Dual sample sets are collected for the purposes of conducting

602 an IDSE under Subpart W of this Part and determining compliance with the
603 TTHM and HAA5 MCLs under Subpart Y of this Part.

604
605 "Enhanced coagulation" means the addition of sufficient coagulant for improved
606 removal of disinfection byproduct (DBP) precursors by conventional filtration
607 treatment.

608
609 "Enhanced softening" means the improved removal of disinfection byproduct
610 (DBP) precursors by precipitative softening.

611
612 "Entry point" means a point just downstream of the final treatment operation, but
613 upstream of the first user and upstream of any mixing with other water. If raw
614 water is used without treatment, the "entry point" is the raw water source. If a
615 PWS receives treated water from another PWS, the "entry point" is a point just
616 downstream of the other PWS, but upstream of the first user on the receiving
617 PWS, and upstream of any mixing with other water.

618
619 "Filter profile" is a graphical representation of individual filter performance,
620 based on continuous turbidity measurements or total particle counts versus time
621 for an entire filter run, from startup to backwash inclusively, that includes an
622 assessment of filter performance while another filter is being backwashed.

623
624 "Filtration" means a process for removing particulate matter from water by
625 passage through porous media.

626
627 "Finished water" means water that is introduced into the distribution system of a
628 public water system which is intended for distribution and consumption without
629 further treatment, except that treatment which is necessary to maintain water
630 quality in the distribution system (e.g., booster disinfection, addition of corrosion
631 control chemicals, etc.).

632
633 "Flocculation" means a process to enhance agglomeration or collection of smaller
634 floc particles into larger, more easily settleable particles through gentle stirring by
635 hydraulic or mechanical means.

636
637 "Flowing stream" means a course of running water flowing in a definite channel.

638
639 "40/30 certification" means the certification, submitted by the supplier to the
640 Agency pursuant to Section 611.923, that the supplier had no TTHM or HAA5
641 monitoring violations, and that no individual sample from its system exceeded
642 0.040 mg/ℓ TTHM or 0.030 mg/ℓ HAA5 during eight consecutive calendar
643 quarters.

644 BOARD NOTE: Derived from 40 CFR 141.603(a) (2007)(2006).

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

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

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

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

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

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

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

BOARD NOTE: Derived from 40 CFR 141.23(b)(2) and 141.24(f)(2) note (~~2006~~) and 40 CFR 141.400(b) (2007), as added at 71 Fed. Reg. 65576 (Nov. 8, 2006).

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

"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.

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

688 "HPC" means "heterotrophic plate count," measured as specified in Section
 689 611.531(c).

690
 691 "Hydrogeologic sensitivity assessment," for the purposes of Subpart S of this Part,
 692 means a determination of whether a GWS supplier obtains water from a
 693 hydrogeologically sensitive setting.

694 BOARD NOTE: Derived from 40 CFR 141.400(c)(5) (2007), as added at 71 Fed.
 695 Reg. 65574 (Nov. 8, 2006).

696
 697 "Inactivation ratio" or "Ai" means as follows:

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

700
 701 The sum of the inactivation ratios, or "total inactivation ratio" (B) is
 702 calculated by adding together the inactivation ratio for each disinfection
 703 sequence as follows:

$$B = \Sigma(A_i)$$

704
 705
 706
 707 A total inactivation ratio equal to or greater than 1.0 is assumed to provide
 708 a 3-log inactivation of Giardia lamblia cysts.

709
 710 BOARD NOTE: Derived from the definition of "CT" in 40 CFR 141.2
 711 (2007)(2006).

712
 713 "Initial compliance period" means the three-year compliance period that begins
 714 January 1, 1993, except for the MCLs for dichloromethane, 1,2,4-
 715 trichlorobenzene, 1,1,2-trichloroethane, benzo(a)pyrene, dalapon, di(2-
 716 ethylhexyl)adipate, di(2-ethylhexyl)phthalate, dinoseb, diquat, endothall, endrin,
 717 glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram,
 718 simazine, 2,3,7,8-TCDD, antimony, beryllium, cyanide, nickel, and thallium, as
 719 they apply to a supplier whose system has fewer than 150 service connections, for
 720 which it means the three-year compliance period that began on January 1, 1996.

721
 722 "Initial distribution system evaluation" or "IDSE" means the evaluation,
 723 performed by the supplier pursuant to Section 611.921(c), to determine the
 724 locations in a distribution system that are representative of high TTHM and
 725 HAA5 concentrations throughout the distribution system. An IDSE is used in
 726 conjunction with, but is distinct from, the compliance monitoring undertaken to
 727 identify and select monitoring locations used to determine compliance with
 728 Subpart I of this PartX.

729 BOARD NOTE: Derived from 40 CFR 141.601(c) (2007)611.601(e) (2006).

730

731 "Inorganic contaminants" or "IOCs" refers to that group of contaminants
732 designated as such in United States Environmental Protection Agency (USEPA)
733 regulatory discussions and guidance documents. IOCs include antimony, arsenic,
734 asbestos, barium, beryllium, cadmium, chromium, cyanide, mercury, nickel,
735 nitrate, nitrite, selenium, and thallium.
736 BOARD NOTE: The IOCs are derived from 40 CFR 141.23(a)(4) (2007)~~(2006)~~.

737
738 "ℓ" means "liter."

739
740 "Lake or reservoir" means a natural or man made basin or hollow on the Earth's
741 surface in which water collects or is stored that may or may not have a current or
742 single direction of flow.

743
744 "Legionella" means a genus of bacteria, some species of which have caused a type
745 of pneumonia called Legionnaires Disease.

746
747 "Locational running annual average" or "LRAA" means the average of sample
748 analytical results for samples taken at a particular monitoring location during the
749 previous four calendar quarters.

750
751 "Man-made beta particle and photon emitters" means all radionuclides emitting
752 beta particles or photons listed in "Maximum Permissible Body Burdens and
753 Maximum Permissible Concentrations of Radionuclides in Air and in Water for
754 Occupational Exposure," NCRP Report Number 22, incorporated by reference in
755 Section 611.102, except the daughter products of thorium-232, uranium-235 and
756 uranium-238.

757
758 "Maximum contaminant level" or "MCL" means the maximum permissible level
759 of a contaminant in water that is delivered to any user of a public water system.
760 (See Section 611.121.)

761
762 "Maximum contaminant level goal" or "MCLG" means the maximum level of a
763 contaminant in drinking water at which no known or anticipated adverse effect on
764 the health of persons would occur, and which allows an adequate margin of
765 safety. MCLGs are nonenforceable health goals.

766 BOARD NOTE: The Board has not routinely adopted the regulations relating to
767 the federal MCLGs because they are outside the scope of the Board's identical-in-
768 substance mandate under Section 17.5 of the Act [415 ILCS 5/17.5].

769
770 "Maximum residual disinfectant level" or "MRDL" means the maximum
771 permissible level of a disinfectant added for water treatment that may not be
772 exceeded at the consumer's tap without an unacceptable possibility of adverse
773 health effects. MRDLs are enforceable in the same manner as are MCLs. (See

774 Section 611.313 and Section 611.383.)

775
776 "Maximum residual disinfectant level goal" or "MRDLG" means the maximum
777 level of a disinfectant added for water treatment at which no known or anticipated
778 adverse effect on the health of persons would occur, and which allows an
779 adequate margin of safety. MRDLGs are nonenforceable health goals and do not
780 reflect the benefit of the addition of the chemical for control of waterborne
781 microbial contaminants.

782
783 "Maximum total trihalomethane potential" or "MTP" means the maximum
784 concentration of total trihalomethanes (TTHMs) produced in a given water
785 containing a disinfectant residual after seven days at a temperature of 25° C or
786 above.

787
788 "Membrane filtration" means a pressure or vacuum driven separation process in
789 which particulate matter larger than one micrometer is rejected by an engineered
790 barrier, primarily through a size exclusion mechanism, and which has a
791 measurable removal efficiency of a target organism that can be verified through
792 the application of a direct integrity test. This definition includes the common
793 membrane technologies of microfiltration, ultrafiltration, nanofiltration, and
794 reverse osmosis.

795
796 "MFL" means millions of fibers per liter larger than 10 micrometers.
797 BOARD NOTE: Derived from 40 CFR 141.23(a)(4)(i) (2007)~~(2006)~~.

798
799 "mg" means milligrams (1/1000 of a gram).

800
801 "mg/ℓ " means milligrams per liter.

802
803 "Mixed system" means a PWS that uses both groundwater and surface water
804 sources.

805 BOARD NOTE: Drawn from 40 CFR 141.23(b)(2) and 141.24(f)(2) note
806 (2007)~~(2006)~~.

807
808 "MUG" means 4-methyl-umbelliferyl-beta-d-glucuronide.

809
810 "Near the first service connection" means at one of the 20 percent of all service
811 connections in the entire system that are nearest the public water system (PWS)
812 treatment facility, as measured by water transport time within the distribution
813 system.

814
815 "nm" means nanometer (1/1,000,000,000 of a meter).

816

817 "Non-community water system" or "NCWS" or "non-CWS" means a public water
818 system (PWS) that is not a community water system (CWS). A non-community
819 water system is either a "transient non-community water system (TWS)" or a
820 "non-transient non-community water system (NTNCWS)."
821

822 "Non-transient non-community water system" or "NTNCWS" means a public
823 water system (PWS) that is not a community water system (CWS) and that
824 regularly serves at least 25 of the same persons over six months per year.
825

826 "NPDWR" means "national primary drinking water regulation."
827

828 "NTU" means "nephelometric turbidity units."
829

830 "Old MCL" means one of the inorganic maximum contaminant levels (MCLs),
831 codified at Section 611.300, or organic MCLs, codified at Section 611.310,
832 including any marked as "additional State requirements."
833

834 BOARD NOTE: Old MCLs are those derived prior to the implementation of the
835 USEPA "Phase II" regulations. The Section 611.640 definition of this term,
836 which applies only to Subpart O of this Part, differs from this definition in that the
837 definition does not include the Section 611.300 inorganic MCLs.
838

839 "P-A Coliform Test" means "Presence-Absence Coliform Test."
840

841 "Paired sample" means two samples of water for Total Organic Carbon (TOC).
842 One sample is of raw water taken prior to any treatment. The other sample is
843 taken after the point of combined filter effluent and is representative of the treated
844 water. These samples are taken at the same time. (See Section 611.382.)
845

846 "Performance evaluation sample" or "PE sample" means a reference sample
847 provided to a laboratory for the purpose of demonstrating that the laboratory can
848 successfully analyze the sample within limits of performance specified by the
849 Agency; or, for bacteriological laboratories, Public Health; or, for radiological
850 laboratories, the Illinois Department of Nuclear Safety. The true value of the
851 concentration of the reference material is unknown to the laboratory at the time of
852 the analysis.
853

854 "Person" means an individual, corporation, company, association, partnership,
855 state, unit of local government, or federal agency.
856

857 "Phase I" refers to that group of chemical contaminants and the accompanying
858 regulations promulgated by USEPA on July 8, 1987, at 52 Fed. Reg. 25712.
859

"Phase II" refers to that group of chemical contaminants and the accompanying

860 regulations promulgated by USEPA on January 30, 1991, at 56 Fed. Reg. 3578.

861
862 "Phase IIB" refers to that group of chemical contaminants and the accompanying
863 regulations promulgated by USEPA on July 1, 1991, at 56 Fed. Reg. 30266.

864
865 "Phase V" refers to that group of chemical contaminants promulgated by USEPA
866 on July 17, 1992, at 57 Fed. Reg. 31776.

867
868 "Picocurie" or "pCi" means the quantity of radioactive material producing 2.22
869 nuclear transformations per minute.

870
871 "Plant intake" means the works or structures at the head of a conduit through
872 which water is diverted from a source (e.g., a river or lake) into the treatment
873 plant.

874
875 "Point of disinfectant application" is the point at which the disinfectant is applied
876 and downstream of which water is not subject to recontamination by surface water
877 runoff.

878
879 "Point-of-entry treatment device" or "POE" is a treatment device applied to the
880 drinking water entering a house or building for the purpose of reducing
881 contaminants in the drinking water distributed throughout the house or building.

882
883 "Point-of-use treatment device" or "POU" is a treatment device applied to a single
884 tap used for the purpose of reducing contaminants in drinking water at that one
885 tap.

886
887 "Presedimentation" means a preliminary treatment process used to remove gravel,
888 sand, and other particulate material from the source water through settling before
889 the water enters the primary clarification and filtration processes in a treatment
890 plant.

891
892 "Public Health" or "DPH" means the Illinois Department of Public Health.
893 BOARD NOTE: The Department of Public Health ("Public Health") regulates
894 non-community water supplies ("non-CWSs," including non-transient, non-
895 community water supplies ("NTNCWSs") and transient non-community water
896 supplies ("transient non-CWSs")). For the purposes of regulation of supplies by
897 Public Health by reference to this Part, "Agency" must mean Public Health.

898
899 "Public water system" or "PWS" means a system for the provision to the public of
900 water for human consumption through pipes or other constructed conveyances, if
901 such system has at least 15 service connections or regularly serves an average of
902 at least 25 individuals daily at least 60 days out of the year. A PWS is either a

903 community water system (CWS) or a non-community water system (non-CWS).
904 A PWS does not include any facility defined as "special irrigation district." Such
905 term includes the following:

906
907 Any collection, treatment, storage, and distribution facilities under control
908 of the operator of such system and used primarily in connection with such
909 system; and

910
911 Any collection or pretreatment storage facilities not under such control
912 that are used primarily in connection with such system.

913
914 BOARD NOTE: Where used in Subpart F of this Part, "public water supply"
915 means the same as "public water system."

916
917 "Radioactive contaminants" refers to that group of contaminants designated
918 "radioactive contaminants" in USEPA regulatory discussions and guidance
919 documents. "Radioactive contaminants" include tritium, strontium-89, strontium-
920 90, iodine-131, cesium-134, gross beta emitters, and other nuclides.

921 BOARD NOTE: Derived from 40 CFR 141.25(c) Table B (2007)(~~2006~~). These
922 radioactive contaminants must be reported in Consumer Confidence Reports
923 under Subpart U of this Part when they are detected above the levels indicated in
924 Section 611.720(c)(3).

925
926 "Reliably and consistently" below a specified level for a contaminant means an
927 Agency determination based on analytical results following the initial detection of
928 a contaminant to determine the qualitative condition of water from an individual
929 sampling point or source. The Agency must base this determination on the
930 consistency of analytical results, the degree below the MCL, the susceptibility of
931 source water to variation, and other vulnerability factors pertinent to the
932 contaminant detected that may influence the quality of water.

933 BOARD NOTE: Derived from 40 CFR 141.23(b)(9), 141.24(f)(11)(ii), and
934 141.24(f)(11)(iii) (2007)(~~2006~~).

935
936 "Rem" means the unit of dose equivalent from ionizing radiation to the total body
937 or any internal organ or organ system. A "millirem (mrem)" is 1/1000 of a rem.

938
939 "Repeat compliance period" means a compliance period that begins after the
940 initial compliance period.

941
942 "Representative" means that a sample must reflect the quality of water that is
943 delivered to consumers under conditions when all sources required to supply
944 water under normal conditions are in use and all treatment is properly operating.

945

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

951
952 "Safe Drinking Water Act" or "SDWA" means the Public Health Service Act, as
953 amended by the Safe Drinking Water Act, Pub. L. 93-523, 42 USC 300f et seq.
954

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

962 BOARD NOTE: Derived from 40 CFR 141.2 (2006) and 40 CFR 142.16(o)(2)
963 (2007), as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).
964

965 "Sedimentation" means a process for removal of solids before filtration by gravity
966 or separation.
967

968 "SEP" means special exception permit (Section 611.110).
969

970 "Service connection," as used in the definition of public water system, does not
971 include a connection to a system that delivers water by a constructed conveyance
972 other than a pipe if any of the following is true:
973

974 The water is used exclusively for purposes other than residential use
975 (consisting of drinking, bathing, and cooking, or other similar uses);
976

977 The Agency determines by issuing a SEP that alternative water for
978 residential use or similar uses for drinking and cooking is provided to
979 achieve the equivalent level of public health protection provided by the
980 applicable national primary drinking water regulations; or
981

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

987 BOARD NOTE: See sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42
988 USC 300f(4)(B)(i)(II) and (4)(B)(i)(III) (2000)).

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"Significant deficiency" means a deficiency identified by the Agency in a groundwater system pursuant to Section 611.803. A significant deficiency might include, but is not limited to, a defect in system design, operation, or maintenance or a failure or malfunction of the sources, treatment, storage, or distribution system that the Agency determines to be causing or have potential for causing the introduction of contamination into the water delivered to consumers.

BOARD NOTE: Derived from 40 CFR 142.16(o)(2)(iv) (2007), as added at 71 Fed. Reg. 65574 (Nov. 8, 2006). The Agency must submit to USEPA a definition and description of at least one significant deficiency in each of the eight sanitary survey elements listed in Section 611.801(c) as part of the federal primacy requirements. The Board added the general description of what a significant deficiency might include in non-limiting terms, in order to provide this important definition within the body of the Illinois rules. No Agency submission to USEPA can provide definition within the context of Board regulations.

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

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

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

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

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

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

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

BOARD NOTE: Derived from 40 CFR 141.2 ~~(2007)(2006)~~ and sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42 USC 300f(4)(B)(i)(II) and (4)(B)(i)(III) ~~(2007)(2000)~~).

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

BOARD NOTE: Derived from 40 CFR 141.601(a) and (b) ~~(2007)(2006)~~.

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

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

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

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

1073 "Subpart Y compliance monitoring" means monitoring required to demonstrate
1074 compliance with Stage 2 disinfection byproducts requirements of Subpart Y of
1075 this Part.

1076
1077 "Supplier of water" or "supplier" means any person who owns or operates a public
1078 water system (PWS). This term includes the "official custodian."

1079
1080 "Surface water" means all water that is open to the atmosphere and subject to
1081 surface runoff.

1082
1083 "SUVA" means specific ultraviolet absorption at 254 nanometers (nm), which is
1084 an indicator of the humic content of water. It is a calculated parameter obtained
1085 by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV_{254})
1086 (in m^{-1}) by its concentration of dissolved organic carbon (in mg/ℓ).

1087
1088 "SWS" means "surface water system," a public water supply (PWS) that uses only
1089 surface water sources, including "groundwater under the direct influence of
1090 surface water."

1091 BOARD NOTE: Derived from 40 CFR 141.23(b)(2) and 141.24(f)(2) note
1092 (2007)~~(2006)~~.

1093
1094 "System-specific study plan" means the plan, submitted by the supplier to the
1095 Agency pursuant to Section 611.922, for studying the occurrence of TTHM and
1096 HAA5 in a supplier's distribution system based on either monitoring results or
1097 modelling of the system.

1098 BOARD NOTE: Derived from 40 CFR 141.602 (2007)~~(2006)~~.

1099
1100 "System with a single service connection" means a system that supplies drinking
1101 water to consumers via a single service line.

1102
1103 "Too numerous to count" means that the total number of bacterial colonies
1104 exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

1105
1106 "Total organic carbon" or "TOC" means total organic carbon (in mg/ℓ) measured
1107 using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of
1108 these oxidants that convert organic carbon to carbon dioxide, rounded to two
1109 significant figures.

1110
1111 "Total trihalomethanes" or "TTHM" means the sum of the concentration of
1112 trihalomethanes (THMs), in milligrams per liter (mg/ℓ), rounded to two
1113 significant figures.

1114 BOARD NOTE: See the definition of "trihalomethanes" for a listing of the four
1115 compounds that USEPA considers TTHMs to comprise.

1116
1117 "Transient, non-community water system" or "transient non-CWS" means a non-
1118 CWS that does not regularly serve at least 25 of the same persons over six months
1119 of the year.
1120 BOARD NOTE: The federal regulations apply to all "public water systems,"
1121 which are defined as all systems that have at least 15 service connections or which
1122 regularly serve water to at least 25 persons. (See 42 USC 300f(4).) The Act
1123 mandates that the Board and the Agency regulate "public water supplies," which
1124 it defines as having at least 15 service connections or regularly serving 25 persons
1125 daily at least 60 days per year. (See Section 3.28 of the Act [415 ILCS 5/3.28].)
1126 The Department of Public Health regulates transient, non-community water
1127 systems.
1128
1129 "Treatment" means any process that changes the physical, chemical,
1130 microbiological, or radiological properties of water, is under the control of the
1131 supplier, and is not a point-of-use treatment device or a point-of-entry treatment
1132 device as defined in this Section. Treatment includes, but is not limited to,
1133 aeration, coagulation, sedimentation, filtration, activated carbon treatment,
1134 disinfection, and fluoridation.
1135
1136 "Trihalomethane" or "THM" means one of the family of organic compounds,
1137 named as derivatives of methane, in which three of the four hydrogen atoms in
1138 methane are each substituted by a halogen atom in the molecular structure. The
1139 THMs are the following compounds:
1140
1141 Trichloromethane (chloroform),
1142 Dibromochloromethane,
1143 Bromodichloromethane; and
1144 Tribromomethane (bromoform)
1145
1146 "Two-stage lime softening" means a process in which chemical addition and
1147 hardness precipitation occur in each of two distinct unit clarification processes in
1148 series prior to filtration.
1149
1150 "µg" means micrograms (1/1,000,000 of a gram).
1151
1152 "USEPA" means the U.S. Environmental Protection Agency.
1153
1154 "Uncovered finished water storage facility" is a tank, reservoir, or other facility
1155 that is used to store water which will undergo no further treatment to reduce
1156 microbial pathogens except residual disinfection and which is directly open to the
1157 atmosphere.
1158

1159 "Very small system waiver" means the conditional waiver from the requirements
1160 of Subpart W of this Part applicable to a supplier that serves fewer than 500
1161 persons and which has taken TTHM and HAA5 samples pursuant to Subpart I of
1162 this Part.

1163 BOARD NOTE: Derived from 40 CFR 141.604 (2007)~~(2006)~~.

1164
1165 "Virus" means a virus of fecal origin that is infectious to humans by waterborne
1166 transmission.

1167
1168 "VOC" or "volatile organic chemical contaminant" refers to that group of
1169 contaminants designated as "VOCs," "volatile organic chemicals," or "volatile
1170 organic contaminants," in USEPA regulatory discussions and guidance
1171 documents. "VOCs" include benzene, dichloromethane, tetrachloromethane
1172 (carbon tetrachloride), trichloroethylene, vinyl chloride, 1,1,1-trichloroethane
1173 (methyl chloroform), 1,1-dichloroethylene, 1,2-dichloroethane, cis-1,2-
1174 dichloroethylene, ethylbenzene, monochlorobenzene, o-dichlorobenzene, styrene,
1175 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, tetrachloroethylene, toluene, trans-
1176 1,2-dichloroethylene, xylene, and 1,2-dichloropropane.

1177
1178 "Waterborne disease outbreak" means the significant occurrence of acute
1179 infectious illness, epidemiologically associated with the ingestion of water from a
1180 public water system (PWS) that is deficient in treatment, as determined by the
1181 appropriate local or State agency.

1182
1183 "Wellhead protection area" or "WHPA" means the surface and subsurface
1184 recharge area surrounding a community water supply well or well field,
1185 delineated outside of any applicable setback zones (pursuant to Section
1186 17.147.2 of the Act [~~415 ILCS 5/17.15/17.2~~]) pursuant to Illinois'
1187 Wellhead Protection Program, through which contaminants are reasonably
1188 likely to move toward such well or well field.

1189 BOARD NOTE: The Agency uses two guidance documents for
1190 identification of WHPAs:

1191
1192 "Guidance Document for Groundwater Protection Needs Assessments,"
1193 Illinois Environmental Protection Agency, Illinois State Water Survey,
1194 and Illinois State Geologic Survey joint report, January 1995; and

1195
1196 "The Illinois Wellhead Protection Program Pursuant to Section 1428 of
1197 the Federal Safe Drinking Water Act," Illinois Environmental Protection
1198 Agency, No. 22480, October 1992.

1199
1200 "Wellhead protection program" means the wellhead protection program for the
1201 State of Illinois, approved by USEPA under Section 1428 of the SDWA, 42 USC

1202 300h-7.
1203 BOARD NOTE: Derived from 40 CFR 141.71(b) (2007)(2006). The wellhead
1204 protection program includes the "groundwater protection needs assessment" under
1205 Section 17.1 of the Act [415 ILCS 5/17.1] and 35 Ill. Adm. Code 615-617.
1206

1207 "Wholesale system" means a public water system that treats source water as
1208 necessary to produce finished water, which then delivers some or all of that
1209 finished water to another public water system. Delivery by a wholesale system
1210 may be through a direct connection or through the distribution system of one or
1211 more consecutive systems.
1212

1213 BOARD NOTE: Derived from 40 CFR 141.2 (2007)(2006).
1214

1215 (Source: Amended at 33 Ill. Reg. _____, effective _____)
1216

1217 **Section 611.102 Incorporations by Reference**
1218

1219 a) Abbreviations and short-name listing of references. The following names and
1220 abbreviated names, presented in alphabetical order, are used in this Part to refer to
1221 materials incorporated by reference:
1222

1223 "ASTM Method" means a method published by and available from the
1224 American Society for Testing and Materials (ASTM).
1225

1226 "Colisure Test" means "Colisure Presence/Absence Test for Detection and
1227 Identification of Coliform Bacteria and Escherichia Coli in Drinking
1228 Water," available from Millipore Corporation, Technical Services
1229 Department.
1230

1231 "Colitag® Test" means "Colitag® Product as a Test for Detection and
1232 Identification of Coliforms and E. coli Bacteria in Drinking Water and
1233 Source Water as Required in National Primary Drinking Water
1234 Regulations," available from CPI International.
1235

1236 "Determination of Inorganic Oxyhalide" means "Determination of
1237 Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using
1238 Ion Chromatography with the Addition of a Postcolumn Reagent for Trace
1239 Bromate Analysis," available from NTIS.
1240

1241 "Dioxin and Furan Method 1613" means "Tetra- through Octa-Chlorinated
1242 Dioxins and Furans by Isotope-Dilution HRGC/HRMS," available from
1243 NTIS.
1244

1245 "E*Colite Test" means "Charm E*Colite Presence/Absence Test for
1246 Detection and Identification of Coliform Bacteria and Escherichia coli in
1247 Drinking Water," available from Charm Sciences, Inc. and USEPA, Water
1248 Resource Center.
1249

1250 "EC-MUG" means "Method 9221 F: Multiple-Tube Fermentation
1251 Technique for Members of the Coliform Group, Escherichia coli
1252 Procedure (Proposed)," available from American Public Health
1253 Association and American Waterworks Association.
1254

1255 "Enterolert" means "Evaluation of Enterolert for Enumeration of
1256 Enterococci in Recreational Waters," available from American Society for
1257 Microbiology.
1258

1259 "Georgia Radium Method" means "The Determination of Radium-226 and
1260 Radium-228 in Drinking Water by Gamma-ray Spectrometry Using HPGE
1261 or Ge(Li) Detectors," Revision 1.2, December 2004, available from the
1262 Environmental Resources Center, Georgia Institute of Technology.
1263

1264 "GLI Method 2" means GLI Method 2, "Turbidity," Nov. 2, 1992,
1265 available from Great Lakes Instruments, Inc.
1266

1267 "Hach FilterTrak Method 10133" means "Determination of Turbidity by
1268 Laser Nephelometry," available from Hach Co.
1269

1270 "HASL Procedure Manual" means HASL Procedure Manual, HASL 300,
1271 available from ERDA Health and Safety Laboratory.
1272

1273 "ITS Method D99-003" means Method D99-003, Revision 3.0, "Free
1274 Chlorine Species (HOCl and OCl) by Test Strip," available from
1275 Industrial Test Systems, Inc.
1276

1277 "Kelada 01" means "Kelada Automated Test Methods for Total Cyanide,
1278 Acid Dissociable Cyanide, And Thiocyanate," Revision 1.2, August 2001,
1279 EPA 821/B-01/009, available from the National Technical Information
1280 Service (NTIS).
1281

1282 "m-ColiBlue24 Test" means "Total Coliforms and E. coli Membrane
1283 Filtration Method with m-ColiBlue24® Broth," available from Hach
1284 Company and USEPA, Water Resource Center.
1285

1286 "Membrane Filter Technique using Chromocult Doliform Agar" means
1287 "Chromocult Coliform Agar Presence/Absence Membrane Filter Test

1288 Method for Detection and Identification of Coliform Bacteria and
1289 Escherichia coli in Finished Waters," available from EMD Chemicals Inc.
1290
1291 "NA-MUG" means "Method 9222 G: Membrane Filter Technique for
1292 Members of the Coliform Group, MF Partition Procedures," available
1293 from American Public Health Association and American Waterworks
1294 Association.
1295
1296 "NCRP" means "National Council on Radiation Protection."
1297
1298 "NTIS" means "National Technical Information Service."
1299
1300 "New Jersey Radium Method" means "Determination of Radium 228 in
1301 Drinking Water," available from the New Jersey Department of
1302 Environmental Protection.
1303
1304 "New York Radium Method" means "Determination of Ra-226 and Ra-
1305 228 (Ra-02)," available from the New York Department of Public Health.
1306
1307 "OI Analytical Method OIA-1677" means "Method OIA-1677, DW
1308 Available Cyanide by Flow Injection, Ligand Exchange, and
1309 Amperometry," available from ALPKEM, Division of OI Analytical.
1310
1311 "ONPG-MUG Test" (meaning "minimal medium ortho-nitrophenyl-beta-
1312 d-galactopyranoside-4-methyl-umbelliferyl -beta-d-glucuronide test"),
1313 also called the "Autoanalysis Colilert System," is Method 9223, available
1314 in "Standard Methods for the Examination of Water and Wastewater,"
1315 18th, 19th, 20th, or 21st ed., from American Public Health Association and
1316 the American Water Works Association.
1317
1318 "Palintest Method 1001" means "Method Number 1001," available from
1319 Palintest, Ltd. or the Hach Company.
1320
1321 "QuikChem Method 10-204-00-1-X" means "Digestion and distillation of
1322 total cyanide in drinking and wastewaters using MICRO DIST and
1323 determination of cyanide by flow injection analysis," available from
1324 Lachat Instruments.
1325
1326 "Readycult Coliforms 100 Presence/Absence Test" means "Readycult
1327 Coliforms 100 Presence/Absence Test for Detection and Identification of
1328 Coliform Bacteria and Escherichia coli in Finished Waters," available
1329 from EMD Chemicals Inc.
1330

1331 "SimPlate Method" means "IDEXX SimPlate TM HPC Test Method for
1332 Heterotrophs in Water," available from IDEXX Laboratories, Inc.
1333
1334 "Radiochemical Methods" means "Interim Radiochemical Methodology
1335 for Drinking Water," available from NTIS.
1336
1337 "Standard Methods" means "Standard Methods for the Examination of
1338 Water and Wastewater," available from the American Public Health
1339 Association or the American Waterworks Association.
1340
1341 "Standard Methods Online" means the website maintained by the Standard
1342 Methods Organization (at www.standardmethods.org) for purchase of the
1343 latest versions of methods in an electronic format.
1344
1345 "Syngenta AG-625" means "Atrazine in Drinking Water by
1346 Immunoassay," February 2001 is available from Syngenta Crop
1347 Protection, Inc.
1348
1349 "Technical Bulletin 601" means "Technical Bulletin 601, Standard
1350 Method of Testing for Nitrate in Drinking Water," July 1994, available
1351 from Analytical Technology, Inc.
1352
1353 "Technical Notes on Drinking Water Methods" means the USEPA
1354 document by that title, October 1994, USEPA document number EPA
1355 600/R-94/173, available from NTIS.
1356
1357 "Technicon Methods" means "Fluoride in Water and Wastewater,"
1358 available from Bran & Luebbe.
1359
1360 "USDOE Manual" means "EML Procedures Manual," available from the
1361 United State Department of Energy.
1362
1363 "USEPA Asbestos Methods-100.1" means Method 100.1, "Analytical
1364 Method for Determination of Asbestos Fibers in Water," September 1983,
1365 available from NTIS.
1366
1367 "USEPA Asbestos Methods-100.2" means Method 100.2, "Determination
1368 of Asbestos Structures over 10-mm in Length in Drinking Water," June
1369 1994, available from NTIS.
1370
1371 "USEPA Environmental Inorganics Methods" means "Methods for the
1372 Determination of Inorganic Substances in Environmental Samples,"
1373 August 1993, available from NTIS.

1374
 1375 "USEPA Environmental Metals Methods" means "Methods for the
 1376 Determination of Metals in Environmental Samples," available from
 1377 NTIS.
 1378
 1379 "USEPA Inorganic Methods" means "Methods for Chemical Analysis of
 1380 Water and Wastes," March 1983, available from NTIS.
 1381
 1382 "USEPA Interim Radiochemical Methods" means "Interim Radiochemical
 1383 Methodology for Drinking Water," EPA 600/4-75/008 (revised), March
 1384 1976. Available from NTIS.
 1385
 1386 "USEPA Method 1600" means "Method 1600: Enterococci in Water by
 1387 Membrane Filtration Using Membrane-Enterococcus Indoxyl-b-D-
 1388 Glucoside Agar (mEI)," available from USEPA, Water Resource Center.
 1389
 1390 "USEPA Method 1601" means "Method 1601: Male-specific (F⁺) and
 1391 Somatic Coliphage in Water by Two-step Enrichment Procedure,"
 1392 available from USEPA, Water Resource Center.
 1393
 1394 "USEPA Method 1602" means "Method 1602: Male-specific (F⁺) and
 1395 Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure,"
 1396 available from USEPA, Water Resource Center.
 1397
 1398 "USEPA Method 1604" means "Method 1604: Total Coliforms and
 1399 Escherichia coli in Water by Membrane Filtration Using a Simultaneous
 1400 Detection Technique (MI Medium)," available from USEPA, Water
 1401 Resource Center.
 1402
 1403 "USEPA NERL Method 200.5 (rev. 4.2)" means Method 200.5, Revision
 1404 4.2, "Determination of Trace Elements in Drinking Water by Axially
 1405 Viewed Inductively-Coupled Plasma – Atomic Emission Spectrometry,"
 1406 October 2003, EPA 600/R-06/115. Available from USEPA, Office of
 1407 Research and Development.
 1408
 1409 "~~USEPA Method 1622 (05)~~" means "~~Method 1622: Cryptosporidium in~~
 1410 ~~Water by Filtration/IMS/FA," December 2005, available from USEPA,~~
 1411 ~~Office of Ground Water and Drinking Water.~~
 1412
 1413 "~~USEPA Method 1622 (01)~~" means "~~Method 1622: Cryptosporidium in~~
 1414 ~~Water by Filtration/IMS/FA," April 2001, available from USEPA, Office~~
 1415 ~~of Ground Water and Drinking Water.~~
 1416

1417 "USEPA Method 1622 (99)" means "Method 1622: Cryptosporidium in
 1418 Water by Filtration/IMS/FA," January 1999, available from USEPA,
 1419 Office of Ground Water and Drinking Water.
 1420

1421 "USEPA Method 1623 (05)" means "Method 1623: Cryptosporidium and
 1422 Giardia in Water by Filtration/IMS/FA," December 2005, available from
 1423 the USEPA, Office of Ground Water and Drinking Water.
 1424

1425 "USEPA Method 1623 (01)" means "Method 1623: Cryptosporidium and
 1426 Giardia in Water by Filtration/IMS/FA," April 2001, available from
 1427 USEPA, Office of Ground Water and Drinking Water.
 1428

1429 "USEPA Method 1623 (99)" means "Method 1623: Cryptosporidium and
 1430 Giardia in Water by Filtration/IMS/FA," April 1999, available from the
 1431 USEPA, Office of Ground Water and Drinking Water.
 1432

1433 "USEPA NERL Method 415.3 (rev. 1.1)" means Method 415.3, Revision
 1434 1.1, "Determination of Total Organic Carbon and Specific UV Absorbance
 1435 at 254 nm in Source Water and Drinking Water," USEPA, February 2005,
 1436 EPA 600/R-05/055. Available from the USEPA, Office of Research and
 1437 Development.
 1438

1439 "USEPA OGWDW Methods" means one of the methods listed as
 1440 available from the USEPA, Office of Ground Water and Drinking Water
 1441 (Methods 317.0 (rev. 2.0), 326.0 (rev. 1.0), 327.0 (rev. 1.1), 515.4 (rev.
 1442 1.0), 531.2 (rev. 1.0), and 552.3 (rev. 1.0), 1622 (99), 1622 (01), 1622
 1443 (05), 1623 (99), 1623 (01), and 1623 (05)).
 1444

1445 "USEPA Organic Methods" means "Methods for the Determination of
 1446 Organic Compounds in Drinking Water," July 1991, for Methods 502.2,
 1447 505, 507, 508, 508A, 515.1, and 531.1; "Methods for the Determination of
 1448 Organic Compounds in Drinking Water – Supplement I," July 1990, for
 1449 Methods 506, 547, 550, 550.1, and 551; "Methods for the Determination
 1450 of Organic Compounds in Drinking Water – Supplement II," August
 1451 1992, for Methods 504.1, 508.1, 515.2, 524.2, 525.2, 548.1, 549.1, 552.1,
 1452 552.2, and 555; and "Methods for the Determination of Organic
 1453 Compounds in Drinking Water – Supplement III," August 1995, for
 1454 Methods 502.2, 524.2, 551.1, and 552.2. ~~Method 515.4, "Determination~~
 1455 ~~of Chlorinated Acids in Drinking Water by Liquid-Liquid~~
 1456 ~~Microextraction, Derivatization and Fast Gas Chromatography with~~
 1457 ~~Electron Capture Detection," Revision 1.0, April 2000, EPA 815/B-~~
 1458 ~~00/001, and Method 531.2, "Measurement of N-methylcarbamoyloximes~~
 1459 ~~and N-methylcarbamates in Water by Direct Aqueous Injection HPLC~~

1460 with Postcolumn Derivatization," Revision 1.0, September 2001, EPA
1461 815/B-01/002, are both available on-line from USEPA, Office of Ground
1462 Water and Drinking Water.

1463
1464 "USEPA Organic and Inorganic Methods" means "Methods for the
1465 Determination of Organic and Inorganic Compounds in Drinking Water,
1466 Volume 1," EPA 815/R-00/014, PB2000-106981, August 2000. Available
1467 from NTIS.

1468
1469 "USEPA Radioactivity Methods" means "Prescribed Procedures for
1470 Measurement of Radioactivity in Drinking Water," EPA 600/4-80/032,
1471 August 1980. Available from NTIS.

1472
1473 "USEPA Radiochemical Analyses" means "Radiochemical Analytical
1474 Procedures for Analysis of Environmental Samples," March 1979.
1475 Available from NTIS.

1476
1477 "USEPA Radiochemistry Methods" means "Radiochemistry Procedures
1478 Manual," EPA 520/5-84/006, December 1987. Available from NTIS.

1479
1480 "USEPA Technical Notes" means "Technical Notes on Drinking Water
1481 Methods," available from NTIS.

1482
1483 "USGS Methods" means "Methods of Analysis by the U.S. Geological
1484 Survey National Water Quality Laboratory – Determination of Inorganic
1485 and Organic Constituents in Water and Fluvial Sediments," available from
1486 NTIS and USGS.

1487
1488 "Waters Method B-1011" means "Waters Test Method for the
1489 Determination of Nitrite/Nitrate in Water Using Single Column Ion
1490 Chromatography," available from Waters Corporation, Technical Services
1491 Division.

1492
1493 b) The Board incorporates the following publications by reference:

1494
1495 ALPKEM, Division of OI Analytical, P.O. Box 9010, College Station, TX
1496 77842-9010, telephone: 979-690-1711, Internet: www.oico.com.

1497
1498 "Method OIA-1677 DW, Available Cyanide by Flow Injection,
1499 Ligand Exchange, and Amperometry," EPA 821/R-04/001,
1500 January 2004 (referred to as "OI Analytical Method OIA-1677"),
1501 referenced in Section 611.611.

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BOARD NOTE: Also available online for download from www.epa.gov/waterscience/methods/method/cyanide/1677-2004.pdf.

APHA. American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005 202-777-2742.

"Standard Methods for the Examination of Water and Wastewater," 17th Edition, 1989 (referred to as "Standard Methods, 17th ed."). See the methods listed separately for the same references under American Waterworks Association.

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

"Standard Methods for the Examination of Water and Wastewater," 19th Edition, 1995 (referred to as "Standard Methods, 19th ed."). See the methods listed separately for the same references under American Waterworks Association.

"Standard Methods for the Examination of Water and Wastewater," 20th Edition, 1998 (referred to as "Standard Methods, 20th ed."). See the methods listed separately for the same references under American Waterworks Association.

"Standard Methods for the Examination of Water and Wastewater," 21st Edition, 2005 (referred to as "Standard Methods, 21st ed."). See the methods listed separately for the same references under American Waterworks Association.

American Society for Microbiology, 1752 N Street N.W., Washington, DC 20036, 202-737-3600:

"Evaluation of Enterolert for Enumeration of Enterococci in Recreational Waters," Applied and Environmental Microbiology, Oct. 1996, vol. 62, no. 10, p. 3881 (referred to as "Enterolert"), referenced in Section 611.802.

1544 BOARD NOTE: At the table to 40 CFR 141.402(c)(2), USEPA
1545 approved the method as described in the above literature review.
1546 The method itself is embodied in the printed instructions to the
1547 proprietary kit available from IDEXX Laboratories, Inc.
1548 (accessible on-line and available by download from www.asm.org,
1549 as "Enterolert™ Procedure"). ASTM approved the method as
1550 "Standard Test Method for Enterococci in Water Using
1551 Enterolert™," which is available in two versions from ASTM:
1552 ASTM D 6503-99 (superseded) and ASTM D 6503-99 (2005).
1553 While it is more conventional to incorporate the method as
1554 presented in the kit instructions or as approved by ASTM by
1555 reference, the Board is constrained to incorporate the version that
1556 appears in the technical literature by reference, which is the
1557 version that USEPA has explicitly approved.
1558

1559 AWWA. American Water Works Association et al., 6666 West Quincy
1560 Ave., Denver, CO 80235 (303-794-7711).

1561
1562 "National Field Evaluation of a Defined Substrate Method for the
1563 Simultaneous Enumeration of Total Coliforms and Escherichia coli
1564 for Drinking Water: Comparison with the Standard Multiple Tube
1565 Fermentation Method," S.C. Edberg, M.J. Allen & D.B. Smith,
1566 Applied Environmental Microbiology, vol. 54, iss. 6, pp 1595-
1567 1601 (1988), referenced in Appendix D to this Part.
1568

1569 "Standard Methods for the Examination of Water and
1570 Wastewater," 13th Edition, 1971 (referred to as "Standard Methods,
1571 13th ed.").

1572
1573 Method 302, Gross Alpha and Gross Beta Radioactivity in
1574 Water (Total, Suspended, and Dissolved), referenced in
1575 Section 611.720.
1576

1577 Method 303, Total Radioactive Strontium and Strontium 90
1578 in Water, referenced in Section 611.720.
1579

1580 Method 304, Radium in Water by Precipitation, referenced
1581 in Section 611.720.
1582

1583 Method 305, Radium 226 by Radon in Water (Soluble,
1584 Suspended, and Total), referenced in Section 611.720.
1585

1586 Method 306, Tritium in Water, referenced in Section

1587	611.720.
1588	
1589	"Standard Methods for the Examination of Water and
1590	Wastewater," 17 th Edition, 1989 (referred to as "Standard Methods,
1591	17 th ed.").
1592	
1593	Method 7110 B, Gross Alpha and Gross Beta Radioactivity
1594	in Water (Total, Suspended, and Dissolved), referenced in
1595	Section 611.720.
1596	
1597	Method 7500-Cs B, Radioactive Cesium, Precipitation
1598	Method, referenced in Section 611.720.
1599	
1600	Method 7500- ³ H B, Tritium in Water, referenced in Section
1601	611.720.
1602	
1603	Method 7500-I B, Radioactive Iodine, Precipitation
1604	Method, referenced in Section 611.720.
1605	
1606	Method 7500-I C, Radioactive Iodine, Ion-Exchange
1607	Method, referenced in Section 611.720.
1608	
1609	Method 7500-I D, Radioactive Iodine, Distillation Method,
1610	referenced in Section 611.720.
1611	
1612	Method 7500-Ra B, Radium in Water by Precipitation,
1613	referenced in Section 611.720.
1614	
1615	Method 7500-Ra C, Radium 226 by Radon in Water
1616	(Soluble, Suspended, and Total), referenced in Section
1617	611.720.
1618	
1619	Method 7500-Ra D, Radium, Sequential Precipitation
1620	Method (Proposed), referenced in Section 611.720.
1621	
1622	Method 7500-Sr B, Total Radioactive Strontium and
1623	Strontium 90 in Water, referenced in Section 611.720.
1624	
1625	Method 7500-U B, Uranium, Radiochemical Method
1626	(Proposed), referenced in Section 611.720.
1627	
1628	Method 7500-U C, Uranium, Isotopic Method (Proposed),
1629	referenced in Section 611.720.

1630
1631 "Standard Methods for the Examination of Water and
1632 Wastewater," 18th Edition, 1992 (referred to as "Standard Methods,
1633 18th ed.").

1634
1635 Method 2130 B, Turbidity, Nephelometric Method,
1636 referenced in Section 611.531.

1637
1638 Method 2320 B, Alkalinity, Titration Method, referenced in
1639 Section 611.611.

1640
1641 Method 2510 B, Conductivity, Laboratory Method,
1642 referenced in Section 611.611.

1643
1644 Method 2550, Temperature, Laboratory and Field Methods,
1645 referenced in Section 611.611.

1646
1647 Method 3111 B, Metals by Flame Atomic Absorption
1648 Spectrometry, Direct Air-Acetylene Flame Method,
1649 referenced in Sections 611.611 and 611.612.

1650
1651 Method 3111 D, Metals by Flame Atomic Absorption
1652 Spectrometry, Direct Nitrous Oxide-Acetylene Flame
1653 Method, referenced in Section 611.611.

1654
1655 Method 3112 B, Metals by Cold-Vapor Atomic Absorption
1656 Spectrometry, Cold-Vapor Atomic Absorption
1657 Spectrometric Method, referenced in Section 611.611.

1658
1659 Method 3113 B, Metals by Electrothermal Atomic
1660 Absorption Spectrometry, Electrothermal Atomic
1661 Absorption Spectrometric Method, referenced in Sections
1662 611.611 and 611.612.

1663
1664 Method 3114 B, Metals by Hydride Generation/Atomic
1665 Absorption Spectrometry, Manual Hydride
1666 Generation/Atomic Absorption Spectrometric Method,
1667 referenced in Section 611.611.

1668
1669 Method 3120 B, Metals by Plasma Emission Spectroscopy,
1670 Inductively_Coupled Plasma (ICP) Method, referenced in
1671 Sections 611.611 and 611.612.

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1673	Method 3500-Ca D, Calcium, EDTA Titrimetric Method,
1674	referenced in Section 611.611.
1675	
1676	Method 3500-Mg E, Magnesium, Calculation Method,
1677	referenced in Section 611.611.
1678	
1679	Method 4110 B, Determination of Anions by Ion
1680	Chromatography, Ion Chromatography with Chemical
1681	Suppression of Eluent Conductivity, referenced in Section
1682	611.611.
1683	
1684	Method 4500-CN ⁻ C, Cyanide, Total Cyanide after
1685	Distillation, referenced in Section 611.611.
1686	
1687	Method 4500-CN ⁻ E, Cyanide, Colorimetric Method,
1688	referenced in Section 611.611.
1689	
1690	Method 4500-CN ⁻ F, Cyanide, Cyanide-Selective Electrode
1691	Method, referenced in Section 611.611.
1692	
1693	Method 4500-CN ⁻ G, Cyanide, Cyanides Amenable to
1694	Chlorination after Distillation, referenced in Section
1695	611.611.
1696	
1697	Method 4500-Cl D, Chlorine, Amperometric Titration
1698	Method, referenced in Section 611.531.
1699	
1700	Method 4500-Cl E, Chlorine, Low-Level Amperometric
1701	Titration Method, referenced in Section 611.531.
1702	
1703	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
1704	Method, referenced in Section 611.531.
1705	
1706	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
1707	referenced in Section 611.531.
1708	
1709	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
1710	Method, referenced in Section 611.531.
1711	
1712	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
1713	referenced in Section 611.531.
1714	
1715	Method 4500-ClO ₂ C, Chlorine Dioxide, Amperometric

1716	Method I, referenced in Section 611.531.
1717	
1718	Method 4500-ClO ₂ D, Chlorine Dioxide, DPD Method,
1719	referenced in Section 611.531.
1720	
1721	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric
1722	Method II (Proposed), referenced in Section 611.531.
1723	
1724	Method 4500-F ⁻ B, Fluoride, Preliminary Distillation Step,
1725	referenced in Section 611.611.
1726	
1727	Method 4500-F ⁻ C, Fluoride, Ion-Selective Electrode
1728	Method, referenced in Section 611.611.
1729	
1730	Method 4500-F ⁻ D, Fluoride, SPADNS Method, referenced
1731	in Section 611.611.
1732	
1733	Method 4500-F ⁻ E, Fluoride, Complexone Method,
1734	referenced in Section 611.611.
1735	
1736	Method 4500-H ⁺ B, pH Value, Electrometric Method,
1737	referenced in Section 611.611.
1738	
1739	Method 4500-NO ₂ ⁻ B, Nitrogen (Nitrite), Colorimetric
1740	Method, referenced in Section 611.611.
1741	
1742	Method 4500-NO ₃ ⁻ D, Nitrogen (Nitrate), Nitrate Electrode
1743	Method, referenced in Section 611.611.
1744	
1745	Method 4500-NO ₃ ⁻ E, Nitrogen (Nitrate), Cadmium
1746	Reduction Method, referenced in Section 611.611.
1747	
1748	Method 4500-NO ₃ ⁻ F, Nitrogen (Nitrate), Automated
1749	Cadmium Reduction Method, referenced in Section
1750	611.611.
1751	
1752	Method 4500-O ₃ B, Ozone (Residual) (Proposed), Indigo
1753	Colorimetric Method, referenced in Section 611.531.
1754	
1755	Method 4500-P E, Phosphorus, Ascorbic Acid Method,
1756	referenced in Section 611.611.
1757	
1758	Method 4500-P F, Phosphorus, Automated Ascorbic Acid

1759	Reduction Method, referenced in Section 611.611.
1760	
1761	Method 4500-Si D, Silica, Molybdosilicate Method,
1762	referenced in Section 611.611.
1763	
1764	Method 4500-Si E, Silica, Heteropoly Blue Method,
1765	referenced in Section 611.611.
1766	
1767	Method 4500-Si F, Silica, Automated Method for
1768	Molybdate-Reactive Silica, referenced in Section 611.611.
1769	
1770	Method 6651, Glyphosate Herbicide (Proposed), referenced
1771	in Section 611.645.
1772	
1773	Method 7110 B, Gross Alpha and Beta Radioactivity
1774	(Total, Suspended, and Dissolved), Evaporation Method for
1775	Gross Alpha-Beta, referenced in Section 611.720.
1776	
1777	Method 7110 C, Gross Alpha and Beta Radioactivity
1778	(Total, Suspended, and Dissolved), Coprecipitation Method
1779	for Gross Alpha Radioactivity in Drinking Water
1780	(Proposed), referenced in Section 611.720.
1781	
1782	Method 7500-Cs B, Radioactive Cesium, Precipitation
1783	Method, referenced in Section 611.720.
1784	
1785	Method 7500- ³ H B, Tritium, Liquid Scintillation
1786	Spectrometric Method, referenced in Section 611.720.
1787	
1788	Method 7500-I B, Radioactive Iodine, Precipitation
1789	Method, referenced in Section 611.720.
1790	
1791	Method 7500-I C, Radioactive Iodine, Ion-Exchange
1792	Method, referenced in Section 611.720.
1793	
1794	Method 7500-I D, Radioactive Iodine, Distillation Method,
1795	referenced in Section 611.720.
1796	
1797	Method 7500-Ra B, Radium, Precipitation Method,
1798	referenced in Section 611.720.
1799	
1800	Method 7500-Ra C, Radium, Emanation Method,
1801	referenced in Section 611.720.

1802
1803 Method 7500-Ra D, Radium, Sequential Precipitation
1804 Method (Proposed), referenced in Section 611.720.
1805
1806 Method 7500-Sr B, Total Radioactive Strontium and
1807 Strontium 90, Precipitation Method, referenced in Section
1808 611.720.
1809
1810 Method 7500-U B, Uranium, Radiochemical Method
1811 (Proposed), referenced in Section 611.720.
1812
1813 Method 7500-U C, Uranium, Isotopic Method (Proposed),
1814 referenced in Section 611.720.
1815
1816 Method 9215 B, Heterotrophic Plate Count, Pour Plate
1817 Method, referenced in Section 611.531.
1818
1819 Method 9221 A, Multiple-Tube Fermentation Technique
1820 for Members of the Coliform Group, Introduction,
1821 referenced in Sections 611.526 and 611.531.
1822
1823 Method 9221 B, Multiple-Tube Fermentation Technique
1824 for Members of the Coliform Group, Standard Total
1825 Coliform Fermentation Technique, referenced in Sections
1826 611.526 and 611.531.
1827
1828 Method 9221 C, Multiple-Tube Fermentation Technique
1829 for Members of the Coliform Group, Estimation of
1830 Bacterial Density, referenced in Sections 611.526 and
1831 611.531.
1832
1833 Method 9221 D, Multiple-Tube Fermentation Technique
1834 for Members of the Coliform Group, Presence-Absence (P-
1835 A) Coliform Test, referenced in Section 611.526.
1836
1837 Method 9221 E, Multiple-Tube Fermentation Technique
1838 for Members of the Coliform Group, Fecal Coliform
1839 Procedure, referenced in Sections 611.526 and 611.531.
1840
1841 Method 9222 A, Membrane Filter Technique for Members
1842 of the Coliform Group, Introduction, referenced in Sections
1843 611.526 and 611.531.
1844

- 1845 Method 9222 B, Membrane Filter Technique for Members
1846 of the Coliform Group, Standard Total Coliform Membrane
1847 Filter Procedure, referenced in Sections 611.526 and
1848 611.531.
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- 1850 Method 9222 C, Membrane Filter Technique for Members
1851 of the Coliform Group, Delayed-Incubation Total Coliform
1852 Procedure, referenced in Sections 611.526 and 611.531.
1853
- 1854 Method 9222 D, Membrane Filter Technique for Members
1855 of the Coliform Group, Fecal Coliform Membrane Filter
1856 Procedure, referenced in Section 611.531.
1857
- 1858 Method 9223, Chromogenic Substrate Coliform Test
1859 (Proposed) (also referred to as the variations "Autoanalysis
1860 Colilert System" and "Colisure Test"), referenced in
1861 Sections 611.526, and 611.531.
1862
- 1863 Method 9223 B, Chromogenic Substrate Coliform Test
1864 (Proposed), referenced in Section 611.1004.
1865
- 1866 "Supplement to the 18th Edition of Standard Methods for the
1867 Examination of Water and Wastewater," American Public Health
1868 Association, 1994.
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- 1870 Method 6610, Carbamate Pesticide Method, referenced in
1871 Section 611.645.
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- 1873 "Standard Methods for the Examination of Water and
1874 Wastewater," 19th Edition, 1995 (referred to as "Standard Methods,
1875 19th ed.").
1876
- 1877 Method 2130 B, Turbidity, Nephelometric Method,
1878 referenced in Section 611.531.
1879
- 1880 Method 2320 B, Alkalinity, Titration Method, referenced in
1881 Section 611.611.
1882
- 1883 Method 2510 B, Conductivity, Laboratory Method,
1884 referenced in Section 611.611.
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- 1886 Method 2550, Temperature, Laboratory, and Field
1887 Methods, referenced in Section 611.611.

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1890	Method 3111 B, Metals by Flame Atomic Absorption Spectrometry, Direct Air-Acetylene Flame Method, referenced in Sections 611.611 and 611.612.
1891	
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1893	Method 3111 D, Metals by Flame Atomic Absorption Spectrometry, Direct Nitrous Oxide-Acetylene Flame Method, referenced in Section 611.611.
1894	
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1897	Method 3112 B, Metals by Cold-Vapor Atomic Absorption Spectrometry, Cold-Vapor Atomic Absorption Spectrometric Method, referenced in Section 611.611.
1898	
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1901	Method 3113 B, Metals by Electrothermal Atomic Absorption Spectrometry, Electrothermal Atomic Absorption Spectrometric Method, referenced in Sections 611.611 and 611.612.
1902	
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1906	Method 3114 B, Metals by Hydride Generation/Atomic Absorption Spectrometry, Manual Hydride Generation/Atomic Absorption Spectrometric Method, referenced in Section 611.611.
1907	
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1911	Method 3120 B, Metals by Plasma Emission Spectroscopy, Inductively-Coupled Plasma (ICP) Method, referenced in Sections 611.611 and 611.612.
1912	
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1915	Method 3500-Ca D, Calcium, EDTA Titrimetric Method, referenced in Section 611.611.
1916	
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1918	Method 3500-Mg E, Magnesium, Calculation Method, referenced in Section 611.611.
1919	
1920	
1921	Method 4110 B, Determination of Anions by Ion Chromatography, Ion Chromatography with Chemical Suppression of Eluent Conductivity, referenced in Section 611.611.
1922	
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1926	Method 4500-Cl D, Chlorine, Amperometric Titration Method, referenced in Sections 611.381 and 611.531.
1927	
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1929	Method 4500-Cl E, Chlorine, Low-Level Amperometric Titration Method, referenced in Sections 611.381 and
1930	

1931	611.531.
1932	
1933	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
1934	Method, referenced in Sections 611.381 and 611.531.
1935	
1936	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
1937	referenced in Sections 611.381 and 611.531.
1938	
1939	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
1940	Method, referenced in Sections 611.381 and 611.531.
1941	
1942	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
1943	referenced in Sections 611.381 and 611.531.
1944	
1945	Method 4500-ClO ₂ C, Chlorine Dioxide, Amperometric
1946	Method I, referenced in Section 611.531.
1947	
1948	Method 4500-ClO ₂ D, Chlorine Dioxide, DPD Method,
1949	referenced in Sections 611.381 and 611.531.
1950	
1951	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric
1952	Method II, referenced in Sections 611.381 and 611.531.
1953	
1954	Method 4500-CN ⁻ C, Cyanide, Total Cyanide after
1955	Distillation, referenced in Section 611.611.
1956	
1957	Method 4500-CN ⁻ E, Cyanide, Colorimetric Method,
1958	referenced in Section 611.611.
1959	
1960	Method 4500-CN ⁻ F, Cyanide, Cyanide-Selective Electrode
1961	Method, referenced in Section 611.611.
1962	
1963	Method 4500-CN ⁻ G, Cyanide, Cyanides Amenable to
1964	Chlorination after Distillation, referenced in Section
1965	611.611.
1966	
1967	Method 4500-F ⁻ B, Fluoride, Preliminary Distillation Step,
1968	referenced in Section 611.611.
1969	
1970	Method 4500-F ⁻ C, Fluoride, Ion-Selective Electrode
1971	Method, referenced in Section 611.611.
1972	
1973	Method 4500-F ⁻ D, Fluoride, SPADNS Method, referenced

1974	in Section 611.611.
1975	
1976	Method 4500-F E, Fluoride, Complexone Method,
1977	referenced in Section 611.611.
1978	
1979	Method 4500-H ⁺ B, pH Value, Electrometric Method,
1980	referenced in Section 611.611.
1981	
1982	Method 4500-NO ₂ ⁻ B, Nitrogen (Nitrite), Colorimetric
1983	Method, referenced in Section 611.611.
1984	
1985	Method 4500-NO ₃ ⁻ D, Nitrogen (Nitrate), Nitrate Electrode
1986	Method, referenced in Section 611.611.
1987	
1988	Method 4500-NO ₃ ⁻ E, Nitrogen (Nitrate), Cadmium
1989	Reduction Method, referenced in Section 611.611.
1990	
1991	Method 4500-NO ₃ ⁻ F, Nitrogen (Nitrate), Automated
1992	Cadmium Reduction Method, referenced in Section
1993	611.611.
1994	
1995	Method 4500-O ₃ B, Ozone (Residual) (Proposed), Indigo
1996	Colorimetric Method, referenced in Section 611.531.
1997	
1998	Method 4500-P E, Phosphorus, Ascorbic Acid Method,
1999	referenced in Section 611.611.
2000	
2001	Method 4500-P F, Phosphorus, Automated Ascorbic Acid
2002	Reduction Method, referenced in Section 611.611.
2003	
2004	Method 4500-Si D, Silica, Molybdosilicate Method,
2005	referenced in Section 611.611.
2006	
2007	Method 4500-Si E, Silica, Heteropoly Blue Method,
2008	referenced in Section 611.611.
2009	
2010	Method 4500-Si F, Silica, Automated Method for
2011	Molybdate-Reactive Silica, referenced in Section 611.611.
2012	
2013	Method 5910 B, UV Absorbing Organic Constituents,
2014	Ultraviolet Absorption Method, referenced in Section
2015	611.381.
2016	

2017	Method 6251 B, Disinfection Byproducts: Haloacetic Acids and Trichlorophenol, Micro Liquid-Liquid Extraction Gas Chromatographic Method, referenced in Section 611.381.
2018	
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2021	Method 6610, Carbamate Pesticide Method, referenced in Section 611.645.
2022	
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2024	Method 6651, Glyphosate Herbicide (Proposed), referenced in Section 611.645.
2025	
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2027	Method 7110 B, Gross Alpha and Gross Beta Radioactivity, Evaporation Method for Gross Alpha-Beta, referenced in Section 611.720.
2028	
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2031	Method 7110 C, Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved), Coprecipitation Method for Gross Alpha Radioactivity in Drinking Water (Proposed), referenced in Section 611.720.
2032	
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2036	Method 7120 B, Gamma-Emitting Radionuclides, Gamma Spectrometric Method, referenced in Section 611.720.
2037	
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2039	Method 7500-Cs B, Radioactive Cesium, Precipitation Method, referenced in Section 611.720.
2040	
2041	Method 7500- ³ H B, Tritium, Liquid Scintillation Spectrometric Method, referenced in Section 611.720.
2042	
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2045	Method 7500-I B, Radioactive Iodine, Precipitation Method, referenced in Section 611.720.
2046	
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2048	Method 7500-I C, Radioactive Iodine, Ion-Exchange Method, referenced in Section 611.720.
2049	
2050	
2051	Method 7500-I D, Radioactive Iodine, Distillation Method, referenced in Section 611.720.
2052	
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2055	Method 7500-Ra B, Radium, Precipitation Method, referenced in Section 611.720.
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2057	Method 7500-Ra C, Radium, Emanation Method, referenced in Section 611.720.
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2061	Method 7500-Ra D, Radium, Sequential Precipitation
2062	Method, referenced in Section 611.720.
2063	
2064	Method 7500-Sr B, Total Radiactive Strontium and
2065	Strontium 90, Precipitation Method, referenced in Section
2066	611.720.
2067	
2068	Method 7500-U B, Uranium, Radiochemical Method,
2069	referenced in Section 611.720.
2070	
2071	Method 7500-U C, Uranium, Isotopic Method, referenced
2072	in Section 611.720.
2073	
2074	Method 9215 B, Heterotrophic Plate Count, Pour Plate
2075	Method, referenced in Section 611.531.
2076	
2077	Method 9221 A, Multiple-Tube Fermentation Technique
2078	for Members of the Coliform Group, Introduction,
2079	referenced in Sections 611.526 and 611.531.
2080	
2081	Method 9221 B, Multiple-Tube Fermentation Technique
2082	for Members of the Coliform Group, Standard Total
2083	Coliform Fermentation Technique, referenced in Sections
2084	611.526 and 611.531.
2085	
2086	Method 9221 C, Multiple-Tube Fermentation Technique
2087	for Members of the Coliform Group, Estimation of
2088	Bacterial Density, referenced in Sections 611.526 and
2089	611.531.
2090	
2091	Method 9221 D, Multiple-Tube Fermentation Technique
2092	for Members of the Coliform Group, Presence-Absence (P-
2093	A) Coliform Test, referenced in Section 611.526.
2094	
2095	Method 9221 E, Multiple-Tube Fermentation Technique
2096	for Members of the Coliform Group, Fecal Coliform
2097	Procedure, referenced in Sections 611.526 and 611.531.
2098	
2099	Method 9222 A, Membrane Filter Technique for Members
2100	of the Coliform Group, Introduction, referenced in Sections
2101	611.526 and 611.531.
2102	

2103	Method 9222 B, Membrane Filter Technique for Members of the Coliform Group, Standard Total Coliform Membrane Filter Procedure, referenced in Sections 611.526 and 611.531.
2104	
2105	
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2108	Method 9222 C, Membrane Filter Technique for Members of the Coliform Group, Delayed-Incubation Total Coliform Procedure, referenced in Sections 611.526 and 611.531.
2109	
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2112	Method 9222 D, Membrane Filter Technique for Members of the Coliform Group, Fecal Coliform Membrane Filter Procedure, referenced in Section 611.531.
2113	
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2116	Method 9222 G, Membrane Filter Technique for Members of the Coliform Group, MF Partition Procedures, referenced in Section 611.526.
2117	
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2120	Method 9223, Chromogenic Substrate Coliform Test (also referred to as the variations "Autoanalysis Colilert System" and "Colisure Test"), referenced in Sections 611.526, and 611.531.
2121	
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2123	
2124	
2125	Method 9223 B, Chromogenic Substrate Coliform Test (Proposed), referenced in Section 611.1004.
2126	
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2128	"Supplement to the 19 th Edition of Standard Methods for the Examination of Water and Wastewater," American Public Health Association, 1996.
2129	
2130	
2131	
2132	Method 5310 B, TOC, Combustion-Infrared Method, referenced in Section 611.381.
2133	
2134	Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation Method, referenced in Section 611.381.
2135	
2136	
2137	Method 5310 D, TOC, Wet-Oxidation Method, referenced in Section 611.381.
2138	
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2140	
2141	"Standard Methods for the Examination of Water and Wastewater," 20 th Edition, 1998 (referred to as "Standard Methods, 20 th ed.").
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2143	
2144	

2145	Method 2130 B, Turbidity, Nephelometric Method,
2146	referenced in Section 611.531.
2147	
2148	Method 2320 B, Alkalinity, Titration Method, referenced in
2149	Section 611.611.
2150	
2151	Method 2510 B, Conductivity, Laboratory Method,
2152	referenced in Section 611.611.
2153	
2154	Method 2550, Temperature, Laboratory, and Field
2155	Methods, referenced in Section 611.611.
2156	
2157	Method 3120 B, Metals by Plasma Emission Spectroscopy,
2158	Inductively-Coupled Plasma (ICP) Method, referenced in
2159	<u>Sections 611.611 and Section 611.612.</u>
2160	
2161	Method 3500-Ca B, Calcium, EDTA Titrimetric Method,
2162	referenced in Section 611.611.
2163	
2164	Method 3500-Mg B, Magnesium, EDTA Titrimetric
2165	Method, referenced in Section 611.611.
2166	
2167	Method 4110 B, Determination of Anions by Ion
2168	Chromatography, Ion Chromatography with Chemical
2169	Suppression of Eluent Conductivity, referenced in Section
2170	611.611.
2171	
2172	Method 4500-CN ⁻ C, Cyanide, Total Cyanide after
2173	Distillation, referenced in Section 611.611.
2174	
2175	Method 4500-CN ⁻ E, Cyanide, Colorimetric Method,
2176	referenced in Section 611.611.
2177	
2178	Method 4500-CN ⁻ F, Cyanide, Cyanide-Selective Electrode
2179	Method, referenced in Section 611.611.
2180	
2181	Method 4500-CN ⁻ G, Cyanide, Cyanides Amenable to
2182	Chlorination after Distillation, referenced in Section
2183	611.611.
2184	
2185	Method 4500-Cl D, Chlorine, Amperometric Titration
2186	Method, referenced in Section 611.531.
2187	

2188	Method 4500-Cl E, Chlorine, Low-Level Amperometric
2189	Titration Method, referenced in Section 611.531.
2190	
2191	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
2192	Method, referenced in Section 611.531.
2193	
2194	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
2195	referenced in Section 611.531.
2196	
2197	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
2198	Method, referenced in Section 611.531.
2199	
2200	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
2201	referenced in Section 611.531.
2202	
2203	Method 4500-ClO ₂ C, Chlorine Dioxide, Amperometric
2204	Method I, referenced in Section 611.531.
2205	
2206	Method 4500-ClO ₂ D, Chlorine Dioxide, DPD Method,
2207	referenced in Section 611.531.
2208	
2209	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric
2210	Method II (Proposed), referenced in Section and 611.531.
2211	
2212	Method 4500-F ⁻ B, Fluoride, Preliminary Distillation Step,
2213	referenced in Section 611.611.
2214	
2215	Method 4500-F ⁻ C, Fluoride, Ion-Selective Electrode
2216	Method, referenced in Section 611.611.
2217	
2218	Method 4500-F ⁻ D, Fluoride, SPADNS Method, referenced
2219	in Section 611.611.
2220	
2221	Method 4500-F ⁻ E, Fluoride, Complexone Method,
2222	referenced in Section 611.611.
2223	
2224	Method 4500-H ⁺ B, pH Value, Electrometric Method,
2225	referenced in Section 611.611.
2226	
2227	Method 4500-NO ₂ ⁻ B, Nitrogen (Nitrite), Colorimetric
2228	Method, referenced in Section 611.611.
2229	

2230	Method 4500-NO ₃ ⁻ D, Nitrogen (Nitrate), Nitrate Electrode
2231	Method, referenced in Section 611.611.
2232	
2233	Method 4500-NO ₃ ⁻ E, Nitrogen (Nitrate), Cadmium
2234	Reduction Method, referenced in Section 611.611.
2235	
2236	Method 4500-NO ₃ ⁻ F, Nitrogen (Nitrate), Automated
2237	Cadmium Reduction Method, referenced in Section
2238	611.611.
2239	
2240	Method 4500-O ₃ B, Ozone (Residual) (Proposed), Indigo
2241	Colorimetric Method, referenced in Section 611.531.
2242	
2243	Method 4500-P E, Phosphorus, Ascorbic Acid Method,
2244	referenced in Section 611.611.
2245	
2246	Method 4500-P F, Phosphorus, Automated Ascorbic Acid
2247	Reduction Method, referenced in Section 611.611.
2248	
2249	Method 4500-Si C, Silica, Molybdosilicate Method,
2250	referenced in Section 611.611.
2251	
2252	Method 4500-Si D, Silica, Heteropoly Blue Method,
2253	referenced in Section 611.611.
2254	
2255	Method 4500-Si E, Silica, Automated Method for
2256	Molybdate-Reactive Silica, referenced in Section 611.611.
2257	
2258	Method 5910 B, UV-Absorbing Organic Constituents,
2259	Ultraviolet Absorption Method, referenced in Sections
2260	611.381 and 611.382.
2261	
2262	Method 6251, Disinfection By-Products: Haloacetic Acids
2263	and Trichlorophenol, referenced in Section 611.381.
2264	
2265	Method 6610, Carbamate Pesticide Method, referenced in
2266	Section 611.645.
2267	
2268	Method 6651, Glyphosate Herbicide (Proposed), referenced
2269	in Section 611.645.
2270	

2271	Method 7110 B, Gross Alpha and Gross Beta
2272	Radioactivity, Evaporation Method for Gross Alpha-Beta,
2273	referenced in Section 611.720.
2274	
2275	Method 7110 C, Gross Alpha and Beta Radioactivity
2276	(Total, Suspended, and Dissolved), Coprecipitation Method
2277	for Gross Alpha Radioactivity in Drinking Water
2278	(Proposed), referenced in Section 611.720.
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2281	Gamma Spectrometric Method , referenced in Section
2282	611.720.
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2285	Method, referenced in Section 611.720.
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2288	Spectrometric Method, referenced in Section 611.720.
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2290	Method 7500-I B, Radioactive Iodine, Precipitation
2291	Method, referenced in Section 611.720.
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2294	Method, referenced in Section 611.720.
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2296	Method 7500-I D, Radioactive Iodine, Distillation Method,
2297	referenced in Section 611.720.
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2300	referenced in Section 611.720.
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2303	referenced in Section 611.720.
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2305	<u>Method 7500-Ra D, Radium, Sequential Precipitation</u>
2306	<u>Method, referenced in Section 611.720.</u>
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2308	Method 7500-Sr B, Total Radioactive Strontium and
2309	Strontium 90, Precipitation Method, referenced in Section
2310	611.720.
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2320	Method, referenced in Section 611.531.
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2323	for Members of the Coliform Group, Introduction,
2324	referenced in Sections 611.526 and 611.531.
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2326	Method 9221 B, Multiple-Tube Fermentation Technique
2327	for Members of the Coliform Group, Standard Total
2328	Coliform Fermentation Technique, referenced in Sections
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2331	Method 9221 C, Multiple-Tube Fermentation Technique
2332	for Members of the Coliform Group, Estimation of
2333	Bacterial Density, referenced in Sections 611.526 and
2334	611.531.
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2336	Method 9221 D, Multiple-Tube Fermentation Technique
2337	for Members of the Coliform Group, Presence-Absence (P-
2338	A) Coliform Test, referenced in Sections 611.526.
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2340	Method 9221 E, Multiple-Tube Fermentation Technique
2341	for Members of the Coliform Group, Fecal Coliform
2342	Procedure, referenced in Sections 611.526 and 611.531.
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2344	Method 9221 F, Multiple-Tube Fermentation Technique for
2345	Members of the Coliform Group, Escherichia Coli
2346	Procedure (Proposed), referenced in Section 611.802.
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2348	Method 9222 A, Membrane Filter Technique for Members
2349	of the Coliform Group, Introduction, referenced in Sections
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2352	Method 9222 B, Membrane Filter Technique for Members
2353	of the Coliform Group, Standard Total Coliform Membrane
2354	Filter Procedure, referenced in Sections 611.526 and
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2356	Method 9222 C, Membrane Filter Technique for Members of the Coliform Group, Delayed-Incubation Total Coliform Procedure, referenced in Sections 611.526 and 611.531.	
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2364	Method 9222 G, Membrane Filter Technique for Members of the Coliform Group, MF Partition Procedures, referenced in Section 611.526.	
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2368	Method 9223, Chromogenic Substrate Coliform Test (also referred to as the variations "Autoanalysis Colilert System" and "Colisure Test"), referenced in Sections 611.526, 611.531.	
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2391	<u>referenced in Section 611.531.</u>	
2392	<u>Method 2320 B, Alkalinity, Titration Method, referenced in</u>	
2393		<u>Section 611.611.</u>
2394		
2395	<u>Method 2510 B, Conductivity, Laboratory Method,</u>	
2396		<u>referenced in Section 611.611.</u>
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2399	<u>Method 2550, Temperature, Laboratory, and Field</u>
2400	<u>Methods, referenced in Section 611.611.</u>
2401	
2402	<u>Method 3111 B, Metals by Flame Atomic Absorption</u>
2403	<u>Spectrometry, Direct Air-Acetylene Flame Method,</u>
2404	<u>referenced in Sections 611.611 and 611.612.</u>
2405	
2406	<u>Method 3111 D, Metals by Flame Atomic Absorption</u>
2407	<u>Spectrometry, Direct Nitrous Oxide-Acetylene Flame</u>
2408	<u>Method, referenced in Section 611.611.</u>
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2410	<u>Method 3112 B, Metals by Cold-Vapor Atomic Absorption</u>
2411	<u>Spectrometry, Cold-Vapor Atomic Absorption</u>
2412	<u>Spectrometric Method, referenced in Section 611.611.</u>
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2415	<u>Absorption Spectrometry, Electrothermal Atomic</u>
2416	<u>Absorption Spectrometric Method, referenced in Sections</u>
2417	<u>611.611 and 611.612.</u>
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2419	<u>Method 3114 B, Metals by Hydride Generation/Atomic</u>
2420	<u>Absorption Spectrometry, Manual Hydride</u>
2421	<u>Generation/Atomic Absorption Spectrometric Method,</u>
2422	<u>referenced in Section 611.611.</u>
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2425	<u>Inductively-Coupled Plasma (ICP) Method, referenced in</u>
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2429	<u>referenced in Section 611.611.</u>
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2432	<u>referenced in Section 611.611.</u>
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2434	<u>Method 3500-Mg B, Magnesium, Calculation Method,</u>
2435	<u>referenced in Section 611.611.</u>
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2437	<u>Method 4110 B, Determination of Anions by Ion</u>
2438	<u>Chromatography, Ion Chromatography with Chemical</u>
2439	<u>Suppression of Eluent Conductivity, referenced in Section</u>
2440	<u>611.611.</u>
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2442	Method 4500-Cl D, Chlorine, Amperometric Titration
2443	Method, referenced in Section 611.381.
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2446	Titration Method, referenced in Section 611.381.
2447	
2448	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
2449	Method, referenced in Section 611.381.
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2451	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
2452	referenced in Section 611.381.
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2454	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
2455	Method, referenced in Section 611.381.
2456	
2457	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
2458	referenced in Section 611.381.
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2460	<u>Method 4500-ClO₂ C, Chlorine Dioxide, Amperometric</u>
2461	<u>Method I, referenced in Section 611.531.</u>
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2463	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric
2464	Method II (Proposed), referenced in Section and 611.381.
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2466	<u>Method 4500-CN E, Cyanide, Colorimetric Method,</u>
2467	<u>referenced in Section 611.611.</u>
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2469	<u>Method 4500-CN F, Cyanide, Cyanide-Selective Electrode</u>
2470	<u>Method, referenced in Section 611.611.</u>
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2472	<u>Method 4500-CN G, Cyanide, Cyanides Amenable to</u>
2473	<u>Chlorination after Distillation, referenced in Section</u>
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2477	<u>referenced in Section 611.611.</u>
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2479	<u>Method 4500-F C, Fluoride, Ion-Selective Electrode</u>
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2482	<u>Method 4500-F D, Fluoride, SPADNS Method, referenced</u>
2483	<u>in Section 611.611.</u>
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2485	<u>Method 4500-F⁻ E, Fluoride, Complexone Method,</u>
2486	<u>referenced in Section 611.611.</u>
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2488	<u>Method 4500-H⁺ B, pH Value, Electrometric Method,</u>
2489	<u>referenced in Section 611.611.</u>
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2491	<u>Method 4500-NO₂⁻ B, Nitrogen (Nitrite), Colorimetric</u>
2492	<u>Method, referenced in Section 611.611.</u>
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2495	<u>Method, referenced in Section 611.611.</u>
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2497	<u>Method 4500-NO₃⁻ E, Nitrogen (Nitrate), Cadmium</u>
2498	<u>Reduction Method, referenced in Section 611.611.</u>
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2501	<u>Cadmium Reduction Method, referenced in Section</u>
2502	<u>611.611.</u>
2503	
2504	<u>Method 4500-O₃ B, Ozone (Residual) (Proposed), Indigo</u>
2505	<u>Colorimetric Method, referenced in Section 611.531.</u>
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2507	<u>Method 4500-P E, Phosphorus, Ascorbic Acid Method,</u>
2508	<u>referenced in Section 611.611.</u>
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2510	<u>Method 4500-P F, Phosphorus, Automated Ascorbic Acid</u>
2511	<u>Reduction Method, referenced in Section 611.611.</u>
2512	
2513	<u>Method 4500-SiO₂ C, Silica, Molybdosilicate Method,</u>
2514	<u>referenced in Section 611.611.</u>
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2516	<u>Method 4500-SiO₂ D, Silica, Heteropoly Blue Method,</u>
2517	<u>referenced in Section 611.611.</u>
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2519	<u>Method 4500-SiO₂ E, Silica, Automated Method for</u>
2520	<u>Molybdate-Reactive Silica, referenced in Section 611.611.</u>
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2522	<u>Method 5310 B, TOC, Combustion-Infrared Method,</u>
2523	<u>referenced in Section 611.381.</u>
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2525	<u>Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation</u>
2526	<u>Method, referenced in Section 611.381.</u>
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2529	in Section 611.381.
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2532	Ultraviolet Absorption Method, referenced in Sections
2533	611.381 and 611.382.
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2536	and Trichlorophenol, referenced in Section 611.381.
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2538	<u>Method 6610, Carbamate Pesticide Method, referenced in</u>
2539	<u>Section 611.645.</u>
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2542	<u>Radioactivity, Evaporation Method for Gross Alpha-Beta,</u>
2543	<u>referenced in Section 611.720.</u>
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2545	<u>Method 7110 C, Gross Alpha and Beta Radioactivity</u>
2546	<u>(Total, Suspended, and Dissolved), Coprecipitation Method</u>
2547	<u>for Gross Alpha Radioactivity in Drinking Water</u>
2548	<u>(Proposed), referenced in Section 611.720.</u>
2549	
2550	<u>Method 7120, Gamma-Emitting Radionuclides, referenced</u>
2551	<u>in Section 611.720.</u>
2552	
2553	<u>Method 7500-Cs B, Radioactive Cesium, Precipitation</u>
2554	<u>Method, referenced in Section 611.720.</u>
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2556	<u>Method 7500-³H B, Tritium, Liquid Scintillation</u>
2557	<u>Spectrometric Method, referenced in Section 611.720.</u>
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2559	<u>Method 7500-I B, Radioactive Iodine, Precipitation</u>
2560	<u>Method, referenced in Section 611.720.</u>
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2562	<u>Method 7500-I C, Radioactive Iodine, Ion-Exchange</u>
2563	<u>Method, referenced in Section 611.720.</u>
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2565	<u>Method 7500-I D, Radioactive Iodine, Distillation Method,</u>
2566	<u>referenced in Section 611.720.</u>
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2568	<u>Method 7500-Ra B, Radium, Precipitation Method,</u>
2569	<u>referenced in Section 611.720.</u>
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2571	<u>Method 7500-Ra C, Radium, Emanation Method,</u>
2572	<u>referenced in Section 611.720.</u>
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2574	<u>Method 7500-Ra D, Radium, Sequential Precipitation</u>
2575	<u>Method, referenced in Section 611.720.</u>
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2577	<u>Method 7500-Sr B, Total Radioactive Strontium and</u>
2578	<u>Strontium 90, Precipitation Method, referenced in Section</u>
2579	<u>611.720.</u>
2580	
2581	<u>Method 7500-U B, Uranium, Radiochemical Method,</u>
2582	<u>referenced in Section 611.720.</u>
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2584	<u>Method 7500-U C, Uranium, Isotopic Method, referenced</u>
2585	<u>in Section 611.720.</u>
2586	
2587	<u>Method 9221 A, Multiple-Tube Fermentation Technique</u>
2588	<u>for Members of the Coliform Group, Introduction,</u>
2589	<u>referenced in Sections 611.526 and 611.531.</u>
2590	
2591	<u>Method 9221 B, Multiple-Tube Fermentation Technique</u>
2592	<u>for Members of the Coliform Group, Standard Total</u>
2593	<u>Coliform Fermentation Technique, referenced in Sections</u>
2594	<u>611.526 and 611.531.</u>
2595	
2596	<u>Method 9221 C, Multiple-Tube Fermentation Technique</u>
2597	<u>for Members of the Coliform Group, Estimation of</u>
2598	<u>Bacterial Density, referenced in Sections 611.526 and</u>
2599	<u>611.531.</u>
2600	
2601	<u>Method 9221 D, Multiple-Tube Fermentation Technique</u>
2602	<u>for Members of the Coliform Group, Presence-Absence (P-</u>
2603	<u>A) Coliform Test, referenced in Section 611.526.</u>
2604	
2605	<u>Method 9221 E, Multiple-Tube Fermentation Technique</u>
2606	<u>for Members of the Coliform Group, Fecal Coliform</u>
2607	<u>Procedure, referenced in Sections 611.526 and 611.531.</u>
2608	
2609	<u>Method 9221 F, Multiple-Tube Fermentation Technique for</u>
2610	<u>Members of the Coliform Group, Escherichia Coli</u>
2611	<u>Procedure (Proposed), referenced in Section 611.802.</u>
2612	

2613 Method 9222 A, Membrane Filter Technique for Members
2614 of the Coliform Group, Introduction, referenced in Sections
2615 611.526 and 611.531.

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2617 Method 9222 B, Membrane Filter Technique for Members
2618 of the Coliform Group, Standard Total Coliform Membrane
2619 Filter Procedure, referenced in Sections 611.526 and
2620 611.531.

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2624 Procedure, referenced in Sections 611.526 and 611.531.

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2628 Procedure, referenced in Section 611.531.

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2631 of the Coliform Group, MF Partition Procedures,
2632 referenced in Section 611.526.

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2636 and "Colisure Test"), referenced in Sections 611.526 and
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3320 Coupled Plasma – Atomic Emission Spectrometry," October 2003,
3321 EPA 600/R-06/115 (referred to as "USEPA NERL Method
3322 200.5"), referenced in Sections 611.611 and 611.612.
3323
3324 USEPA Method 415.3, Revision 1.1, "Determination of Total
3325 Organic Carbon and Specific UV Absorbance at 254 nm in Source
3326 Water and Drinking Water," February 2005, EPA 600/R-05/055
3327 (referred to as "USEPA NERL Method 415.3 (rev. 1.1)"),
3328 referenced in Section 611.381.
3329
3330 USEPA, Science and Technology Branch, Criteria and Standards
3331 Division, Office of Drinking Water, Washington, D.C. 20460.
3332
3333 "Guidance Manual for Compliance with the Filtration and
3334 Disinfection Requirements for Public Water Systems using Surface
3335 Water Sources," October 1989, referenced in Sections 611.111 and
3336 611.212.
3337
3338 USEPA Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue,
3339 NW, Washington, DC 20460:
3340
3341 "Charm E*Colite Presence/Absence Test for Detection and
3342 Identification of Coliform Bacteria and Escherichia coli in

3343 Drinking Water," January 9, 1998 (referred to as "E*Colite Test"),
 3344 referenced in Section 611.802 (also available from Charm
 3345 Sciences, Inc.).
 3346

3347 "Total Coliforms and E. coli Membrane Filtration Method with m-
 3348 ColiBlue24® Broth," Method No. 10029, Revision 2, August 17,
 3349 1999 (referred to as "m-ColiBlue24 Test"), referenced in Section
 3350 611.802 (also available from The Hach Company).
 3351

3352 "EPA Method 1600: Enterococci in Water by Membrane Filtration
 3353 Using Membrane-Enterococcus Indoxyl-b-D-Glucoside Agar
 3354 (mEI)," September 2002, EPA 821/R-02/022 (referred to as
 3355 "USEPA Method 1600") is an approved variation of Standard
 3356 Methods, Method 9230 C, "Fecal Streptococcus and Enterococcus
 3357 Groups, Membrane Filter Techniques" (which has not itself been
 3358 approved for use by USEPA) (accessible on-line and available by
 3359 download from <http://www.epa.gov/nerlcwww/1600sp02.pdf>),
 3360 referenced in Section 611.802.
 3361

3362 "Method 1601: Male-specific (F⁺) and Somatic Coliphage in
 3363 Water by Two-step Enrichment Procedure," April 2001, EPA
 3364 821/R-01/030 (referred to as "USEPA Method 1601") (accessible
 3365 on-line and available by download from
 3366 <http://www.epa.gov/nerlcwww/1601ap01.pdf>), referenced in
 3367 Section 611.802.
 3368

3369 "Method 1602: Male-specific (F⁺) and Somatic Coliphage in
 3370 Water by Single Agar Layer (SAL) Procedure," April 2001, EPA
 3371 821/R-01/029 (referred to as "USEPA Method 1602") (accessible
 3372 on-line and available by download from
 3373 <http://www.epa.gov/nerlcwww/1602ap01.pdf>), referenced in
 3374 Section 611.802.
 3375

3376 "Method 1604: Total Coliforms and Escherichia coli in Water by
 3377 Membrane Filtration Using a Simultaneous Detection Technique
 3378 (MI Medium)," September 2002, EPA 821/R-02/024 (referred to
 3379 as "USEPA Method 1604") (accessible on-line and available by
 3380 download from <http://www.epa.gov/nerlcwww/1604sp02.pdf>),
 3381 referenced in Section 611.802.
 3382

3383 USGS. Books and Open-File Reports Section, United States Geological
 3384 Survey, Federal Center, Box 25286, Denver, CO 80225-0425.
 3385

3386	Methods available upon request by method number from "Methods 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," 3rd ed., Open-File Report 85-495, 1989, as appropriate (referred to as "USGS Methods").	
3387		
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3394		
3395		I-1030-85, referenced in Section 611.611.
3396		
3397	I-1601-85, referenced in Section 611.611.	
3398		
3399	I-1700-85, referenced in Section 611.611.	
3400		
3401	I-2598-85, referenced in Section 611.611.	
3402		
3403	I-2601-90, referenced in Section 611.611.	
3404		
3405	I-2700-85, referenced in Section 611.611.	
3406		
3407	I-3300-85, referenced in Section 611.611.	
3408		
3409	Methods available upon request by method number from "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments," Chapter A5 in Book 5 of "Techniques of Water-Resources Investigations of the United States Geological Survey," 1997.	
3410		
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3415		R-1110-76, referenced in Section 611.720.
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3417		R-1111-76, referenced in Section 611.720.
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3419	R-1120-76, referenced in Section 611.720.	
3420		
3421	R-1140-76, referenced in Section 611.720.	
3422		
3423	R-1141-76, referenced in Section 611.720.	
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3425	R-1142-76, referenced in Section 611.720.	
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3427	R-1160-76, referenced in Section 611.720.	
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3429 R-1171-76, referenced in Section 611.720.

3430
3431 R-1180-76, referenced in Section 611.720.

3432
3433 R-1181-76, referenced in Section 611.720.

3434
3435 R-1182-76, referenced in Section 611.720.

3436
3437 Waters Corporation, Technical Services Division, 34 Maple St., Milford,
3438 MA 01757 (800-252-4752 or 508-482-2131, fax: 508-482-3625).

3439
3440 "Waters Test Method for Determination of Nitrite/Nitrate in Water
3441 Using Single Column Ion Chromatography," Method B-1011,
3442 August 1987 (referred to as "Waters Method B-1011"), referenced
3443 in Section 611.611.

3444
3445 c) The Board incorporates the following federal regulations by reference:

3446
3447 40 CFR 3.2 ~~(2007)~~(2006) (How Does This Part Provide for Electronic
3448 Reporting?), referenced in Section 611.105.

3449
3450 40 CFR 3.3 ~~(2007)~~(2006) (What Definitions Are Applicable to This
3451 Part?), referenced in Section 611.105.

3452
3453 40 CFR 3.10 ~~(2007)~~(2006) (What Are the Requirements for Electronic
3454 Reporting to EPA?), referenced in Section 611.105.

3455
3456 40 CFR 3.2000 ~~(2007)~~(2006) (What Are the Requirements Authorized
3457 State, Tribe, and Local Programs' Reporting Systems Must Meet?),
3458 referenced in Section 611.105.

3459
3460 40 CFR 136.3(a) ~~(2007)~~(2006), referenced in Section 611.1004.

3461
3462 Appendix B to 40 CFR 136 ~~(2007)~~(2006), referenced in Sections 611.359,
3463 611.609, and 611.646.

3464
3465 d) This Part incorporates no later amendments or editions.

3466
3467 (Source: Amended at 33 Ill. Reg. _____, effective _____)

3468
3469 SUBPART G: LEAD AND COPPER

3470
3471 **Section 611.350 General Requirements**

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a) Applicability and Scope

- 1) Applicability. The requirements of this Subpart G constitute national primary drinking water regulations for lead and copper. This Subpart G applies to all community water systems (CWSs) and non-transient, non-community water systems (NTNCWSs).
- 2) Scope. This Subpart G establishes a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

b) Definitions. For the purposes of only this Subpart G, the following terms have the following meanings:

"Action level" means that concentration of lead or copper in water computed pursuant to subsection (c) of this Section that determines, in some cases, the treatment requirements of this Subpart G that a supplier must complete. The action level for lead is 0.015 mg/ℓ. The action level for copper is 1.3 mg/ℓ.

"Corrosion inhibitor" means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

"Effective corrosion inhibitor residual" means a concentration of inhibitor in the drinking water sufficient to form a passivating film on the interior walls of a pipe.

"Exceed," as this term is applied to either the lead or the copper action level, means that the 90th percentile level of the supplier's samples collected during a six-month monitoring period is greater than the action level for that contaminant.

"First draw sample" means a one-liter sample of tap water, collected in accordance with Section 61.356(b)(2), that has been standing in plumbing pipes for at least six hours and which is collected without flushing the tap.

"Large system" means a water system that regularly serves water to more

3515 than 50,000 persons.

3516
3517 "Lead service line" means a service line made of lead that connects the
3518 water main to the building inlet, including any lead pigtail, gooseneck, or
3519 other fitting that is connected to such lead line.

3520
3521 "Maximum permissible concentration" or "MPC" means that
3522 concentration of lead or copper for finished water entering the supplier's
3523 distribution system, designated by the Agency by a SEP pursuant to
3524 Sections 611.110 and 611.353(b) that reflects the contaminant removal
3525 capability of the treatment properly operated and maintained.
3526 BOARD NOTE: Derived from 40 CFR 141.83(b)(4) (2007)~~(2002)~~. (See
3527 Section 611.353(b)(4)(B).)

3528
3529 "Medium-sized system" means a water system that regularly serves water
3530 to more than 3,300 up to 50,000 or fewer persons.

3531
3532 "Meet," as this term is applied to either the lead or the copper action level,
3533 means that the 90th percentile level of the supplier's samples collected
3534 during a six-month monitoring period is less than or equal to the action
3535 level for that contaminant.

3536
3537 "Method detection limit" or "MDL" is as defined at Section 611.646(a).
3538 The MDL for lead is 0.001 mg/ℓ. The MDL for copper is 0.001 mg/ℓ, or
3539 0.020 mg/ℓ by atomic absorption direct aspiration method.
3540 BOARD NOTE: Derived from 40 CFR 141.89(a)(1)(iii) (2007)~~(2002)~~.

3541
3542 "Monitoring period" means any of the six-month periods of time during
3543 which a supplier must complete a cycle of monitoring under this Subpart
3544 G.
3545 BOARD NOTE: USEPA refers to these as "monitoring periods." The
3546 Board uses "six-month monitoring period" to avoid confusion with
3547 "compliance period," as used elsewhere in this Part and defined at Section
3548 611.101.

3549
3550 "Multiple-family residence" means a building that is currently used as a
3551 multiple-family residence, but not one that is also a "single-family
3552 structure."

3553
3554 "90th percentile level" means that concentration of lead or copper
3555 contaminant exceeded by ten percent or fewer of all samples collected
3556 during a six-month monitoring period pursuant to Section 611.356 (i.e.,
3557 that concentration of contaminant greater than or equal to the results

3558 obtained from 90 percent of the samples). The 90th percentile levels for
3559 copper and lead must be determined pursuant to subsection (c)(3) of this
3560 Section.

3561 BOARD NOTE: Derived from 40 CFR 141.80(c) (2007)~~(2002)~~.

3562
3563 "Optimal corrosion control treatment" means the corrosion control
3564 treatment that minimizes the lead and copper concentrations at users' taps
3565 while ensuring that the treatment does not cause the water system to
3566 violate any national primary drinking water regulations.

3567
3568 "Practical quantitation limit" or "PQL" means the lowest concentration of
3569 a contaminant that a well-operated laboratory can reliably achieve within
3570 specified limits of precision and accuracy during routine laboratory
3571 operating conditions. The PQL for lead is 0.005 mg/ℓ. The PQL for
3572 copper is 0.050 mg/ℓ.

3573 BOARD NOTE: Derived from 40 CFR 141.89(a)(1)(ii) and (a)(1)(iv)
3574 (2007)~~(2002)~~.

3575
3576 "Service line sample" means a one-liter sample of water, collected in
3577 accordance with Section 611.356(b)(3), that has been standing for at least
3578 six hours in a service line.

3579
3580 "Single-family structure" means a building that was constructed as a
3581 single-family residence and which is currently used as either a residence
3582 or a place of business.

3583
3584 "Small system" means a water system that regularly serves water to 3,300
3585 or fewer persons.

3586 BOARD NOTE: Derived from 40 CFR 141.2 (2007)~~(2002)~~.

- 3587
3588 c) Lead and Copper Action Levels.
- 3589
3590 1) The lead action level is exceeded if the 90th percentile lead level is greater
3591 than 0.015 mg/ℓ.
 - 3592
3593 2) The copper action level is exceeded if the 90th percentile copper level is
3594 greater than 1.3 mg/ℓ.
 - 3595
3596 3) Suppliers must compute the 90th percentile lead and copper levels as
3597 follows:
 - 3598
3599 A) List the results of all lead or copper samples taken during a six-
3600 month monitoring period in ascending order, ranging from the

3601 sample with the lowest concentration first to the sample with the
 3602 highest concentration last. Assign each sampling result a number,
 3603 ascending by single integers beginning with the number 1 for the
 3604 sample with the lowest contaminant level. The number assigned to
 3605 the sample with the highest contaminant level must be equal to the
 3606 total number of samples taken.

3607
 3608 B) Determine the number for the 90th percentile sample by
 3609 multiplying the total number of samples taken during the six-
 3610 month monitoring period by 0.9.

3611
 3612 C) The contaminant concentration in the sample with the number
 3613 yielded by the calculation in subsection (c)(3)(B) of this Section is
 3614 the 90th percentile contaminant level.

3615
 3616 D) For suppliers that collect five samples per six-month monitoring
 3617 period, the 90th percentile is computed by taking the average of the
 3618 highest and second highest concentrations.

3619
 3620 E) For a supplier that has been allowed by the Agency to collect fewer
 3621 than five samples in accordance with Section 611.356(c), the
 3622 sample result with the highest concentration is considered the 90th
 3623 percentile value.

3624
 3625 d) Corrosion Control Treatment Requirements.

3626
 3627 1) All suppliers must install and operate optimal corrosion control treatment.

3628
 3629 2) Any supplier that complies with the applicable corrosion control treatment
 3630 requirements specified by the Agency pursuant to Sections 611.351 and
 3631 611.352 is deemed in compliance with the treatment requirement of
 3632 subsection (d)(1) of this Section.

3633
 3634 e) Source water treatment requirements. Any supplier whose system exceeds the
 3635 lead or copper action level must implement all applicable source water treatment
 3636 requirements specified by the Agency pursuant to Section 611.353.

3637
 3638 f) Lead service line replacement requirements. Any supplier whose system exceeds
 3639 the lead action level after implementation of applicable corrosion control and
 3640 source water treatment requirements must complete the lead service line
 3641 replacement requirements contained in Section 611.354.

3642
 3643 g) Public education requirements. Pursuant to Section 611.355, the supplier must

3644 provide a consumer notice of the lead tap water monitoring results to the persons
3645 served at each site (tap) that is tested. Any supplier whose system exceeds the
3646 lead action level must implement the public education requirements ~~contained in~~
3647 Section 611.355.
3648

- 3649 h) Monitoring and analytical requirements. Suppliers must complete all tap water
3650 monitoring for lead and copper, monitoring for water quality parameters, source
3651 water monitoring for lead and copper, and analyses of the monitoring results
3652 under this Subpart G in compliance with Sections 611.356, 611.357, 611.358, and
3653 611.359.
3654
3655 i) Reporting requirements. Suppliers must report to the Agency any information
3656 required by the treatment provisions of this Subpart G and Section 611.360.
3657
3658 j) Recordkeeping requirements. Suppliers must maintain records in accordance with
3659 Section 611.361.
3660
3661 k) Violation of national primary drinking water regulations. Failure to comply with
3662 the applicable requirements of this Subpart G, including conditions imposed by
3663 the Agency by SEP pursuant to these provisions and Section 611.110, will
3664 constitute a violation of the national primary drinking water regulations for lead
3665 or copper.
3666

3667 BOARD NOTE: Derived from 40 CFR 141.80 (2007), as amended at 72 Fed. Reg.
3668 57782 (October 10, 2007)(2002).
3669

3670 (Source: Amended at 33 Ill. Reg. _____, effective _____)
3671

3672 **Section 611.351 Applicability of Corrosion Control**
3673

- 3674 a) Corrosion control required. Suppliers must complete the applicable corrosion
3675 control treatment requirements described in Section 611.352 on or before the
3676 deadlines set forth in this Section.
3677
3678 1) Large systems. Each large system supplier (one regularly serving more
3679 than 50,000 persons) must complete the corrosion control treatment steps
3680 specified in subsection (d) of this Section, unless it is deemed to have
3681 optimized corrosion control under subsection (b)(2) or (b)(3) of this
3682 Section.
3683
3684 2) Medium-sized and small systems. Each small system supplier (one
3685 regularly serving 3,300 or fewer persons) and each medium-sized system
3686 (one regularly serving more than 3,300 up to 50,000 persons) must

3687 complete the corrosion control treatment steps specified in subsection (e)
3688 of this Section, unless it is deemed to have optimized corrosion control
3689 under one of subsections (b)(1), (b)(2), or (b)(3) of this Section.
3690

3691 b) Suppliers deemed to have optimized corrosion control. A supplier is deemed to
3692 have optimized corrosion control, and is not required to complete the applicable
3693 corrosion control treatment steps identified in this Section, if the supplier satisfies
3694 one of the criteria specified in subsections (b)(1) through (b)(3) of this Section.
3695 Any such system deemed to have optimized corrosion control under this
3696 subsection, and which has treatment in place, must continue to operate and
3697 maintain optimal corrosion control treatment and meet any requirements that the
3698 Agency determines are appropriate to ensure optimal corrosion control treatment
3699 is maintained.
3700

3701 1) Small- or medium-sized system meeting action levels. A small system or
3702 medium-sized system supplier is deemed to have optimized corrosion
3703 control if the system meets the lead and copper action levels during each
3704 of two consecutive six-month monitoring periods with monitoring
3705 conducted in accordance with Section 611.356.
3706

3707 2) SEP for equivalent activities to corrosion control. The Agency must, by a
3708 SEP granted pursuant to Section 611.110, deem any supplier to have
3709 optimized corrosion control treatment if it determines that the supplier has
3710 conducted activities equivalent to the corrosion control steps applicable
3711 under this Section. In making this determination, the Agency must specify
3712 the water quality control parameters representing optimal corrosion
3713 control in accordance with Section 611.352(f). A water supplier that is
3714 deemed to have optimized corrosion control under this subsection (b)(2)
3715 must operate in compliance with the Agency-designated optimal water
3716 quality control parameters in accordance with Section 611.352(g) and
3717 must continue to conduct lead and copper tap and water quality parameter
3718 sampling in accordance with Sections 611.356(d)(3) and 611.357(d),
3719 respectively. A supplier must provide the Agency with the following
3720 information in order to support an Agency SEP determination under this
3721 subsection (b)(2):
3722

3723 A) The results of all test samples collected for each of the water
3724 quality parameters in Section 611.352(c)(3);
3725

3726 B) A report explaining the test methods the supplier used to evaluate
3727 the corrosion control treatments listed in Section 611.352(c)(1), the
3728 results of all tests conducted, and the basis for the supplier's
3729 selection of optimal corrosion control treatment;

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- C) A report explaining how the supplier has installed corrosion control and how the supplier maintains it to insure minimal lead and copper concentrations at consumer's taps; and
 - D) The results of tap water samples collected in accordance with Section 611.356 at least once every six months for one year after corrosion control has been installed.
- 3) Results less than practical quantitation level (PQL) for lead. Any supplier is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with Section 611.356 and source water monitoring conducted in accordance with Section 611.358 that demonstrate that for two consecutive six-month monitoring periods the difference between the 90th percentile tap water lead level, computed pursuant to Section 611.350(c)(3), and the highest source water lead concentration is less than the practical quantitation level for lead specified in Section 611.359(a)(1)(B)(i).
- A) Those systems whose highest source water lead level is below the method detection limit (MDL) may also be deemed to have optimized corrosion control under this subsection (b) if the 90th percentile tap water lead level is less than or equal to the PQL for lead for two consecutive six-month monitoring periods.
 - B) Any water system deemed to have optimized corrosion control in accordance with this subsection (b) must continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in Section 611.356(c) and collecting the samples at times and locations specified in Section 611.356(d)(4)(D). Any such system that has not conducted a round of monitoring pursuant to Section 611.356(d) since September 30, 1997, must have completed a round of monitoring pursuant to this subsection (b) no later than September 30, 2000.
 - C) Any water system deemed to have optimized corrosion control pursuant to this subsection (b) must notify the Agency in writing pursuant to Section 611.360(a)(3) of any upcoming long-term change in treatment or the addition of a new source, as described in that Section. The Agency must review and approve the addition of a new source or any long-term change in water treatment before the addition or long-term change is implemented by the water

~~system require any such system to conduct additional monitoring or to take other action if the Agency determines that the additional monitoring is necessary and appropriate to ensure that the supplier maintains minimal levels of corrosion in its distribution system.~~

D) ~~As of July 12, 2001,~~ a supplier is not deemed to have optimized corrosion control under this subsection (b), and must implement corrosion control treatment pursuant to subsection (b)(3)(E) of this Section, unless it meets the copper action level.

E) Any supplier triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this subsection must implement corrosion control treatment in accordance with the deadlines in subsection (e) of this Section. Any such large system supplier must adhere to the schedule specified in that subsection (e) for a medium-sized system supplier, with the time periods for completing each step being triggered by the date the supplier is no longer deemed to have optimized corrosion control under this subsection (b).

c) Suppliers not required to complete corrosion control steps for having met both action levels.

1) Any small system or medium-sized system supplier, otherwise required to complete the corrosion control steps due to its exceedence of the lead or copper action level, may cease completing the treatment steps after the supplier has fulfilled both of the following conditions:

A) It has met both the copper action level and the lead action level during each of two consecutive six-month monitoring periods conducted pursuant to Section 611.356; and

B) The supplier has submitted the results for those two consecutive six-month monitoring periods to the Agency.

2) A supplier that has ceased completing the corrosion control steps pursuant to subsection (c)(1) of this Section (or the Agency, if appropriate) must resume completion of the applicable treatment steps, beginning with the first treatment step that the supplier previously did not complete in its entirety, if the supplier thereafter exceeds the lead or copper action level during any monitoring period.

3) The Agency may, by SEP, require a supplier to repeat treatment steps

- 3816 previously completed by the supplier where it determines that this is
 3817 necessary to properly implement the treatment requirements of this
 3818 Section. Any such SEP must explain the basis for this decision.
 3819
- 3820 4) The requirement for any small- or medium-sized system supplier to
 3821 implement corrosion control treatment steps in accordance with subsection
 3822 (e) of this Section (including systems deemed to have optimized corrosion
 3823 control under subsection (b)(1) of this Section) is triggered whenever any
 3824 small- or medium-sized system supplier exceeds the lead or copper action
 3825 level.
 3826
- 3827 d) Treatment steps and deadlines for large systems. Except as provided in
 3828 subsections (b)(2) and (b)(3) of this Section, large system suppliers must complete
 3829 the following corrosion control treatment steps (described in the referenced
 3830 portions of Sections 611.352, 611.356, and 611.357) on or before the indicated
 3831 dates.
 3832
- 3833 1) Step 1: The supplier must have conducted initial monitoring (Sections
 3834 611.356(d)(1) and 611.357(b)) during two consecutive six-month
 3835 monitoring periods on or before January 1, 1993.
 3836
- 3837 2) Step 2: The supplier must have completed corrosion control studies
 3838 (Section 611.352(c)) on or before July 1, 1994.
 3839
- 3840 3) Step 3: The Agency must have approved optimal corrosion control
 3841 treatment (Section 611.352(d)) by a SEP issued pursuant to Section
 3842 611.110 on or before January 1, 1995.
 3843
- 3844 4) Step 4: The supplier must have installed optimal corrosion control
 3845 treatment (Section 611.352(e)) by January 1, 1997.
 3846
- 3847 5) Step 5: The supplier must have completed follow-up sampling (Sections
 3848 611.356(d)(2) and 611.357(c)) by January 1, 1998.
 3849
- 3850 6) Step 6: The Agency must have reviewed installation of treatment and
 3851 approve optimal water quality control parameters (Section 611.352(f)) by
 3852 July 1, 1998.
 3853
- 3854 7) Step 7: The supplier must operate in compliance with the Agency-
 3855 specified optimal water quality control parameters (Section 611.352(g))
 3856 and continue to conduct tap sampling (Sections 611.356(d)(3) and
 3857 611.357(d)).
 3858

- 3859 e) Treatment steps and deadlines for small- and medium-sized system suppliers.
 3860 Except as provided in subsection (b) of this Section, small- and medium-sized
 3861 system suppliers must complete the following corrosion control treatment steps
 3862 (described in the referenced portions of Sections 611.352, 611.356, and 611.357)
 3863 by the indicated time periods.
 3864
- 3865 1) Step 1: The supplier must conduct initial tap sampling (Sections
 3866 611.356(d)(1) and 611.357(b)) until the supplier either exceeds the lead
 3867 action level or the copper action level or it becomes eligible for reduced
 3868 monitoring under Section 611.356(d)(4). A supplier exceeding the lead
 3869 action level or the copper action level must recommend optimal corrosion
 3870 control treatment (Section 611.352(a)) within six months after the end of
 3871 the monitoring period during which it exceeds one of the action levels.
 3872
 - 3873 2) Step 2: Within 12 months after the end of the monitoring period during
 3874 which a supplier exceeds the lead action level or the copper action level,
 3875 the Agency may require the supplier to perform corrosion control studies
 3876 (Section 611.352(b)). If the Agency does not require the supplier to
 3877 perform such studies, the Agency must, by a SEP issued pursuant to
 3878 Section 611.110, specify optimal corrosion control treatment (Section
 3879 611.352(d)) within the appropriate of the following timeframes:
 3880
 - 3881 A) ~~For~~ medium-sized systems, within 18 months after the end of
 3882 the monitoring period during which such supplier exceeds the lead
 3883 action level or the copper action level; or;
 - 3884
 - 3885 B) ~~For~~ small systems, within 24 months after the end of the
 3886 monitoring period during which such supplier exceeds the lead
 3887 action level or the copper action level.
 3888
 - 3889 3) Step 3: If the Agency requires a supplier to perform corrosion control
 3890 studies under step 2 (subsection (e)(2) of this Section), the supplier must
 3891 complete the studies (Section 611.352(c)) within 18 months after the
 3892 Agency requires that such studies be conducted.
 3893
 - 3894 4) Step 4: If the supplier has performed corrosion control studies under step
 3895 2 (subsection (e)(2) of this Section), the Agency must, by a SEP issued
 3896 pursuant to Section 611.110, approve optimal corrosion control treatment
 3897 (Section 611.352(d)) within six months after completion of step 3
 3898 (subsection (e)(3) of this Section).
 3899
 - 3900 5) Step 5: The supplier must install optimal corrosion control treatment
 3901 (Section 611.352(e)) within 24 months after the Agency approves such

- 3902 treatment.
- 3903
- 3904 6) Step 6: The supplier must complete follow-up sampling (Sections
- 3905 611.356(d)(2) and 611.357(c)) within 36 months after the Agency
- 3906 approves optimal corrosion control treatment.
- 3907
- 3908 7) Step 7: The Agency must review the supplier's installation of treatment
- 3909 and, by a SEP issued pursuant to Section 611.110, approve optimal water
- 3910 quality control parameters (Section 611.352(f)) within six months after
- 3911 completion of step 6 (subsection (e)(6) of this Section).
- 3912
- 3913 8) Step 8: The supplier must operate in compliance with the Agency-
- 3914 approved optimal water quality control parameters (Section 611.352(g))
- 3915 and continue to conduct tap sampling (Sections 611.356(d)(3) and
- 3916 611.357(d)).
- 3917

3918 BOARD NOTE: Derived from 40 CFR 141.81 (2007), as amended at 72 Fed. Reg.

3919 57782 (October 10, 2007)(2003).

3920

3921 (Source: Amended at 33 Ill. Reg. _____, effective _____)

3922

3923 **Section 611.353 Source Water Treatment**

3924

3925 Suppliers must complete the applicable source water monitoring and treatment requirements

3926 (described in the referenced portions of subsection (b) of this Section, and in Sections 611.356

3927 and 611.358) by the following deadlines.

3928

- 3929 a) Deadlines for completing source water treatment steps.
- 3930
- 3931 1) Step 1: A supplier exceeding the lead action level or the copper action
- 3932 level must complete lead and copper and source water monitoring (Section
- 3933 611.358(b)) and make a treatment recommendation to the Agency
- 3934 (subsection (b)(1) of this Section) within 180 days~~six months~~ after the end
- 3935 of the monitoring period during which the supplier exceeded-exceeding
- 3936 the pertinent action level.
- 3937
- 3938 2) Step 2: The Agency must, by a SEP issued pursuant to Section 611.110,
- 3939 make a determination regarding source water treatment (subsection (b)(2)
- 3940 of this Section) within six months after submission of monitoring results
- 3941 under step 1.
- 3942
- 3943 3) Step 3: If the Agency requires installation of source water treatment, the
- 3944 supplier must install that treatment (subsection (b)(3) of this Section)

- 3945 within 24 months after completion of step 2.
3946
- 3947 4) Step 4: The supplier must complete follow-up tap water monitoring
3948 (Section 611.356(d)(2)) and source water monitoring (Section 611.358(c))
3949 within 36 months after completion of step 2.
3950
- 3951 5) Step 5: The Agency must, by a SEP issued pursuant to Section 611.110,
3952 review the supplier's installation and operation of source water treatment
3953 and specify MPCs for lead and copper (subsection (b)(4) of this Section)
3954 within six months after completion of step 4.
3955
- 3956 6) Step 6: The supplier must operate in compliance with the Agency-
3957 specified lead and copper MPCs (subsection (b)(4) of this Section) and
3958 continue source water monitoring (Section 611.358(d)).
3959
- 3960 b) Description of Source Water Treatment Requirements.
3961
- 3962 1) System treatment recommendation. Any supplier that exceeds the lead
3963 action level or the copper action level must recommend in writing to the
3964 Agency the installation and operation of one of the source water
3965 treatments listed in subsection (b)(2) of this Section. A supplier may
3966 recommend that no treatment be installed based on a demonstration that
3967 source water treatment is not necessary to minimize lead and copper levels
3968 at users' taps.
3969
- 3970 2) Agency determination regarding source water treatment.
3971
- 3972 A) The Agency must complete an evaluation of the results of all
3973 source water samples submitted by the supplier to determine
3974 whether source water treatment is necessary to minimize lead or
3975 copper levels in water delivered to users' taps.
3976
- 3977 B) If the Agency determines that treatment is needed, the Agency
3978 must, by a SEP issued pursuant to Section 611.110, either require
3979 installation and operation of the source water treatment
3980 recommended by the supplier (if any) or require the installation
3981 and operation of another source water treatment from among the
3982 following:
3983
- 3984 i) ion exchange;
3985
- 3986 ii) reverse osmosis;
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- iii) lime softening; or
 - iv) coagulation/filtration.
 - C) The Agency may request and the supplier must submit such additional information, on or before a certain date, as the Agency determines is necessary to aid in its review.
 - D) The Agency must notify the supplier in writing of its determination and set forth the basis for its decision.
 - 3) Installation of source water treatment. Each supplier must properly install and operate the source water treatment approved by the Agency under subsection (b)(2) of this Section.
 - 4) Agency review of source water treatment and specification of maximum permissible source water levels (MPCs).
 - A) The Agency must review the source water samples taken by the supplier both before and after the supplier installs source water treatment, and determine whether the supplier has properly installed and operated the approved source water treatment.
 - B) Based on its review, the Agency must, by a SEP issued pursuant to Section 611.110, approve the lead and copper MPCs for finished water entering the supplier's distribution system. Such levels must reflect the contaminant removal capability of the treatment properly operated and maintained.
 - C) The Agency must explain the basis for its decision under subsection (b)(4)(B) of this Section.
 - 5) Continued operation and maintenance. Each supplier must maintain lead and copper levels below the MPCs approved by the Agency at each sampling point monitored in accordance with Section 611.358. The supplier is out of compliance with this subsection if the level of lead or copper at any sampling point is greater than the MPC approved by the Agency pursuant to subsection (b)(4)(B) of this Section.
 - 6) Modification of Agency treatment decisions.
 - A) On its own initiative, or in response to a request by a supplier, the Agency may, by a SEP issued pursuant to Section 611.110, modify

its determination of the source water treatment under subsection (b)(2) of this Section, or the lead and copper MPCs under subsection (b)(4) of this Section.

- B) A request for modification by a supplier must be in writing, explain why the modification is appropriate, and provide supporting documentation.
- C) The Agency may, by a SEP issued pursuant to Section 611.110, modify its determination where it concludes that such change is necessary to ensure that the supplier continues to minimize lead and copper concentrations in source water.
- D) A revised determination made pursuant to subsection (b)(6)(C) of this Section must set forth the new treatment requirements, explain the basis for the Agency's decision, and provide an implementation schedule for completing the treatment modifications.
- E) Any interested person may submit information to the Agency, in writing, that bears on whether the Agency should, within its discretion, issue a SEP to modify its determination pursuant to subsection (h)(1) of this Section. An Agency determination not to act on a submission of such information by an interested person is not an Agency determination for the purposes of Sections 39 and 40 of the Act [415 ILCS 5/39 and 40].

7) Treatment decisions by USEPA. Pursuant to the procedures in 40 CFR 142.19, the USEPA Regional Administrator reserves the prerogative to review treatment determinations made by the Agency under subsections (b)(2), (b)(4), or (b)(6) of this Section and issue federal treatment determinations consistent with the requirements of 40 CFR 141.83(b)(2), (b)(4), and (b)(6), where the Administrator finds that the following is true:

- A) the Agency has failed to issue a treatment determination by the applicable deadline contained in subsection (a) of this Section;
- B) the Agency has abused its discretion in a substantial number of cases or in cases affecting a substantial population; or
- C) the technical aspects of the Agency's determination would be indefensible in an expected federal enforcement action taken against a supplier.

4074 BOARD NOTE: Derived from 40 CFR 141.83 (2007), as amended at 72 Fed. Reg.
4075 57782 (October 10, 2007)(~~2002~~).
4076

4077 (Source: Amended at 33 Ill. Reg. _____, effective _____)
4078

4079 **Section 611.354 Lead Service Line Replacement**
4080

4081 a) Suppliers required to replace lead service lines.
4082

4083 1) If the results from tap samples taken pursuant to Section 611.356(d)(2)
4084 exceed the lead action level after the supplier has installed corrosion
4085 control or source water treatment (whichever sampling occurs later), the
4086 supplier must recommence replacing lead service lines in accordance with
4087 the requirements of subsection (b) of this Section.
4088

4089 2) If a supplier is in violation of Section 611.351 or Section 611.353 for
4090 failure to install source water or corrosion control treatment, the Agency
4091 may, by a SEP issued pursuant to Section 611.110, require the supplier to
4092 commence lead service line replacement under this Section after the date
4093 by which the supplier was required to conduct monitoring under Section
4094 611.356(d)(2) has passed.
4095

4096 b) Annual replacement of lead service lines.
4097

4098 1) Initiation of a lead service line replacement program.
4099

4100 A1) A supplier that is required to commence lead service line
4101 replacement pursuant to subsection (a) of this Section must
4102 annually replace at least seven percent of the initial number of lead
4103 service lines in its distribution system.
4104

4105 B2) The initial number of lead service lines is the number of lead lines
4106 in place at the time the replacement program begins.
4107

4108 C3) The supplier must identify the initial number of lead service lines
4109 in its distribution system, including an identification of the portions
4110 of the system owned by the supplier, based on a materials
4111 evaluation, including the evaluation required under Section
4112 611.356(a) and relevant legal authorities (e.g., contracts, local
4113 ordinances) regarding the portion owned by the system.
4114

4115 D4) The first year of lead service line replacement must begin on the
4116 first day following the end of the monitoring period in which date

4117 the supplier exceeded the action level pursuant to ~~in tap sampling~~
 4118 ~~referenced in~~ subsection (a) of this Section.

4119
 4120 E) If monitoring is required annually or less frequently, the end of the
 4121 monitoring period is September 30 of the calendar year in which
 4122 the sampling occurs.

4123
 4124 F) If the Agency has established an alternate monitoring period by a
 4125 SEP issued pursuant to Section 611.110, then the end of the
 4126 monitoring period will be the last day of that period.

4127
 4128 2) Resumption of a lead service line replacement program after cessation.

4129
 4130 A) A supplier that is resuming a program after cessation of its lead
 4131 service line replacement program, as allowed pursuant to
 4132 subsection (f) of this Section, must update its inventory of lead
 4133 service lines to include those sites that it had previously
 4134 determined did not require replacement pursuant to the sampling
 4135 provision of subsection (c) of this Section.

4136
 4137 B) The supplier will then divide the updated number of remaining
 4138 lead service lines by the number of remaining years in the program
 4139 to determine the number of lines that must be replaced per year
 4140 (seven percent lead service line replacement is based on a 15-year
 4141 replacement program, so that, for example, a supplier resuming
 4142 lead service line replacement after previously conducting two years
 4143 of replacement would divide the updated inventory by 13).

4144
 4145 C) For a supplier that has completed a 15-year lead service line
 4146 replacement program, the Agency must, by a SEP issued pursuant
 4147 to Section 611.110, determine a schedule for replacing or retesting
 4148 lines that were previously tested out under the completed
 4149 replacement program, whenever the supplier has re-exceeded the
 4150 action level.

4151
 4152 c) Service lines not needing replacement. A supplier is not required to replace any
 4153 individual lead service line for which the lead concentrations in all service line
 4154 samples taken from that line pursuant to Section 611.356(b)(3) are less than or
 4155 equal to 0.015 mg/l.

4156
 4157 d) A water supplier must replace that portion of the lead service line that it owns. In
 4158 cases where the supplier does not own the entire lead service line, the supplier
 4159 must notify the owner of the line, or the owner's authorized agent, that the

4160 supplier will replace the portion of the service line that it owns and must offer to
 4161 replace the owner's portion of the line. A supplier is not required to bear the cost
 4162 of replacing the privately-owned portion of the line, nor is it required to replace
 4163 the privately-owned portion where the owner chooses not to pay the cost of
 4164 replacing the privately-owned portion of the line, or where replacing the
 4165 privately-owned portion would be precluded by State, local, or common law. A
 4166 water supplier that does not replace the entire length of the service line also must
 4167 complete the following tasks:
 4168

- 4169 1) Notice Prior to Commencement of Work.
- 4170
- 4171 A) At least 45 days prior to commencing the partial replacement of a
 4172 lead service line, the water supplier must provide notice to the
 4173 residents of all buildings served by the line explaining that they
 4174 may experience a temporary increase of lead levels in their
 4175 drinking water, along with guidance on measures consumers can
 4176 take to minimize their exposure to lead.
 4177
- 4178 B) The Agency, by issuing an appropriate SEP, may allow the water
 4179 supplier to provide notice under the previous sentence less than 45
 4180 days prior to commencing partial lead service line replacement
 4181 where it determines that such replacement is in conjunction with
 4182 emergency repairs.
 4183
- 4184 C) In addition, the water supplier must inform the residents served by
 4185 the line that the supplier will, at the supplier's expense, collect a
 4186 sample from each partially-replaced lead service line that is
 4187 representative of the water in the service line for analysis of lead
 4188 content, as prescribed by Section 611.356(b)(3), within 72 hours
 4189 after the completion of the partial replacement of the service line.
 4190 The supplier must collect the sample and report the results of the
 4191 analysis to the owner and the residents served by the line within
 4192 three business days of receiving the results.
 4193
- 4194 D) Mailed notices post-marked within three business days of receiving
 4195 the results must be considered "on time."
 4196
- 4197 2) The water supplier must provide the information required by subsection
 4198 (d)(1) of this Section to the residents of individual dwellings by mail or by
 4199 other methods approved by the Agency by a SEP issued pursuant to
 4200 Section 611.110. In instances where multi-family dwellings are served by
 4201 the service line, the water supplier must have the option to post the
 4202 information at a conspicuous location.

- 4203
4204 e) Agency determination of shorter replacement schedule.
4205
4206 1) The Agency must, by a SEP issued pursuant to Section 611.110, require a
4207 supplier to replace lead service lines on a shorter schedule than that
4208 otherwise required by this Section if it determines, taking into account the
4209 number of lead service lines in the system, that such a shorter replacement
4210 schedule is feasible.
4211
4212 2) The Agency must notify the supplier of its finding pursuant to subsection
4213 (e)(1) of this Section within six months after the supplier is triggered into
4214 lead service line replacement based on monitoring, as referenced in
4215 subsection (a) of this Section.
4216
4217 f) Cessation of service line replacement.
4218
4219 1) Any supplier may cease replacing lead service lines whenever it fulfills
4220 both of the following conditions:
4221
4222 A) First draw tap samples collected pursuant to Section 611.356(b)(2)
4223 meet the lead action level during each of two consecutive six-
4224 month monitoring periods; and
4225
4226 B) The supplier has submitted those results to the Agency.
4227
4228 2) If any of the supplier's first draw tap samples thereafter exceed the lead
4229 action level, the supplier must recommence replacing lead service lines
4230 pursuant to subsection (b)(2) of this Section.
4231
4232 g) To demonstrate compliance with subsections (a) through (d) of this Section, a
4233 supplier must report to the Agency the information specified in Section
4234 611.360(e).
4235

4236 BOARD NOTE: Derived from 40 CFR 141.84 (2007), as amended at 72 Fed. Reg.
4237 57782 (October 10, 2007)(2003).

4238
4239 (Source: Amended at 33 Ill. Reg. _____, effective _____)
4240

4241 **Section 611.355 Public Education and Supplemental Monitoring**
4242

4243 A supplier that exceeds the lead action level based on tap water samples collected in accordance
4244 with Section 611.356 must deliver the public education materials required by
4245 subsections subsections (a) and (b) of this Section in accordance with the requirements of

subsection (b)(e) of this Section. A supplier that exceeds the lead action level must sample the tap water of any customer who requests it in accordance with subsection (c) of this Section. A supplier must deliver a consumer notice of lead tap water monitoring results to persons who are served by the supplier at each site that the supplier has tested, as specified in subsection (d) of this Section.

a) Content of written public education materials.

- 1) Community water systems and non-transient non-community water systems. A CWS or NTNCWS supplier must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed in subsections (a)(1)(A) through (a)(1)(F). In addition, the supplier must include the language set forth in subsections (a)(1)(A), (a)(1)(B), and (a)(1)(F) of this Section in the materials, exactly as written, except for the text in brackets in these subsections, for which the supplier must include system-specific information. Any additional information presented by a supplier must be consistent with the information set forth in subsections (a)(1)(A) through (a)(1)(F), and the supplier must present the additional information in plain language that can be understood by the general public. The supplier must submit all written public education materials to the Agency prior to delivery, as required by subsection (a)(3) of this Section, text set forth in Appendix E of this Part in all of the printed materials it distributes through its lead public education program. A supplier may delete information pertaining to lead service lines, upon approval by the Agency by a SEP issued pursuant to Section 611.110, if no lead service lines exist anywhere in the water system service area. Public education language at paragraphs (4)(B)(5) and (4)(D)(2) of Appendix E of this Part may be modified regarding building permit record availability and consumer access to these records, if approved by the Agency by a SEP issued pursuant to Section 611.110. A supplier may also continue to utilize pre-printed materials that meet the public education language requirements in 40 CFR 141.85 (1991). Any additional information presented by a supplier must be consistent with the information in Appendix E of this Part and be in plain English that can be understood by lay persons.

~~BOARD NOTE: At corresponding 40 CFR 141.85 (a)(1) (2002), USEPA allowed the use of pre-printed copies of the public notices whose content met the requirements of the original lead and copper rule adopted on June 7, 1991 (56 Fed. Reg. 26548). Rather than reference a prior version of this Section of the Illinois rules, the Board has retained the federal reference to the prior requirements.~~

4289 A) IMPORTANT INFORMATION ABOUT LEAD IN YOUR
4290 DRINKING WATER. [INSERT NAME OF SUPPLIER] found
4291 elevated levels of lead in drinking water in some homes/buildings.
4292 Lead can cause serious health problems, especially for pregnant
4293 women and young children. Please read this information closely to
4294 see what you can do to reduce lead in your drinking water.

4295
4296 BOARD NOTE: The supplier must use the verbatim text set forth
4297 in this subsection (a)(1)(A), with the exception that the supplier
4298 must insert its name in place of the bracketed text.

4299
4300 B) Health effects of lead. Lead can cause serious health problems if
4301 too much enters your body from drinking water or other sources.
4302 It can cause damage to the brain and kidneys, and can interfere
4303 with the production of red blood cells that carry oxygen to all parts
4304 of your body. The greatest risk of lead exposure is to infants,
4305 young children, and pregnant women. Scientists have linked the
4306 effects of lead on the brain with lowered IQ in children. Adults
4307 with kidney problems and high blood pressure can be affected by
4308 low levels of lead more than healthy adults. Lead is stored in the
4309 bones, and it can be released later in life. During pregnancy, the
4310 child receives lead from the mother's bones, which may affect
4311 brain development.

4312
4313 BOARD NOTE: The supplier must use the verbatim text set forth
4314 in this subsection (a)(1)(B).

4315
4316 C) Sources of Lead.

- 4317
4318 i) Explain what lead is.
4319
4320 ii) Explain possible sources of lead in drinking water and how
4321 lead enters drinking water. Include information on home
4322 and building plumbing materials and service lines that may
4323 contain lead.
4324
4325 iii) Discuss other important sources of lead exposure in
4326 addition to drinking water (e.g., paint).
4327

4328 BOARD NOTE: The supplier must use text that provides the
4329 information described in this subsection (a)(1)(C).
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- D) Discuss the steps the consumer can take to reduce his or her exposure to lead in drinking water.
 - i) Encourage running the water to flush out the lead.
 - ii) Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.
 - iii) Explain that boiling water does not reduce lead levels.
 - iv) Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.
 - v) Suggest that parents have their child's blood tested for lead.

BOARD NOTE: The supplier must use text that provides the information described in this subsection (a)(1)(D).

- E) Explain why there are elevated levels of lead in the supplier's drinking water (if known) and what the supplier is doing to reduce the lead levels in homes and buildings in this area.

BOARD NOTE: The supplier must use text that provides the information described in this subsection (a)(1)(E).

- F) For more information, call us at [INSERT THE SUPPLIER'S NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT THE SUPPLIER'S WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit USEPA's Web site at <http://www.epa.gov/lead> or contact your health care provider.

BOARD NOTE: The supplier must use the verbatim text set forth in this subsection (a)(1)(F), with the exception that the supplier must insert its name in place of the first segment of bracketed text, and it must add the second segment of bracketed text and substitute its Web address for the internal bracketed text.

- 2) Community ~~Non-transient non-community~~-water systems. In addition to including the elements A NTNCWS ~~must either include the text specified in subsection (a)(1) of this Section, or must include the text set forth in~~

4374 Appendix F of this Part in all of the printed materials it distributes through
4375 its lead public education program. A water supplier may delete
4376 information pertaining to lead service lines upon approval by the Agency
4377 by a SEP issued pursuant to Section 611.110 if no lead service lines exist
4378 anywhere in the water system service area. Any additional information
4379 presented by a supplier must be consistent with the information below and
4380 be in plain English that can be understood by lay persons. a CWS supplier
4381 must do both of the following:
4382

4383 A) It must tell consumers how to get their water tested; and

4384
4385 B) It must discuss lead in plumbing components and the difference
4386 between low-lead and lead-free components.
4387

4388 3) Agency review and approval of written public education materials.
4389

4390 A) The supplier must submit all written public education materials to
4391 the Agency for review at least 60 days prior to its planned date for
4392 delivery of the materials to the public.
4393

4394 B) If the Agency determines that the form and content of the
4395 supplier's written public education materials is adequate, it may
4396 issue a SEP pursuant to Section 611.110 that expressly approves of
4397 the materials.
4398

4399 C) A supplier may immediately distribute its written public education
4400 materials after receipt of a SEP or a revised SEP that expressly
4401 approves those materials.
4402

4403 D) If the Agency determines that the form or content of the written
4404 public education materials submitted by the supplier does not
4405 comply with the requirements of this Section, it must issue a SEP
4406 pursuant to Section 611.110. The Agency may issue a revised SEP
4407 that expressly supercedes a SEP previously issued under this
4408 subsection (a)(1). Any SEP or revised SEP issued by the Agency
4409 must identify any deficiencies in the written public education
4410 materials with specificity sufficient to guide the supplier to correct
4411 the deficiencies in a way that would address the Agency's
4412 concerns.
4413

4414 E) The Agency must issue any SEP or revised SEP under subsection
4415 (a)(3)(D) of this Section no later than 30 days after the date on
4416 which it received a copy of the supplier's prospective written

4417 public education materials, unless the Agency and the supplier
4418 have agreed to a later date pursuant to subsection (a)(3)(F) of this
4419 Section. The Agency and the supplier may agree to a longer time
4420 within which the Agency may issue a SEP or a revised SEP, in
4421 which case the Agency must issue the SEP or revised SEP before
4422 expiration of the agreed longer time.

4423
4424 BOARD NOTE: The Board has provided that the Agency and the
4425 supplier may agree to a longer time before the Agency issues a
4426 SEP and for the Agency to issue a revised SEP that supercedes an
4427 already-issued SEP, in order to allow for negotiation of any issues
4428 and the quickest possible distribution of the materials.

4429
4430 F) If the supplier has not received a SEP from the Agency within 45
4431 days after the date on which the Agency received its written public
4432 education materials, those materials are deemed approved, and the
4433 supplier may immediately proceed to distribute them.

4434
4435 G) Once the supplier has revised its written public education materials
4436 exactly as described by the Agency in a SEP issued under
4437 subsection (a)(3)(D) of this Section, those materials are deemed
4438 approved, and the supplier may immediately proceed to distribute
4439 them.

4440
4441 BOARD NOTE: At corresponding 40 CFR 141.85(a)(1) (2007), USEPA
4442 allowed the State to require prior approval of written public information
4443 materials. Rather than require prior Agency approval, the Board has
4444 chosen to require submission to the Agency for review sufficiently in
4445 advance of distribution to allow the Agency to raise any deficiencies that it
4446 may perceive. The Board has used the mechanism of the SEP for the
4447 Agency to communicate its concerns, as this would allow the supplier to
4448 petition the Board for review of the Agency's determination pursuant to
4449 Section 611.110(c).

4450
4451 ~~b) Content of broadcast materials. A supplier must include the following~~
4452 ~~information in all public service announcements submitted under its lead public~~
4453 ~~education program to television and radio stations for broadcast:~~

4454
4455 ~~1) Why should everyone want to know the facts about lead and drinking~~
4456 ~~water? Because unhealthy amounts of lead can enter drinking water~~
4457 ~~through the plumbing in your home. That's why I urge you to do what I~~
4458 ~~did. I had my water tested for (insert "free" or the cost per sample). You~~
4459 ~~can contact the (insert the name of the city or supplier) for information on~~

- 4460 testing and on simple ways to reduce your exposure to lead in drinking
4461 water.
- 4462
- 4463 2) To have your water tested for lead, or to get more information about this
4464 public health concern, please call (insert the phone number of the city or
4465 supplier).
- 4466
- 4467 be) Delivery of a public education materials program.
- 4468
- 4469 1) The public education materials of a supplier that serves In communities
4470 where a large significant proportion of the population speaks a language
4471 other than non-English speaking consumers, public education materials
4472 must contain information be communicated in the appropriate languages
4473 regarding the importance of the notice, or it must contain a telephone
4474 number or address where a person served may contact the supplier to
4475 obtain a translated copy of the public education materials or to request
4476 assistance in the appropriate language.
- 4477
- 4478 2) A CWS supplier that exceeds the lead action level on the basis of tap
4479 water samples collected in accordance with Section 611.356 and which is
4480 not already conducting repeating public education tasks pursuant to
4481 subsection (c)(3), (c)(7), or (c)(8) of this Section must, within 60 days
4482 after the end of the monitoring period in which the exceedance occurred,
4483 do each of the following complete the public education tasks according to
4484 the following requirements:
- 4485
- 4486 A) The CWS supplier must deliver printed materials that meet the
4487 content requirements of subsection (a) of this Section to all of its
4488 bill-paying customers.
- 4489
- 4490 B) Methods of delivery for a CWS supplier.
- 4491
- 4492 i) The CWS supplier must contact customers who are most at
4493 risk by delivering education materials that meet the content
4494 requirements of subsection (a) of this Section to local
4495 public health agencies, even if the agencies are not located
4496 within the supplier's service area, along with an
4497 informational notice that encourages distribution to all of
4498 the agencies' potentially affected customers or the supplier's
4499 users. The supplier must contact the local public health
4500 agencies directly by phone or in person. The local public
4501 health agencies may provide a specific list of additional
4502 community-based organizations that serve the target

4503 populations, which may include organizations outside the
4504 service area of the supplier. If such lists are provided, the
4505 supplier must deliver education materials that meet the
4506 content requirements of subsection (a) of this Section to
4507 each of the organizations on the provided lists.

- 4509 ii) The CWS supplier must contact customers who are most at
4510 risk by delivering materials that meet the content
4511 requirements of subsection (a) of this Section to the
4512 organizations listed in subsections (b)(2)(H)(i) through
4513 (b)(2)(H)(vi) that are located within the supplier's service
4514 area, along with an informational notice that encourages
4515 distribution to all the organization's potentially affected
4516 customers or supplier's users.

4517
4518 BOARD NOTE: The Board found it necessary to move the
4519 text of 40 CFR 141.85(b)(2)(ii)(B)(1) through
4520 (b)(2)(ii)(B)(6) (2007), as added at 72 Fed. Reg. 57782
4521 (Oct. 10, 2007), to appear as subsection (b)(2)(H)(i)
4522 through subsection (b)(2)(H)(vi) of this Section, in order to
4523 comport with Illinois Administrative Code codification
4524 requirements relating to allowed indent levels in rules.

- 4525
4526 iii) The CWS supplier must make a good faith effort to locate
4527 the organizations listed in subsections (b)(2)(I)(i) through
4528 (b)(2)(I)(iii) of this Section that are located within the
4529 service area and deliver materials that meet the content
4530 requirements of subsection (a) of this Section to them,
4531 along with an informational notice that encourages
4532 distribution to all potentially affected customers or users.
4533 The good faith effort to contact at-risk customers may
4534 include requesting a specific contact list of these
4535 organizations from the local public health agencies, even if
4536 the agencies are not located within the supplier's service
4537 area.

4538
4539 BOARD NOTE: The Board found it necessary to move the
4540 text of 40 CFR 141.85(b)(2)(ii)(C)(1) through
4541 (b)(2)(ii)(C)(3) (2007), as added at 72 Fed. Reg. 57782
4542 (Oct. 10, 2007), to appear as subsection (b)(2)(I)(i) through
4543 subsection (b)(2)(I)(iii) of this Section, in order to comport
4544 with Illinois Administrative Code codification requirements
4545 relating to allowed indent levels in rules.

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- C) No less often than quarterly, the CWS supplier must provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the following statement exactly as written, except for the text in brackets for which the supplier must include system-specific information:
 - [INSERT NAME OF SUPPLIER] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF SUPPLIER] [or visit (INSERT SUPPLIER'S WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the Illinois Environmental Protection Agency, Division of Public Water Supply; specifically, the Agency may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

- D) The CWS supplier must post material meeting the content requirements of subsection (a) of this Section on the supplier's Web site if the CWS supplier serves a population greater than 100,000.

- E) The CWS supplier must submit a press release to newspaper, television, and radio stations.

- F) In addition to subsections (b)(2)(A) through (b)(2)(E) of this Section, the CWS supplier must implement at least three activities from one or more of the categories listed below. The educational content and selection of these activities must be determined in consultation with the Agency.
 - i) Public Service Announcements.
 - ii) Paid advertisements.
 - iii) Public Area Information Displays.
 - iv) E-mails to customers.
 - v) Public Meetings.

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- vi) Household Deliveries.
 - vii) Targeted Individual Customer Contact.
 - viii) Direct material distribution to all multi-family homes and institutions.
 - ix) Other methods approved by the State.
- G) For a CWS supplier that is required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the Agency has established an alternate monitoring period, by a SEP issued pursuant to Section 611.110, the last day of that period.
- H) Organizations that the CWS supplier must contact when required to do so pursuant to subsection (b)(2)(B)(ii) of this Section.
- i) Public and private schools or school boards.
 - ii) Women, Infants and Children (WIC) and Head Start programs.
 - iii) Public and private hospitals and medical clinics.
 - vi) Pediatricians.
 - v) Family planning clinics.
 - vi) Local welfare agencies.
- BOARD NOTE: This subsection (b)(2)(H) corresponds with 40 CFR 141.85(b)(2)(ii)(B)(1) through (b)(2)(ii)(B)(6) (2007), as added at 72 Fed. Reg. 57782 (Oct. 10, 2007). The Board found it necessary to move the text of those federal provisions to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.
- I) Organizations that the CWS supplier must contact when required to do so pursuant to subsection (b)(2)(B)(iii) of this Section.

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- i) Licensed childcare centers.
- ii) Public and private preschools.
- iii) Obstetricians, gynecologists and midwives.

BOARD NOTE: This subsection (b)(2)(H) corresponds with 40 CFR 141.85(b)(2)(ii)(C)(1) through (b)(2)(ii)(C)(3) (2007), as added at 72 Fed. Reg. 57782 (Oct. 10, 2007). The Board found it necessary to move the text of those federal provisions to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.

- 3) As long as a CWS supplier exceeds the action level, it must repeat the activities described in subsection (b)(2) of this Section, as described in subsections (b)(3)(A) through (b)(3)(D) of this Section.
 - A) A CWS supplier must repeat the tasks contained in subsections (b)(2)(A), (b)(2)(B) and (b)(2)(D) of this Section every 12 months.
 - B) A CWS supplier must repeat tasks contained in subsection (b)(2)(C) of this Section with each billing cycle.
 - C) A CWS supplier serving a population greater than 100,000 must post and retain material on a publicly accessible Web site pursuant to subsection (b)(2)(D) of this Section.
 - D) The CWS supplier must repeat the task in subsection (b)(2)(E) of this Section twice every 12 months on a schedule agreed upon with the Agency by a SEP issued pursuant to Section 611.110. The Agency must, on a case-by-case basis, by a SEP issued pursuant to Section 611.110, extend the time for the supplier to complete the public education tasks set forth in subsection (b)(2) of this Section beyond the 60-day limit if it determines that the extended time is needed for implementation purposes; however, the Agency must issue the SEP granting any extension prior to expiration of the 60-day deadline.
 - A) Insert notices in each customer's water utility bill or disseminate to each customer by separately mailing a notice containing the information required by subsection (a)(1) of this Section, along with the following alert in large print on the water bill itself:
"SOME HOMES IN THIS COMMUNITY HAVE ELEVATED

4675 LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN
4676 POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE
4677 READ THE ENCLOSED NOTICE FOR FURTHER
4678 INFORMATION." A CWS supplier having a billing cycle that
4679 does not include a billing within 60 days after exceeding the
4680 action level or a CWS supplier that cannot insert information in the
4681 water utility bill without making major changes to its billing
4682 system may use a separate mailing to deliver the information in
4683 subsection (a)(1) of this Section, as long as the information is
4684 delivered to each customer within 60 days after exceeding the
4685 action level. Such a water supplier must also include the "alert"
4686 language specified in this subsection (c)(2)(A);

4687
4688 B) Submit the information required by subsection (a)(1) of this
4689 Section to the editorial departments of the major daily and weekly
4690 newspapers circulated throughout the community;

4691
4692 C) Deliver pamphlets or brochures that contain the public education
4693 materials in paragraphs (2) and (4) of Appendix E of this Part to
4694 facilities and organizations, including the following:

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4696 i) Public schools or local school boards;

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4698 ii) The city or county health department;

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4700 iii) Women, Infants, and Children (WIC) and Head Start
4701 programs, whenever available;

4702
4703 iv) Public and private hospitals and clinics;

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4705 v) Pediatricians;

4706
4707 vi) Family planning clinics; and

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4709 vii) Local welfare agencies; and

4710
4711 D) Submit the public service announcement in subsection (b) of this
4712 Section to at least five of the radio and television stations with the
4713 largest audiences within the community served by the supplier.

4714
4715 3) A CWS supplier must repeat the tasks contained in subsections (c)(2)(A)
4716 through (c)(2)(D) of this Section for as long as the supplier exceeds the
4717 lead action level, at the following minimum frequency:

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- A) ~~Those of subsections (e)(2)(A) through (e)(2)(C) of this Section, every 12 months; and~~
 - B) ~~Those of subsection (e)(2)(D) of this Section, every six months.~~
- 4) Within 60 days after the end of the monitoring period in which a NTNCWS supplier ~~it~~ exceeds the lead action level (unless it already is repeating public education tasks pursuant to subsection (b)(5)(e)(5) of this Section), ~~it~~ a NTNCWS supplier must deliver the public education materials specified by subsection (a) of this Section ~~contained in Appendix E or F of this Part, as in subsections (b)(4)(A) and (b)(4)(B) of this Section, subject to the limitation set forth in subsection (b)(4)(C) of this Section~~ follows:
- A) The NTNCWS supplier must post ~~Post~~ informational posters on lead in drinking water in a public place or common area in each of the buildings served by the supplier; and
 - B) The NTNCWS supplier must ~~distribute~~ distribute informational pamphlets or brochures on lead in drinking water to each person served by the NTNCWS supplier. The Agency may, by a SEP granted pursuant to Section 611.110, allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.
 - C) For a NTNCWS supplier that is required to conduct monitoring ~~annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the Agency has established an alternate monitoring period, by a SEP issued pursuant to Section 611.110, the last day of that period.~~
- 5) A NTNCWS supplier must repeat the tasks ~~set forth~~ contained in subsection (b)(4) of this Section at least once during each calendar year in which the supplier exceeds the lead action level. ~~The Agency must, on a case-by-case basis, by a SEP issued pursuant to Section 611.110, extend the time for the supplier to complete the public education tasks set forth in subsection (b)(2) of this Section beyond the 60-day limit if it determines that the extended time is needed for implementation purposes; however, the Agency must issue the SEP granting any extension prior to expiration of the 60-day deadline.~~

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- 6) A supplier may discontinue delivery of public education materials after it has met the lead action level during the most recent six-month monitoring period conducted pursuant to Section 611.356. Such a supplier must begin public education anew in accordance with this Section if it subsequently exceeds the lead action level during any six-month monitoring period.
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- 7) A CWS supplier may apply to the Agency, in writing, to use only the text specified in subsection (a)(1) of this Section Appendix F of this Part in lieu of the text in subsections (a)(1) and (a)(2) of this Section Appendix E of this Part and to perform the tasks listed in subsections (b)(4)(e)(4) and (b)(5)(e)(5) of this Section in lieu of the tasks in subsections (b)(2)(e)(2) and (b)(3)(e)(3) of this Section if the following are true:
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- A) The supplier is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and
- 4779
4780
- B) The system provides water as part of the cost of services provided, and it does not separately charge for water consumption.
- 4781
- 8) A CWS supplier that serves 3,300 or fewer people may limit certain aspects of its public education programs as follows:
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- A) With respect to the requirements of subsection (b)(2)(F) of this Section, a supplier that serves 3,300 or fewer people must implement at least one of the activities listed in that subsection.
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- B) With respect to the requirements of subsection (b)(2)(B) of this Section, a supplier that serves 3,300 or fewer people may limit the distribution of the public education materials required under that subsection to facilities and organizations that it serves which are most likely to be visited regularly by pregnant women and children.
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- C) With respect to the requirements of subsection (b)(2)(E) of this Section, the Agency may, by a SEP issued pursuant to Section 611.110, waive this requirement for a supplier that serves 3,300 or fewer persons, as long as the supplier distributes notices to every household that it serves.
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- 8) ~~Reduced requirements for certain smaller CWS suppliers.~~
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- 4804 A) A CWS supplier serving 3,300 or fewer people may omit the task
4805 contained in subsection (c)(2)(D) of this Section. As long as it
4806 distributes notices containing the information contained in
4807 Appendix E of this Part to every household served by the system,
4808 such a supplier may further limit its public education programs as
4809 follows:
- 4810
- 4811 i) A supplier serving 500 or fewer people may forego the task
4812 contained in subsection (c)(2)(B) of this Section. Such a
4813 system may limit the distribution of the public education
4814 materials required under subsection (c)(2)(C) of this
4815 Section to facilities and organizations served by the
4816 supplier that are most likely to be visited regularly by
4817 pregnant women and children, unless it is notified by the
4818 Agency in writing that it must make a broader distribution.
4819
- 4820 ii) If approved by the Agency by a SEP issued pursuant to
4821 Section 611.110, a system serving 501 to 3,300 people may
4822 omit the task in subsection (c)(2)(B) of this Section or limit
4823 the distribution of the public education materials required
4824 under subsection (c)(2)(C) of this Section to facilities and
4825 organizations served by the system that are most likely to
4826 be visited regularly by pregnant women and children.
4827
- 4828 B) A CWS supplier serving 3,300 or fewer people that delivers public
4829 education in accordance with subsection (c)(8)(A) of this Section
4830 must repeat the required public education tasks at least once during
4831 each calendar year in which the supplier exceeds the lead action
4832 level.
4833
- 4834 cd) Supplemental monitoring and notification of results. A supplier that fails to meet
4835 the lead action level on the basis of tap samples collected in accordance with
4836 Section 611.356 must offer to sample the tap water of any customer who requests
4837 it. The supplier is not required to pay for collecting or analyzing the sample, nor
4838 is the supplier required to collect and analyze the sample itself.
4839
- 4840 d) Requirement for consumer notice of tap water monitoring results.
4841
- 4842 1) Consumer notice requirement. A supplier must provide a notice of the
4843 individual tap results from lead tap water monitoring carried out under the
4844 requirements of Section 611.356 to the persons served by the water system
4845 at the specific sampling site from which the sample was taken (e.g., the
4846 occupants of the residence where the tap was tested).

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- 2) Timing of consumer notice. The supplier must provide the consumer notice as soon as practical, but no later than 30 days after it learns of the tap monitoring results.
- 3) Content of consumer notice. The consumer notice must include the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, steps consumers can take to reduce exposure to lead in drinking water, and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from Section 611.883(c).
- 4) Delivery of consumer notice. The consumer notice must be provided to persons served at the tap that was tested, either by mail or by another method approved by the Agency, by a SEP issued pursuant to Section 611.110. For example, upon approval by the Agency, a NTNCWS supplier could post the results on a bulletin board in the facility to allow users to review the information. The supplier must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

4869 BOARD NOTE: Derived from 40 CFR 141.85 (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007)(2002).

4870 (Source: Amended at 33 Ill. Reg. _____, effective _____)

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4874 **Section 611.356 Tap Water Monitoring for Lead and Copper**

- 4875
- 4876 a) Sampling ~~Sample~~ site location.
- 4877
- 4878 1) Selecting a pool of targeted sampling sites.
- 4879
- 4880 A) By the applicable date for commencement of monitoring under
- 4881 subsection (d)(1) of this Section, each supplier must complete a
- 4882 materials evaluation of its distribution system in order to identify a
- 4883 pool of targeted sampling sites that meets the requirements of this
- 4884 Section.
- 4885
- 4886 B) The pool of targeted sampling sites must be sufficiently large to
- 4887 ensure that the supplier can collect the number of lead and copper
- 4888 tap samples required by subsection (c) of this Section.
- 4889

- 4890 C) The supplier must select the sites for collection of first draw
4891 samples from this pool of targeted sampling sites.
4892
- 4893 D) The supplier must not select as sampling sites any faucets that have
4894 point-of-use or point-of-entry treatment devices designed to
4895 remove or capable of removing inorganic contaminants.
4896
- 4897 2) Materials evaluation.
4898
- 4899 A) A supplier must use the information on lead, copper, and
4900 galvanized steel collected pursuant to 40 CFR 141.42(d) (special
4901 monitoring for corrosivity characteristics) when conducting a
4902 materials evaluation.
4903
- 4904 B) When an evaluation of the information collected pursuant to 40
4905 CFR 141.42(d) is insufficient to locate the requisite number of lead
4906 and copper sampling sites that meet the targeting criteria in
4907 subsection (a) of this Section, the supplier must review the
4908 following sources of information in order to identify a sufficient
4909 number of sampling sites:
4910
- 4911 i) All plumbing codes, permits, and records in the files of the
4912 building departments that indicate the plumbing materials
4913 that are installed within publicly- and privately-owned
4914 structures connected to the distribution system;
4915
- 4916 ii) All inspections and records of the distribution system that
4917 indicate the material composition of the service
4918 connections which connect a structure to the distribution
4919 system;
4920
- 4921 iii) All existing water quality information, which includes the
4922 results of all prior analyses of the system or individual
4923 structures connected to the system, indicating locations that
4924 may be particularly susceptible to high lead or copper
4925 concentrations; and
4926
- 4927 iv) The supplier must seek to collect such information where
4928 possible in the course of its normal operations (e.g.,
4929 checking service line materials when reading water meters
4930 or performing maintenance activities).
4931
- 4932 3) Tiers of sampling sites. Suppliers must categorize the sampling sites

4933 within their pool according to the following tiers:
4934

4935 A) CWS Tier 1 sampling sites. "CWS Tier 1 sampling sites" must
4936 include the following single-family structures:

- 4937
- 4938 i) Those that contain copper pipes with lead solder installed
- 4939 after 1982 or which contain lead pipes; or
- 4940
- 4941 ii) Those that are served by a lead service line.
- 4942

4943 BOARD NOTE: Subsection (a)(3)(A) was derived from segments
4944 of 40 CFR 141.86(a)(3) (2007)(2003). This allows the pool of
4945 CWS tier 1 sampling sites to consist exclusively of structures
4946 served by lead service lines.
4947

4948 B) CWS Tier 2 sampling sites. "CWS Tier 2 sampling sites" must
4949 include the following buildings, including multiple-family
4950 structures:

- 4951
- 4952 i) Those that contain copper pipes with lead solder installed
- 4953 after 1982 or contain lead pipes; or
- 4954
- 4955 ii) Those that are served by a lead service line.
- 4956

4957 BOARD NOTE: Subsection (a)(3)(B) was derived from segments
4958 of 40 CFR 141.86(a)(4) (2007)(2003). This allows the pool of
4959 CWS tier 2 sampling sites to consist exclusively of structures
4960 served by lead service lines.
4961

4962 C) CWS Tier 3 sampling sites. "CWS Tier 3 sampling sites" must
4963 include the following single-family structures: those that contain
4964 copper pipes with lead solder installed before 1983.

4965 BOARD NOTE: Subsection (a)(3)(C) was derived from segments
4966 of 40 CFR 141.86(a)(5) (2007)(2003).
4967

4968

4969 D) NTNCWS Tier 1 sampling sites. "NTNCWS Tier 1 sampling
4970 sites" must include the following buildings:

- 4971
- 4972 i) Those that contain copper pipes with lead solder installed
- 4973 after 1982 or which contain lead pipes; or
- 4974
- 4975 ii) Those that are served by a lead service line.

4976
4977 BOARD NOTE: Subsection (a)(3)(D) was derived from segments
4978 of 40 CFR 141.86(a)(6) ~~(2007)~~(2003). This allows the pool of
4979 NTNCWS tier 1 sampling sites to consist exclusively of buildings
4980 served by lead service lines.
4981

- 4982 E) Alternative NTNCWS sampling sites. "Alternative NTNCWS
4983 sampling sites" must include the following buildings: those that
4984 contain copper pipes with lead solder installed before 1983.
4985

4986 BOARD NOTE: Subsection (a)(3)(E) was derived from segments
4987 of 40 CFR 141.86(a)(7) ~~(2007)~~(2003).
4988

- 4989 4) Selection of sampling sites. Suppliers must select sampling sites for their
4990 sampling pool as follows:
4991

- 4992 A) CWS Suppliers. CWS suppliers must use CWS tier 1 sampling
4993 sites, except that the supplier may include CWS tier 2 or CWS tier
4994 3 sampling sites in its sampling pool as follows:
4995

- 4996 i) If multiple-family residences comprise at least 20 percent
4997 of the structures served by a supplier, the supplier may use
4998 CWS tier 2 sampling sites in its sampling pool; or
4999

5000 BOARD NOTE: Subsection (a)(4)(A)(i) was derived from
5001 a segment of 40 CFR 141.86(a)(3)(ii) ~~(2007)~~(2003).
5002

- 5003 ii) If the CWS supplier has an insufficient number of CWS tier
5004 1 sampling sites on its distribution system, the supplier may
5005 use CWS tier 2 sampling sites in its sampling pool; or
5006

5007 BOARD NOTE: Subsection (a)(4)(A)(ii) was derived from
5008 a segment of 40 CFR 141.86(a)(4) ~~(2007)~~(2003).
5009

- 5010 iii) If the CWS supplier has an insufficient number of CWS tier
5011 1 and CWS tier 2 sampling sites on its distribution system,
5012 the supplier may complete its sampling pool with CWS tier
5013 3 sampling sites.
5014

5015 BOARD NOTE: Subsection (a)(4)(A)(iii) was derived
5016 from a segment of 40 CFR 141.86(a)(5) ~~(2007)~~(2003).
5017

- 5018 iv) If the CWS supplier has an insufficient number of CWS tier

5019 1 sampling sites, CWS tier 2 sampling sites, and CWS tier
5020 3 sampling sites, the supplier must use those CWS tier 1
5021 sampling sites, CWS tier 2 sampling sites, and CWS tier 3
5022 sampling sites that it has and complete its sampling pool
5023 with representative sites throughout its distribution system
5024 for the balance of its sampling sites. For the purpose of this
5025 subsection (a)(4)(A)(iv), a representative site is a site in
5026 which the plumbing materials used at that site would be
5027 commonly found at other sites served by the water system.
5028

5029 BOARD NOTE: Subsection (a)(4)(A)(iv) was derived
5030 from segments of 40 CFR 141.86(a)(5) (2007)~~(2003)~~.
5031

5032 B) NTNCWS suppliers.
5033

- 5034 i) An NTNCWS supplier must select NTNCWS tier 1
5035 sampling sites for its sampling pool.
5036

5037 BOARD NOTE: Subsection (a)(4)(B)(i) was derived from
5038 segments of 40 CFR 141.86(a)(6) (2007)~~(2003)~~.
5039

- 5040 ii) If the NTNCWS supplier has an insufficient number of
5041 NTNCWS tier 1 sampling sites, the supplier may complete
5042 its sampling pool with alternative NTNCWS sampling
5043 sites.
5044

5045 BOARD NOTE: Subsection (a)(4)(B)(ii) was derived from
5046 segments of 40 CFR 141.86(a)(7) (2007)~~(2003)~~.
5047

- 5048 iii) If the NTNCWS supplier has an insufficient number of
5049 NTNCWS tier 1 sampling sites and NTNCWS alternative
5050 sampling sites, the supplier must use representative sites
5051 throughout its distribution system. For the purpose of this
5052 subsection (a)(4)(B)(ii), a representative site is a site in
5053 which the plumbing materials used at that site would be
5054 commonly found at other sites served by the water system.
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5056 BOARD NOTE: Subsection (a)(4)(B)(iii) was derived
5057 from segments of 40 CFR 141.86(a)(7) (2007)~~(2003)~~.
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5059 C) Suppliers with lead service lines. Any supplier whose distribution
5060 system contains lead service lines must draw samples during each
5061 six-month monitoring period from sampling sites as follows:

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- i) 50 percent of the samples from sampling sites that contain lead pipes or from sampling sites that have copper pipes with lead solder; and
 - ii) 50 percent of those samples from sites served by a lead service line.
 - iii) A supplier that cannot identify a sufficient number of sampling sites served by a lead service line must collect first-draw samples from all of the sites identified as being served by such lines.

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BOARD NOTE: Subsection (a)(4)(C) was derived from segments of 40 CFR 141.86(a)(8) (2007)(2003). This allows the pool of sampling sites to consist exclusively of structures or buildings served by lead service lines.

b) Sample collection methods.

- 1) All tap samples for lead and copper collected in accordance with this Subpart G, with the exception of lead service line samples collected under Section 611.354(c) and samples collected under subsection (b)(5) of this Section, must be first-draw samples.
- 2) First-draw tap samples.
 - A) Each first-draw tap sample for lead and copper must be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours.
 - B) First-draw samples from residential housing must be collected from the cold water kitchen tap or bathroom sink tap.
 - C) First-draw samples from a non-residential building must be one liter in volume and must be collected at an interior tap from which water is typically drawn for consumption.
 - D) Non-first-draw samples collected in lieu of first-draw samples pursuant to subsection (b)(5) of this Section must be one liter in volume and must be collected at an interior tap from which water is typically drawn for consumption.

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- E) First-draw samples may be collected by the supplier or the supplier may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this subsection (b).
 - i) To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to 14 days after the sample is collected.
 - ii) After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved USEPA method before the sample can be analyzed.
 - F) If a supplier allows residents to perform sampling under subsection (b)(2)(D) of this Section, the supplier may not challenge the accuracy of sampling results based on alleged errors in sample collection.
- 3) Service line samples.
- A) Each service line sample must be one liter in volume and have stood motionless in the lead service line for at least six hours.
 - B) Lead service line samples must be collected in one of the following three ways:
 - i) At the tap after flushing that volume of water calculated as being between the tap and the lead service line based on the interior diameter and length of the pipe between the tap and the lead service line;
 - ii) Tapping directly into the lead service line; or
 - iii) If the sampling site is a single-family structure, allowing the water to run until there is a significant change in temperature that would be indicative of water that has been standing in the lead service line.
- 4) Follow-up first-draw tap samples.
- A) A supplier must collect each follow-up first-draw tap sample from the same sampling site from which it collected the previous

5148 samples.

5149
5150 B) If, for any reason, the supplier cannot gain entry to a sampling site
5151 in order to collect a follow-up tap sample, the supplier may collect
5152 the follow-up tap sample from another sampling site in its
5153 sampling pool, as long as the new site meets the same targeting
5154 criteria and is within reasonable proximity of the original site.

5155
5156 5) Substitute non-first-draw samples.

5157
5158 A) A NTNCWS supplier or a CWS supplier that meets the criteria of
5159 Sections 611.355(b)(7)(A) and (b)(7)(B), that does not have
5160 enough taps that can supply first-draw samples, as defined in
5161 Section 611.102, may apply to the Agency in writing to substitute
5162 non-first-draw samples by a SEP granted under Section 611.110.

5163
5164 B) A supplier approved to substitute non-first-draw samples must
5165 collect as many first-draw samples from appropriate taps as
5166 possible and identify sampling times and locations that would
5167 likely result in the longest standing time for the remaining sites.

5168
5169 C) The Agency may grant a SEP that waives the requirement for prior
5170 Agency approval of non-first-draw samplingsample sites selected
5171 by the system.

5172
5173 c) Number of samples.

5174
5175 1) Suppliers must collect at least one sample from the number of sites listed
5176 in the first column of Table D of this Part (labelled "standard monitoring")
5177 during each six-month monitoring period specified in subsection (d) of
5178 this Section.

5179
5180 2) A supplier conducting reduced monitoring pursuant to subsection (d)(4) of
5181 this Section must collect one sample from the number of sites specified in
5182 the second column of Table D of this Part (labelled "reduced monitoring")
5183 during each reduced monitoring period specified in subsection (d)(4) of
5184 this Section. Such reduced monitoring sites must be representative of the
5185 sites required for standard monitoring. A supplier whose system has fewer
5186 than five drinking water taps that can be used for human consumption and
5187 which can meet the sampling site criteria of subsection (a) of this Section
5188 to reach the required number of sampling sites listed in this subsection (c)
5189 must collect multiple samples from individual taps. To accomplish this,
5190 the supplier must collect at least one sample from each tap, then it must

5191 collect additional samples from those same taps on different days during
 5192 the monitoring period, in order to collect a total number of samples that
 5193 meets the required number of sampling sites. Alternatively, the Agency
 5194 must, by a SEP issued pursuant to Section 611.110, allow a supplier
 5195 whose system has fewer than five drinking water taps to collect a number
 5196 of samples that is fewer than the number of sites specified in this
 5197 subsection (c) if it determines that 100 percent of all taps that can be used
 5198 for human consumption are sampled and that the reduced number of
 5199 samples will produce the same results as would the collection of multiple
 5200 samples from some taps. Any Agency approval of a reduction of the
 5201 minimum number of samples must be based on a request from the supplier
 5202 or on on-site verification by the Agency. The Agency may, by a SEP
 5203 issued pursuant to Section 611.110, specify sampling locations when a
 5204 system is conducting reduced monitoring.
 5205

5206 d) Timing of monitoring.

5207
 5208 1) Initial tap sampling.
 5209

5210 The first six-month monitoring period for small, medium-sized and large
 5211 system suppliers must begin on the dates specified in Table E of this Part.
 5212

5213 A) All large system suppliers must monitor during each of two
 5214 consecutive six-month periods.
 5215

5216 B) All small- and medium-sized system suppliers must monitor during
 5217 each consecutive six-month monitoring period until the following
 5218 is true:
 5219

5220 i) The supplier exceeds the lead action level or the copper
 5221 action level and is therefore required to implement the
 5222 corrosion control treatment requirements under Section
 5223 611.351, in which case the supplier must continue
 5224 monitoring in accordance with subsection (d)(2) of this
 5225 Section; or
 5226

5227 ii) The supplier meets the lead action level and the copper
 5228 action level during each of two consecutive six-month
 5229 monitoring periods, in which case the supplier may reduce
 5230 monitoring in accordance with subsection (d)(4) of this
 5231 Section.
 5232

5233 2) Monitoring after installation of corrosion control and source water

- 5234 treatment.
 5235
 5236 A) Any large system supplier that installs optimal corrosion control
 5237 treatment pursuant to Section 611.351(d)(4) must have monitored
 5238 during each of two consecutive six-month monitoring periods
 5239 before January 1, 1998.
 5240
 5241 B) Any small- or medium-sized system supplier that installs optimal
 5242 corrosion control treatment pursuant to Section 611.351(e)(5) must
 5243 monitor during each of two consecutive six-month monitoring
 5244 periods before 36 months after the Agency approves optimal
 5245 corrosion control treatment, as specified in Section 611.351(e)(6).
 5246
 5247 C) Any supplier that installs source water treatment pursuant to
 5248 Section 611.353(a)(3) must monitor during each of two
 5249 consecutive six-month monitoring periods before 36 months after
 5250 completion of step 2, as specified in Section 611.353(a)(4).
 5251
 5252 3) Monitoring after the Agency specification of water quality parameter
 5253 values for optimal corrosion control.
 5254 After the Agency specifies the values for water quality control parameters
 5255 pursuant to Section 611.352(f), the supplier must monitor during each
 5256 subsequent six-month monitoring period, with the first six-month
 5257 monitoring period to begin on the date the Agency specifies the optimal
 5258 values.
 5259
 5260 4) Reduced monitoring.
 5261
 5262 A) Reduction to annual for small- and medium-sized system suppliers
 5263 meeting the lead and copper action levels. A small- or medium-
 5264 sized system supplier that meets the lead and copper action levels
 5265 during each of two consecutive six-month monitoring periods may
 5266 reduce the number of samples in accordance with subsection (c) of
 5267 this Section, and reduce the frequency of sampling to once per
 5268 year. A small- or medium-sized system supplier that collects
 5269 fewer than five samples as specified in subsection (c) of this
 5270 Section and which meets the lead and copper action levels during
 5271 each of two consecutive six-month monitoring periods may reduce
 5272 its frequency of sampling to once per year. In no case can the
 5273 supplier reduce the number of samples required below the
 5274 minimum of one sample per available tap. This reduced sampling
 5275 may only begin during the calendar year immediately following
 5276 the end of the second consecutive six-month monitoring period.

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- B) SEP allowing reduction to annual for suppliers maintaining water quality control parameters.
 - i) Any supplier that meets the lead action level and which maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f) during each of two consecutive six-month monitoring periods may reduce the frequency of monitoring to once per year and the number of lead and copper samples to that specified by subsection (c) of this Section if it receives written approval from the Agency in the form of a SEP granted pursuant to Section 611.110. This reduced sampling may only begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.
 - ii) The Agency must review monitoring, treatment, and other relevant information submitted by the water system in accordance with Section 611.360, and must notify the system in writing by a SEP granted pursuant to Sections 611.110 when it determines the system is eligible to reduce its monitoring frequency to once every three years pursuant to this subsection (d)(4).
 - iii) The Agency must review, and where appropriate, revise its determination under subsection (d)(4)(B)(i) of this Section when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency.
- C) Reduction to triennial for small- and medium-sized system suppliers.
 - i) Small- and medium-sized system suppliers meeting lead and copper action levels. A small- or medium-sized system supplier that meets the lead action level and which meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years.

5320 ii) SEP for suppliers meeting optimal corrosion control
5321 treatment. Any supplier that maintains the range of values
5322 for the water quality control parameters reflecting optimal
5323 corrosion control treatment specified by the Agency under
5324 Section 611.352(f) during three consecutive years of
5325 monitoring may reduce its monitoring frequency from
5326 annual to once every three years if it receives written
5327 approval from the Agency in the form of a SEP granted
5328 pursuant to Section 611.110. Samples collected once every
5329 three years must be collected no later than every third
5330 calendar year.

5331
5332 iii) The Agency must review, and where appropriate, revise its
5333 determination under subsection (d)(4)(C)(ii) of this Section
5334 when the supplier submits new monitoring or treatment
5335 data, or when other data relevant to the number and
5336 frequency of tap sampling becomes available to the
5337 Agency.
5338

5339 D) Sampling at a reduced frequency. A supplier that reduces the
5340 number and frequency of sampling must collect these samples
5341 from representative sites included in the pool of targeted sampling
5342 sites identified in subsection (a) of this Section, preferentially
5343 selecting those sampling sites from the highest tier first. Suppliers
5344 sampling annually or less frequently must conduct the lead and
5345 copper tap sampling during the months of June, July, August, or
5346 September, unless the Agency has approved a different sampling
5347 period in accordance with subsection (d)(4)(D)(i) of this Section.
5348

5349 i) The Agency may grant a SEP pursuant to Section 611.110
5350 that approves a different period for conducting the lead and
5351 copper tap sampling for systems collecting a reduced
5352 number of samples. Such a period must be no longer than
5353 four consecutive months and must represent a time of
5354 normal operation where the highest levels of lead are most
5355 likely to occur. For a NTNCWS supplier that does not
5356 operate during the months of June through September and
5357 for which the period of normal operation where the highest
5358 levels of lead are most likely to occur is not known, the
5359 Agency must designate a period that represents a time of
5360 normal operation for the system. This reduced sampling
5361 may only begin during the period approved or designated
5362 by the Agency in the calendar year immediately following

the end of the second consecutive six-month monitoring period for systems initiating annual monitoring and during the three-year period following the end of the third consecutive calendar year of annual monitoring for a supplier initiating triennial monitoring.

ii) A supplier monitoring annually that has been collecting samples during the months of June through September and which receives Agency approval to alter its sample collection period under subsection (d)(4)(D)(i) of this Section must collect its next round of samples during a time period that ends no later than 21 months after the previous round of sampling. A supplier monitoring once every three years that has been collecting samples during the months of June through September and which receives Agency approval to alter the sampling collection period as provided in subsection (d)(4)(D)(i) of this Section must collect its next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling must be collected annually or once every three years, as required by this Section. A small system supplier with a waiver granted pursuant to subsection (g) of this Section that has been collecting samples during the months of June through September and which receives Agency approval to alter its sample collection period under subsection (d)(4)(D)(i) of this Section must collect its next round of samples before the end of the nine-year compliance cycle (as that term is defined in Section 611.101).

E) Any water system that demonstrates for two consecutive six-month monitoring periods that the tap water lead level computed under Section 611.350(c)(3) is less than or equal to 0.005 mg/l and that the tap water copper level computed under Section 611.350(c)(3) is less than or equal to 0.65 mg/l may reduce the number of samples in accordance with subsection (c) of this Section and reduce the frequency of sampling to once every three calendar years.

F) Resumption of standard monitoring.

i) Small- or medium-sized suppliers exceeding lead or copper action level. A small- or medium-sized system supplier subject to reduced monitoring that exceeds the lead action

5406 level or the copper action level must resume sampling in
 5407 accordance subsection (d)(3) of this Section and collect the
 5408 number of samples specified for standard monitoring under
 5409 subsection (c) of this Section. Such a supplier must also
 5410 conduct water quality parameter monitoring in accordance
 5411 with Section 611.357(b), (c), or (d) (as appropriate) during
 5412 the six-month monitoring period in which it exceeded the
 5413 action level. Any such supplier may resume annual
 5414 monitoring for lead and copper at the tap at the reduced
 5415 number of sites specified in subsection (c) of this Section
 5416 after it has completed two subsequent consecutive six-
 5417 month rounds of monitoring that meet the criteria of
 5418 subsection (d)(4)(A) of this Section. Any such supplier
 5419 may resume monitoring once every three years for lead and
 5420 copper at the reduced number of sites after it demonstrates
 5421 through subsequent rounds of monitoring that it meets the
 5422 criteria of either subsection (d)(4)(C) or (d)(4)(E) of this
 5423 Section.
 5424

- 5425 ii) Suppliers failing to operate within water quality control
 5426 parameters. Any supplier subject to reduced monitoring
 5427 frequency that fails to meet the lead action level during any
 5428 four-month monitoring period or that fails to operate within
 5429 the range of values for the water quality control parameters
 5430 specified pursuant to Section 611.352(f) for more than nine
 5431 days in any six-month period specified in Section
 5432 611.357(d) must conduct tap water sampling for lead and
 5433 copper at the frequency specified in subsection (d)(3) of
 5434 this Section, must collect the number of samples specified
 5435 for standard monitoring under subsection (c) of this
 5436 Section, and must resume monitoring for water quality
 5437 parameters within the distribution system in accordance
 5438 with Section 611.357(d). This standard tap water sampling
 5439 must begin no later than the six-month period beginning
 5440 January 1 of the calendar year following the lead action
 5441 level exceedance or water quality parameter excursion. A
 5442 supplier may resume reduced monitoring for lead and
 5443 copper at the tap and for water quality parameters within
 5444 the distribution system only if it fulfills the conditions set
 5445 forth in subsection (d)(4)(H) of this Section.
 5446

5447 BOARD NOTE: The Board moved the material from the last
 5448 sentence of 40 CFR 141.86(d)(4)(vi)(B) and 40 CFR

5449 141.86(d)(4)(vi)(B)(1) through (d)(4)(vi)(B)(3) (2007) to
5450 subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii), since
5451 Illinois Administrative Code codification requirements allow
5452 subsections only to four indent levels.
5453

5454 G) Any water supplier subject to a reduced monitoring frequency
5455 under subsection (d)(4) of this Section ~~that either adds a new~~
5456 ~~source of water or changes any water treatment~~ must notify inform
5457 the Agency in writing in accordance with Section 611.360(a)(3) of
5458 any upcoming long-term change in treatment or addition of a new
5459 source as described in that Section. The Agency must review and
5460 approve the addition of a new source or long-term change in water
5461 treatment before it is implemented by the supplier. The Agency
5462 may, by a SEP granted pursuant to Section 611.110, require the
5463 system to resume sampling in accordance with subsection (d)(3) of
5464 this Section and collect the number of samples specified for
5465 standard monitoring under subsection (c) of this Section or take
5466 other appropriate steps such as increased water quality parameter
5467 monitoring or re-evaluation of its corrosion control treatment given
5468 the potentially different water quality considerations.
5469

5470 H) A supplier required under subsection (d)(4)(F) of this Section to
5471 resume monitoring in accordance with Section 611.357(d) may
5472 resume reduced monitoring for lead and copper at the tap and for
5473 water quality parameters within the distribution system under the
5474 following conditions:
5475

5476 i) The supplier may resume annual monitoring for lead and
5477 copper at the tap at the reduced number of sites specified in
5478 subsection (c) of this Section after it has completed two
5479 subsequent six-month rounds of monitoring that meet the
5480 criteria of subsection (d)(4)(B) of this Section and the
5481 supplier has received written approval from the Agency by
5482 a SEP pursuant to Section 611.110 that it is appropriate to
5483 resume reduced monitoring on an annual frequency. This
5484 sampling must begin during the calendar year immediately
5485 following the end of the second consecutive six-month
5486 monitoring period.
5487

5488 ii) The supplier may resume monitoring for lead and copper
5489 once every three years at the tap at the reduced number of
5490 sites after it demonstrates through subsequent rounds of
5491 monitoring that it meets the criteria of either subsection

(d)(4)(C) or (d)(4)(E) of this Section and the system has received a SEP under Section 611.110 from the Agency that it is appropriate to resume monitoring once every three years.

- iii) The supplier may reduce the number of water quality parameter tap water samples required in accordance with Section 611.357(e)(1) and the frequency with which it collects such samples in accordance with Section 611.357(e)(2). Such a system may not resume monitoring once every three years for water quality parameters at the tap until it demonstrates, in accordance with the requirements of Section 611.357(e)(2), that it has re-qualified for monitoring once every three years.

BOARD NOTE: Subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii) are derived from the last sentence of 40 CFR 141.86(d)(4)(vi)(B) and 40 CFR 141.86 (d)(4)(vi)(B)(I) through (d)(4)(vi)(B)(3) (2007)(2003), since Illinois Administrative Code codification requirements allow only four indent levels of subsections.

- e) Additional monitoring. The results of any monitoring conducted in addition to the minimum requirements of this Section must be considered by the supplier and the Agency in making any determinations (i.e., calculating the 90th percentile lead action level or the copper level) under this Subpart G.
- f) Invalidation of lead or copper tap water samples. A sample invalidated under this subsection does not count toward determining lead or copper 90th percentile levels under Section 611.350(c)(3) or toward meeting the minimum monitoring requirements of subsection (c) of this Section.
 - 1) The Agency must invalidate a lead or copper tap water sample if it determines that one of the following conditions exists:
 - A) The laboratory establishes that improper sample analysis caused erroneous results;
 - B) The sample was taken from a site that did not meet the site selection criteria of this Section;
 - C) The sample container was damaged in transit; or

- 5535 D) There is substantial reason to believe that the sample was subject
5536 to tampering.
5537
- 5538 2) The supplier must report the results of all samples to the Agency and all
5539 supporting documentation for samples the supplier believes should be
5540 invalidated.
5541
- 5542 3) To invalidate a sample under subsection (f)(1) of this Section, the decision
5543 and the rationale for the decision must be documented in writing. The
5544 Agency may not invalidate a sample solely on the grounds that a follow-
5545 up sample result is higher or lower than that of the original sample.
5546
- 5547 4) The water supplier must collect replacement samples for any samples
5548 invalidated under this Section if, after the invalidation of one or more
5549 samples, the supplier has too few samples to meet the minimum
5550 requirements of subsection (c) of this Section. Any such replacement
5551 samples must be taken as soon as possible, but no later than 20 days after
5552 the date the Agency invalidates the sample or by the end of the applicable
5553 monitoring period, whichever occurs later. Replacement samples taken
5554 after the end of the applicable monitoring period must not also be used to
5555 meet the monitoring requirements of a subsequent monitoring period. The
5556 replacement samples must be taken at the same locations as the
5557 invalidated samples or, if that is not possible, at locations other than those
5558 already used for sampling during the monitoring period.
5559
- 5560 g) Monitoring waivers for small system suppliers. Any small system supplier that
5561 meets the criteria of this subsection (g) may apply to the Agency to reduce the
5562 frequency of monitoring for lead and copper under this Section to once every nine
5563 years (i.e., a "full waiver") if it meets all of the materials criteria specified in
5564 subsection (g)(1) of this Section and all of the monitoring criteria specified in
5565 subsection (g)(2) of this Section. Any small system supplier that meets the
5566 criteria in subsections (g)(1) and (g)(2) of this Section only for lead, or only for
5567 copper, may apply to the State for a waiver to reduce the frequency of tap water
5568 monitoring to once every nine years for that contaminant only (i.e., a "partial
5569 waiver").
5570
- 5571 1) Materials criteria. The supplier must demonstrate that its distribution
5572 system and service lines and all drinking water supply plumbing,
5573 including plumbing conveying drinking water within all residences and
5574 buildings connected to the system, are free of lead-containing materials or
5575 copper-containing materials, as those terms are defined in this subsection
5576 (g)(1), as follows:
5577

- 5578 A) Lead. To qualify for a full waiver, or a waiver of the tap water
5579 monitoring requirements for lead (i.e., a "lead waiver"), the water
5580 supplier must provide certification and supporting documentation
5581 to the Agency that the system is free of all lead-containing
5582 materials, as follows:
5583
- 5584 i) It contains no plastic pipes that contain lead plasticizers, or
5585 plastic service lines that contain lead plasticizers; and
5586
 - 5587 ii) It is free of lead service lines, lead pipes, lead soldered pipe
5588 joints, and leaded brass or bronze alloy fittings and fixtures,
5589 unless such fittings and fixtures meet the specifications of
5590 NSF Standard 61, section 9, incorporated by reference in
5591 Section 611.102.
5592
- 5593 BOARD NOTE: Corresponding 40 CFR
5594 141.86(g)(1)(i)(B) specifies "any standard established
5595 pursuant to 42 USC 300g-6(e) (SDWA section 1417(e))."
5596 USEPA has stated that the NSF standard is that standard.
5597 See 62 Fed. Reg. 44684 (Aug. 22, 1997).
5598
- 5599 B) Copper. To qualify for a full waiver, or a waiver of the tap water
5600 monitoring requirements for copper (i.e., a "copper waiver"), the
5601 water supplier must provide certification and supporting
5602 documentation to the Agency that the system contains no copper
5603 pipes or copper service lines.
5604
- 5605 2) Monitoring criteria for waiver issuance. The supplier must have completed
5606 at least one six-month round of standard tap water monitoring for lead and
5607 copper at sites approved by the Agency and from the number of sites
5608 required by subsection (c) of this Section and demonstrate that the 90th
5609 percentile levels for any and all rounds of monitoring conducted since the
5610 system became free of all lead-containing or copper-containing materials,
5611 as appropriate, meet the following criteria:
5612
- 5613 A) Lead levels. To qualify for a full waiver, or a lead waiver, the
5614 supplier must demonstrate that the 90th percentile lead level does
5615 not exceed 0.005 mg/ℓ.
5616
 - 5617 B) Copper levels. To qualify for a full waiver, or a copper waiver, the
5618 supplier must demonstrate that the 90th percentile copper level does
5619 not exceed 0.65 mg/ℓ.
5620

- 5621 3) State approval of waiver application. The Agency must notify the supplier
 5622 of its waiver determination by a SEP issued pursuant to Section 611.110,
 5623 in writing, setting forth the basis of its decision and any condition of the
 5624 waiver. As a condition of the waiver, the Agency may require the supplier
 5625 to perform specific activities (e.g., limited monitoring, periodic outreach
 5626 to customers to remind them to avoid installation of materials that might
 5627 void the waiver) to avoid the risk of lead or copper concentration of
 5628 concern in tap water. The small system supplier must continue monitoring
 5629 for lead and copper at the tap as required by subsections (d)(1) through
 5630 (d)(4) of this Section, as appropriate, until it receives written notification
 5631 from the Agency that the waiver has been approved.
 5632
- 5633 4) Monitoring frequency for suppliers with waivers.
 5634
- 5635 A) A supplier with a full waiver must conduct tap water monitoring
 5636 for lead and copper in accordance with subsection (d)(4)(D) of this
 5637 Section at the reduced number of sampling sites identified in
 5638 subsection (c) of this Section at least once every nine years and
 5639 provide the materials certification specified in subsection (g)(1) of
 5640 this Section for both lead and copper to the Agency along with the
 5641 monitoring results. Samples collected every nine years must be
 5642 collected no later than every ninth calendar year.
 5643
- 5644 B) A supplier with a partial waiver must conduct tap water monitoring
 5645 for the waived contaminant in accordance with subsection
 5646 (d)(4)(D) of this Section at the reduced number of sampling sites
 5647 specified in subsection (c) of this Section at least once every nine
 5648 years and provide the materials certification specified in subsection
 5649 (g)(1) of this Section pertaining to the waived contaminant along
 5650 with the monitoring results. Such a supplier also must continue to
 5651 monitor for the non-waived contaminant in accordance with
 5652 requirements of subsections (d)(1) through (d)(4) of this Section,
 5653 as appropriate.
 5654
- 5655 C) AnyIf a supplier with a full or partial waiver adds a new source of
 5656 water or changes any water treatment, the supplier must notify the
 5657 Agency in writing in accordance with Section 611.360(a)(3) of any
 5658 upcoming long-term change in treatment or addition of a new
 5659 source, as described in that Section. The Agency must review and
 5660 approve the addition of a new source or long-term change in water
 5661 treatment before it is implemented by the supplier. The Agency
 5662 has the authority to require the supplier to add or modify waiver
 5663 conditions (e.g., require recertification that the supplier's system is

- 5664 free of lead-containing or copper-containing materials, require
 5665 additional rounds of monitoring), if it deems such modifications
 5666 are necessary to address treatment or source water changes at the
 5667 system.
 5668
- 5669 D) If a supplier with a full or partial waiver becomes aware that it is
 5670 no longer free of lead-containing or copper-containing materials,
 5671 as appropriate (e.g., as a result of new construction or repairs), the
 5672 supplier must notify the Agency in writing no later than 60 days
 5673 after becoming aware of such a change.
 5674
- 5675 5) Continued eligibility. If the supplier continues to satisfy the requirements
 5676 of subsection (g)(4) of this Section, the waiver will be renewed
 5677 automatically, unless any of the conditions listed in subsection (g)(5)(A)
 5678 through (g)(5)(C) of this Section occur. A supplier whose waiver has been
 5679 revoked may re-apply for a waiver at such time as it again meets the
 5680 appropriate materials and monitoring criteria of subsections (g)(1) and
 5681 (g)(2) of this Section.
 5682
- 5683 A) A supplier with a full waiver or a lead waiver no longer satisfies
 5684 the materials criteria of subsection (g)(1)(A) of this Section or has
 5685 a 90th percentile lead level greater than 0.005 mg/ℓ.
 5686
- 5687 B) A supplier with a full waiver or a copper waiver no longer satisfies
 5688 the materials criteria of subsection (g)(1)(B) of this Section or has
 5689 a 90th percentile copper level greater than 0.65 mg/ℓ.
 5690
- 5691 C) The State notifies the supplier, in writing, that the waiver has been
 5692 revoked, setting forth the basis of its decision.
 5693
- 5694 6) Requirements following waiver revocation. A supplier whose full or
 5695 partial waiver has been revoked by the Agency is subject to the corrosion
 5696 control treatment and lead and copper tap water monitoring requirements,
 5697 as follows:
 5698
- 5699 A) If the supplier exceeds the lead or copper action level, the supplier
 5700 must implement corrosion control treatment in accordance with the
 5701 deadlines specified in Section 611.351(e), and any other applicable
 5702 requirements of this Subpart G.
 5703
- 5704 B) If the supplier meets both the lead and the copper action level, the
 5705 supplier must monitor for lead and copper at the tap no less
 5706 frequently than once every three years using the reduced number of

5707 sample sites specified in subsection (c) of this Section.
5708

5709 7) Pre-existing waivers. Small system supplier waivers approved by the
5710 Agency in writing prior to April 11, 2000 must remain in effect under the
5711 following conditions:

5712 A) If the supplier has demonstrated that it is both free of lead-
5713 containing and copper-containing materials, as required by
5714 subsection (g)(1) of this Section and that its 90th percentile lead
5715 levels and 90th percentile copper levels meet the criteria of
5716 subsection (g)(2) of this Section, the waiver remains in effect so
5717 long as the supplier continues to meet the waiver eligibility criteria
5718 of subsection (g)(5) of this Section. The first round of tap water
5719 monitoring conducted pursuant to subsection (g)(4) of this Section
5720 must be completed no later than nine years after the last time the
5721 supplier monitored for lead and copper at the tap.
5722

5723 B) If the supplier has met the materials criteria of subsection (g)(1) of
5724 this Section but has not met the monitoring criteria of subsection
5725 (g)(2) of this Section, the supplier must conduct a round of
5726 monitoring for lead and copper at the tap demonstrating that it met
5727 the criteria of subsection (g)(2) of this Section no later than
5728 September 30, 2000. Thereafter, the waiver must remain in effect
5729 as long as the supplier meets the continued eligibility criteria of
5730 subsection (g)(5) of this Section. The first round of tap water
5731 monitoring conducted pursuant to subsection (g)(4) of this Section
5732 must be completed no later than nine years after the round of
5733 monitoring conducted pursuant to subsection (g)(2) of this Section.
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5736 BOARD NOTE: Derived from 40 CFR 141.86 (2007), as amended at 72 Fed. Reg.
5737 57782 (October 10, 2007)(2003).
5738

5739 (Source: Amended at 33 Ill. Reg. _____, effective _____)
5740

5741 **Section 611.357 Monitoring for Water Quality Parameters**
5742

5743 All large system suppliers, and all small- and medium-sized system suppliers that exceed the
5744 lead action level or the copper action level, must monitor water quality parameters in addition to
5745 lead and copper in accordance with this Section. The requirements of this Section are
5746 summarized in Table G of this Part.
5747

5748 a) General Requirements.
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- 1) Sample collection methods.
 - A) Use of tap samples. The totality of all tap samples collected by a supplier must be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the supplier, and seasonal variability. Although a supplier may conveniently conduct tap sampling for water quality parameters at sites used for coliform sampling performed pursuant to Subpart L of this Part, it is not required to do so, and a supplier is not required to perform tap sampling pursuant to this Section at taps targeted for lead and copper sampling under Section 611.356(a).
 - B) Use of entry point samples. Each supplier must collect samples at entry points to the distribution system from locations representative of each source after treatment. If a supplier draws water from more than one source and the sources are combined before distribution, the supplier must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).
- 2) Number of samples.
 - A) Tap samples. Each supplier must collect two tap samples for applicable water quality parameters during each six-month monitoring period specified under subsections (b) through (e) of this Section from the number of sites indicated in the first column of Table E of this Part.
 - B) Entry point samples.
 - i) Initial monitoring. Except as provided in subsection (c)(3) of this Section, each supplier must collect two samples for each applicable water quality parameter at each entry point to the distribution system during each six-month monitoring period specified in subsection (b) of this Section.
 - ii) Subsequent monitoring. Each supplier must collect one sample for each applicable water quality parameter at each entry point to the distribution system during each six-month

monitoring period specified in subsections (c) through (e) of this Section.

b) Initial Sampling.

- 1) Large systems. Each large system supplier must measure the applicable water quality parameters specified in subsection (b)(3) of this Section at taps and at each entry point to the distribution system during each six-month monitoring period specified in Section 611.356(d)(1).
- 2) Small- and medium-sized systems. Each small- and medium-sized system supplier must measure the applicable water quality parameters specified in subsection (b)(3) of this Section at the locations specified in this subsection during each six-month monitoring period specified in Section 611.356(d)(1) during which the supplier exceeds the lead action level or the copper action level.
- 3) Water quality parameters.
 - A) pH;
 - B) Alkalinity;
 - C) Orthophosphate, when an inhibitor containing a phosphate compound is used;
 - D) Silica, when an inhibitor containing a silicate compound is used;
 - E) Calcium;
 - F) Conductivity; and
 - G) Water temperature.

c) Monitoring after installation of corrosion control.

- 1) Large systems. Each large system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(d)(4) must measure the water quality parameters at the locations and frequencies specified in subsections (c)(4) and (c)(5) of this Section during each six-month monitoring period specified in Section 611.356(d)(2)(A).
- 2) Small- and medium-sized systems. Each small- or medium-sized system

5836 that installs optimal corrosion control treatment pursuant to Section
 5837 611.351(e)(5) must measure the water quality parameters at the locations
 5838 and frequencies specified in subsections (c)(4) and (c)(5) of this Section
 5839 during each six-month monitoring period specified in Section
 5840 611.356(d)(2)(B) in which the supplier exceeds the lead action level or the
 5841 copper action level.
 5842

5843 3) Any groundwater system can limit entry point sampling described in
 5844 subsection (c)(2) of this Section to those entry points that are
 5845 representative of water quality and treatment conditions throughout the
 5846 system. If water from untreated groundwater sources mixes with water
 5847 from treated groundwater sources, the system must monitor for water
 5848 quality parameters both at representative entry points receiving treatment
 5849 and representative entry points receiving no treatment. Prior to the start of
 5850 any monitoring under this subsection, the system must provide to the
 5851 Agency written information identifying the selected entry points and
 5852 documentation, including information on seasonal variability, sufficient to
 5853 demonstrate that the sites are representative of water quality and treatment
 5854 conditions throughout the system.
 5855

5856 4) Tap water samples, two samples at each tap for each of the following
 5857 water quality parameters:

- 5858 A) pH;
- 5859 B) Alkalinity;
- 5860 C) Orthophosphate, when an inhibitor containing a phosphate
- 5861 compound is used;
- 5862 D) Silica, when an inhibitor containing a silicate compound is used;
- 5863 and
- 5864 E) Calcium, when calcium carbonate stabilization is used as part of
- 5865 corrosion control.

5866 5) Entry point samples, except as provided in subsection (c)(3) of this
 5867 Section, one sample at each entry point to the distribution system every
 5868 two weeks (bi-weekly) for each of the following water quality parameters:

- 5869 A) pH;
- 5870 B) When alkalinity is adjusted as part of optimal corrosion control, a

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5879 reading of the dosage rate of the chemical used to adjust alkalinity,
 5880 and the alkalinity concentration; and

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 5882 C) When a corrosion inhibitor is used as part of optimal corrosion
 5883 control, a reading of the dosage rate of the inhibitor used, and the
 5884 concentration of orthophosphate or silica (whichever is applicable).
 5885

5886 d) Monitoring after the Agency specifies water quality parameter values for optimal
 5887 corrosion control.
 5888

5889 1) Large system suppliers. After the Agency has specified the values for
 5890 applicable water quality control parameters reflecting optimal corrosion
 5891 control treatment pursuant to Section 611.352(f), each large system
 5892 supplier must measure the applicable water quality parameters in
 5893 accordance with subsection (c) of this Section and determine compliance
 5894 with the requirements of Section 611.352(g) every six months with the
 5895 first six-month period to begin on either January 1 or July 1, whichever
 5896 comes first, after the date the AgencyState specifies the optimal values
 5897 under Section 611.352(f).
 5898

5899 2) Small- and medium-sized system suppliers. Each small- or medium-sized
 5900 system supplier must conduct such monitoring during each six-month
 5901 monitoring period specified in this subsection (d) in which the supplier
 5902 exceeds the lead action level or the copper action level. For any such
 5903 small and medium-size system that is subject to a reduced monitoring
 5904 frequency pursuant to Section 611.356(d)(4) at the time of the action level
 5905 exceedence, the ~~startend~~ of the applicable six-month monitoring period
 5906 under this subsection (d) must coincide with the ~~startend~~ of the applicable
 5907 monitoring period under Section 611.356(d)(4).
 5908

5909 3) Compliance with Agency-designated optimal water quality parameter
 5910 values must be determined as specified under Section 611.352(g).
 5911

5912 e) Reduced monitoring.
 5913

5914 1) Reduction in tap monitoring. A supplier that has maintained the range of
 5915 values for the water quality parameters reflecting optimal corrosion
 5916 control treatment during each of two consecutive six-month monitoring
 5917 periods under subsection (d) of this Section must continue monitoring at
 5918 the entry points to the distribution system as specified in subsection (c)(4)
 5919 of this Section. Such a supplier may collect two samples from each tap for
 5920 applicable water quality parameters from the reduced number of sites
 5921 indicated in the second column of Table E of this Part during each

- 5922 subsequent six-month monitoring period.
 5923
 5924 2) Reduction in monitoring frequency.
 5925
 5926 A) Staged reductions in monitoring frequency.
 5927
 5928 i) Annual monitoring. A supplier that maintains the range of
 5929 values for the water quality parameters reflecting optimal
 5930 corrosion control treatment specified pursuant to Section
 5931 611.352(f) during three consecutive years of monitoring
 5932 may reduce the frequency with which it collects the number
 5933 of tap samples for applicable water quality parameters
 5934 specified in subsection (e)(1) of this Section from every six
 5935 months to annually. This reduced sampling may only begin
 5936 during the calendar year immediately following the end of
 5937 the monitoring period in which the third consecutive year
 5938 of six-month monitoring occurs.
 5939
 5940 ii) Triennial monitoring. A supplier that maintains the range
 5941 of values for the water quality parameters reflecting
 5942 optimal corrosion control treatment specified pursuant to
 5943 Section 611.352(f) during three consecutive years of annual
 5944 monitoring under subsection (e)(2)(A)(i) of this Section
 5945 may reduce the frequency with which it collects the number
 5946 of tap samples for applicable water quality parameters
 5947 specified in subsection (e)(1) of this Section from annually
 5948 to once every three years. This reduced sampling may only
 5949 begin no later than the third calendar year following the end
 5950 of the monitoring period in which the third consecutive
 5951 year of monitoring occurs.
 5952
 5953 B) A water supplier may reduce the frequency with which it collects
 5954 tap samples for applicable water quality parameters specified in
 5955 subsection (e)(1) of this Section to every three years if it
 5956 demonstrates that it has fulfilled the conditions set forth in
 5957 subsections (e)(2)(B)(i) through (e)(2)(B)(iii) of this Section
 5958 the following during two consecutive monitoring periods, subject to
 5959 the limitation of subsection (e)(2)(B)(iv) of this Section.
 5960
 5961 i) The supplier must demonstrate thatThat its tap water lead
 5962 level at the 90th percentile is less than or equal to the PQL
 5963 for lead specified in Section 611.359(a)(1)(B);
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- ii) The supplier must demonstrate thatThat its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/l for copper in Section 611.350(c)(2); and
- iii) The supplier must demonstrate thatThat it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f); and.
- iv) Monitoring conducted every three years must be done no later than every third calendar year.

3) A supplier that conducts sampling annually or every three years must collect these samples evenly throughout the calendar year so as to reflect seasonal variability.

4) Any supplier subject to a reduced monitoring frequency pursuant to this subsection that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified pursuant to Section 611.352(f) for more than nine days in any six-month period specified in Section 611.352(g) must resume tap water sampling in accordance with the number and frequency requirements of subsection (d) of this Section. Such a system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in subsection (e)(1) of this Section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that subsection or may resume monitoring once every three years for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (e)(2)(A) or (e)(2)(B) of this Section.

f) Additional monitoring by suppliers. The results of any monitoring conducted in addition to the minimum requirements of this Section must be considered by the supplier and the Agency in making any determinations (i.e., determining concentrations of water quality parameters) under this Section or Section 611.352.

BOARD NOTE: Derived from 40 CFR 141.87 (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007)(2002).

(Source: Amended at 33 Ill. Reg. _____, effective _____)

Section 611.358 Monitoring for Lead and Copper in Source Water

- 6008 a) Sample location, collection methods, and number of samples.
6009
6010 1) A supplier that fails to meet the lead action level or the copper action level
6011 on the basis of tap samples collected in accordance with Section 611.356
6012 must collect lead and copper source water samples in accordance with the
6013 following requirements regarding sample location, number of samples,
6014 and collection methods:
6015
6016 A) A groundwater supplier must take a minimum of one sample at
6017 every entry point to the distribution system that is representative of
6018 each well after treatment (hereafter called a sampling point). The
6019 supplier must take one sample at the same sampling point unless
6020 conditions make another sampling point more representative of
6021 each source or treatment plant.
6022
6023 B) A surface water supplier must take a minimum of one sample at
6024 every entry point to the distribution system after any application of
6025 treatment or in the distribution system at a point that is
6026 representative of each source after treatment (hereafter called a
6027 sampling point). The system must take each sample at the same
6028 sampling point unless conditions make another sampling point
6029 more representative of each source or treatment plant.
6030
6031 BOARD NOTE: For the purposes of this subsection (a)(1)(B),
6032 surface water systems include systems with a combination of
6033 surface and ground sources.
6034
6035 C) If a supplier draws water from more than one source and the
6036 sources are combined before distribution, the supplier must sample
6037 at an entry point to the distribution system during periods of
6038 normal operating conditions (i.e., when water is representative of
6039 all sources being used).
6040
6041 D) The Agency may, by a SEP issued pursuant to Section 611.110,
6042 reduce the total number of samples that must be analyzed by
6043 allowing the use of compositing. Compositing of samples must be
6044 done by certified laboratory personnel. Composite samples from a
6045 maximum of five samples are allowed, provided that if the lead
6046 concentration in the composite sample is greater than or equal to
6047 0.001 mg/ℓ or the copper concentration is greater than or equal to
6048 0.160 mg/ℓ, then the supplier must do either of the following:
6049
6050 i) The supplier must take and analyze a follow-up sample

6051 within 14 days at each sampling point included in the
6052 composite; or

- 6053
6054 ii) If duplicates of or sufficient quantities from the original
6055 samples from each sampling point used in the composite
6056 are available, the supplier may use these instead of
6057 resampling.
6058

6059 2) SEP requiring an additional sample.
6060

6061 A) When the Agency determines that the results of sampling indicate
6062 an exceedence of the lead or copper MPC established under
6063 Section 611.353(b)(4), it must, by a SEP issued pursuant to Section
6064 611.110, require the supplier to collect one additional sample as
6065 soon as possible after the initial sample at the same sampling point,
6066 but no later than two weeks after the supplier took the initial
6067 sample.
6068

6069 B) If a supplier takes an Agency-required confirmation sample for
6070 lead or copper, the supplier must average the results obtained from
6071 the initial sample with the results obtained from the confirmation
6072 sample in determining compliance with the Agency-specified lead
6073 and copper MPCs.
6074

6075 i) Any analytical result below the MDL must be considered
6076 as zero for the purposes of averaging.
6077

6078 ii) Any value above the MDL but below the PQL must either
6079 be considered as the measured value or be considered one-
6080 half the PQL.
6081

6082 b) Monitoring frequency after system exceeds tap water action level. A supplier that
6083 exceeds the lead action level or the copper action level in tap sampling must
6084 collect one source water sample from each entry point to the distribution system
6085 no later than within six months after the end of the monitoring period during
6086 which the lead or copper action level was exceeded. For monitoring periods that
6087 are annual or less frequent, the end of the monitoring period is September 30 of
6088 the calendar year in which the sampling occurs, or if the Agency has established
6089 an alternate monitoring period by a SEP issued pursuant to Section 611.110, the
6090 last day of that period.~~exceedence.~~
6091

6092 c) Monitoring frequency after installation of source water treatment. A supplier that
6093 installs source water treatment pursuant to Section 611.353(a)(3) must collect an

- 6094 additional source water sample from each entry point to the distribution system
 6095 during each of two consecutive six-month monitoring periods on or before 36
 6096 months after completion of step 2, as specified in Section 611.353(a)(4).
 6097
- 6098 d) Monitoring frequency after the Agency has specified the lead and copper MPCs
 6099 or has determined that source water treatment is not needed.
 6100
- 6101 1) A supplier must monitor at the frequency specified by subsection
 6102 (d)(1)(A) or (d)(1)(B) of this Section where the Agency has specified the
 6103 MPCs pursuant to Section 611.353(b)(4) or has determined that the
 6104 supplier is not required to install source water treatment pursuant to
 6105 Section 611.353(b)(2).
 6106
- 6107 A) GWS suppliers.
 6108
- 6109 i) A GWS supplier required to sample by subsection (d)(1) of
 6110 this Section must collect samples once during the three-
 6111 year compliance period (as that term is defined in Section
 6112 611.101) during which the Agency makes its determination
 6113 pursuant to Section 611.353(b)(4) or 611.353(b)(2).
 6114
- 6115 ii) A GWS supplier required to sample by subsection (d)(1) of
 6116 this Section must collect samples once during each
 6117 subsequent compliance period.
 6118
- 6119 iii) Triennial samples must be collected every third calendar
 6120 year.
 6121
- 6122 B) A SWS or mixed system supplier must collect samples once during
 6123 each calendar year annually, the first annual monitoring period to
 6124 begin during the year in ~~on the date on~~ which the Agency makes its
 6125 determination pursuant to Section 611.353(b)(4) or 611.353(b)(2).
 6126
- 6127 2) A supplier is not required to conduct source water sampling for lead or
 6128 copper if the supplier meets the action level for the specific contaminant in
 6129 all tap water samples collected during the entire source water sampling
 6130 period applicable under subsection (d)(1)(A) or (d)(1)(B) of this Section.
 6131
- 6132 e) Reduced monitoring frequency.
 6133
- 6134 1) A GWS supplier may reduce the monitoring frequency for lead and copper
 6135 in source water to once during each nine-year compliance cycle (as that
 6136 term is defined in Section 611.101), provided that the samples are

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collected no later than every ninth calendar year, and only if the supplier meets one of the following criteria:

- A) The supplier demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in Section 611.353(b)(4) during at least three consecutive compliance periods under subsection (d)(1) of this Section; or
- B) The Agency has determined, by a SEP issued pursuant to Section 611.110, that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under subsection (d)(1) of this Section, the concentration of lead in source water was less than or equal to 0.005 mg/ℓ and the concentration of copper in source water was less than or equal to 0.65 mg/ℓ.

2) A SWS or mixed system supplier may reduce the monitoring frequency in subsection (d)(1) of this Section to once during each nine-year compliance cycle (as that term is defined in Section 611.101), provided that the samples are collected no later than every ninth calendar year, and only if the supplier meets one of the following criteria:

- A) The supplier demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Agency under Section 611.353(b)(4) for at least three consecutive years; or
- B) The Agency has determined, by a SEP issued pursuant to Section 611.110, that source water treatment is not needed and the supplier demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/ℓ and the concentration of copper in source water was less than or equal to 0.65 mg/ℓ.

3) A supplier that uses a new source of water is not eligible for reduced monitoring for lead or copper until it demonstrates by samples collected from the new source during three consecutive monitoring periods, of the appropriate duration provided by subsection (d)(1) of this Section, that lead or copper concentrations are below the MPC as specified by the Agency pursuant to Section 611.353(a)(4).

6180 BOARD NOTE: Derived from 40 CFR 141.88 (2007), as amended at 72 Fed. Reg.
6181 57782 (October 10, 2007)(~~2003~~).

6182
6183 (Source: Amended at 33 Ill. Reg. _____, effective _____)
6184

6185 **Section 611.359 Analytical Methods**
6186

6187 Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and
6188 temperature must be conducted using the methods set forth in Section 611.611(a).
6189

- 6190 a) Analyses for lead and copper performed for the purposes of compliance with this
6191 Subpart G must only be conducted by laboratories that have been certified by
6192 USEPA or the Agency. To obtain certification to conduct analyses for lead and
6193 copper, laboratories must do the following:
6194
- 6195 1) Analyze performance evaluation samples that include lead and copper
6196 provided by USEPA Environmental Monitoring and Support Laboratory
6197 or equivalent samples provided by the Agency; and
6198
 - 6199 2) Achieve quantitative acceptance limits as follows:
6200
- 6201 A) For lead: ± 30 percent of the actual amount in the performance
6202 evaluation sample when the actual amount is greater than or equal
6203 to 0.005 mg/l (the PQL for lead is 0.005 mg/l);
6204
 - 6205 B) For copper: ± 10 percent of the actual amount in the performance
6206 evaluation sample when the actual amount is greater than or equal
6207 to 0.050 mg/l (the PQL for copper is 0.050 mg/l);
6208
 - 6209 C) Achieve the method detection limit (MDL) for lead (0.001 mg/l,
6210 as defined in Section 611.350(a)) according to the procedures in 35
6211 Ill. Adm. Code 186 and appendix B to 40 CFR 136: "Definition
6212 and Procedure for the Determination of the Method Detection
6213 Limit – Revision 1.11-~~(2005)~~", incorporated by reference in
6214 Section 611.102(c). This need only be accomplished if the
6215 laboratory will be processing source water composite samples
6216 under Section 611.358(a)(1)(D)~~611.358(a)(1)(C)~~; and
6217
 - 6218 D) Be currently certified by USEPA or the Agency to perform
6219 analyses to the specifications described in subsection (a)(1)(a)(2)
6220 of this Section.
6221
6222

BOARD NOTE: Subsection (a) is derived from 40 CFR 141.89(a) and (a)(1)

6223 (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007)(2005).
6224

- 6225 b) The Agency must, by a SEP issued pursuant to Section 611.110, allow a supplier
6226 to use previously collected monitoring data for the purposes of monitoring under
6227 this Subpart G if the data were collected and analyzed in accordance with the
6228 requirements of this Subpart G.
6229

6230 BOARD NOTE: Subsection (b) is derived from 40 CFR 141.89(a)(2)
6231 (2007)(2005).
6232

- 6233 c) Reporting lead and copper levels.
6234

- 6235 1) All lead and copper levels greater than or equal to the lead and copper
6236 PQL ($Pb \geq 0.005 \text{ mg}/\ell$ and $Cu \geq 0.050 \text{ mg}/\ell$) must be reported as
6237 measured.
6238
6239 2) All lead and copper levels measured less than the PQL and greater than
6240 the MDL ($0.005 \text{ mg}/\ell > Pb > MDL$ and $0.050 \text{ mg}/\ell > Cu > MDL$) must be
6241 either reported as measured or as one-half the PQL set forth in subsection
6242 (a) of this Section (i.e., reported as $0.0025 \text{ mg}/\ell$ for lead or $0.025 \text{ mg}/\ell$ for
6243 copper).
6244
6245 3) All lead and copper levels below the lead and copper MDL ($MDL > Pb$)
6246 must be reported as zero.
6247

6248 BOARD NOTE: Subsection (c) is derived from 40 CFR 141.89(a)(3) and (a)(4) (2007)(2005).
6249

6250 (Source: Amended at 33 Ill. Reg. _____, effective _____)
6251

6252 **Section 611.360 Reporting**

6253
6254 A supplier must report all of the following information to the Agency in accordance with this
6255 Section.
6256

- 6257 a) Reporting for tap, lead, and copper, and water quality parameter monitoring.
6258
6259 1) Except as provided in subsection (a)(1)(viii) of this Section, a supplier
6260 must report the following information for all samples specified in Section
6261 611.356 and for all water quality parameter samples specified in Section
6262 611.357 within ten days of the end of each applicable sampling period
6263 specified in Sections 611.356 and 611.357 (i.e., every six months,
6264 annually, every three years, or every nine years). For a monitoring period
6265 with a duration less than six months, the end of the monitoring period is

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the last date on which samples can be collected during that period, as specified in Sections 611.356 and 611.357.

- A) The results of all tap samples for lead and copper, including the location of each site and the criteria under Section 611.356(a)(3) through (a)(7) under which the site was selected for the supplier's sampling pool;
- B) Documentation for each tap water lead or copper sample for which the water supplier requests invalidation pursuant to Section 611.356(f)(2);
- C) This subsection (a)(1)(C) corresponds with 40 CFR 141.90(a)(1)(iii), a provision that USEPA removed and marked "reserved." This statement preserves structural parity with the federal rules;
- D) The 90th percentile lead and copper concentrations measured from among all lead and copper tap samples collected during each sampling period (calculated in accordance with Section 611.350(c)(3)), unless the Agency calculates the system's 90th percentile lead and copper levels under subsection (h) of this Section;
- E) With the exception of initial tap sampling conducted pursuant to Section 611.356(d)(1), the supplier must designate any site that was not sampled during previous sampling periods, and include an explanation of why sampling sites have changed;
- F) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected pursuant to Section 611.357(b) through (e);
- G) The results of all samples collected at entry points for applicable water quality parameters pursuant to Section 611.357(b) through (e).
- H) A water supplier must report the results of all water quality parameter samples collected under Section 611.357(c) through (f) during each six-month monitoring period specified in Section 611.357(d) within the first 10 days following the end of the monitoring period, unless the Agency has specified, by a SEP granted pursuant to Section 611.110, a more frequent reporting

6309 requirement.

- 6310
- 6311 2) For a NTNCWS supplier, or a CWS supplier meeting the criteria of
- 6312 Sections 611.355(~~be~~)(7)(A) and (~~be~~)(7)(B), that does not have enough taps
- 6313 which can provide first-draw samples, the supplier must do either of the
- 6314 following:
- 6315
- 6316 A) Provide written documentation to the Agency that identifies
- 6317 standing times and locations for enough non-first-draw samples to
- 6318 make up its sampling pool under Section 611.356(b)(5) by the start
- 6319 of the first applicable monitoring period under Section 611.356(d)
- 6320 that commenced after April 11, 2000, unless the Agency has
- 6321 waived prior Agency approval of non-first-draw ~~sample~~ sampling
- 6322 sites selected by the supplier pursuant to Section 611.356(b)(5); or
- 6323
- 6324 B) If the Agency has waived prior approval of non-first-draw
- 6325 ~~sample~~ sampling sites selected by the supplier, identify, in writing,
- 6326 each site that did not meet the six-hour minimum standing time
- 6327 and the length of standing time for that particular substitute sample
- 6328 collected pursuant to Section 611.356(b)(5) and include this
- 6329 information with the lead and copper tap sample results required to
- 6330 be submitted pursuant to subsection (a)(1)(A) of this Section.
- 6331
- 6332 3) At a time specified by the Agency, by a SEP issued pursuant to Section
- 6333 611.110, or if no specific time is designated by the Agency, then as early
- 6334 as possible prior to~~No later than 60 days after~~ the addition of a new source
- 6335 or any change in water treatment, ~~unless the Agency requires earlier~~
- 6336 ~~notification,~~ a water supplier deemed to have optimized corrosion control
- 6337 under Section 611.351(b)(3), a water supplier subject to reduced
- 6338 monitoring pursuant to Section 611.356(d)(4), or a water supplier subject
- 6339 to a monitoring waiver pursuant to Section 611.356(g), must ~~submit~~ send
- 6340 written documentation to the Agency describing the change or addition.
- 6341 ~~In those instances where prior Agency approval of the treatment change or~~
- 6342 ~~new source is not required, USEPA has stated that it encourages water~~
- 6343 ~~systems to provide the notification to the Agency beforehand to minimize~~
- 6344 ~~the risk the treatment change or new source will adversely affect optimal~~
- 6345 ~~corrosion control.~~
- 6346
- 6347 4) Any small system supplier applying for a monitoring waiver under Section
- 6348 611.356(g), or subject to a waiver granted pursuant to Section
- 6349 611.356(g)(3), must provide the following information to the Agency in
- 6350 writing by the specified deadline:
- 6351

- 6352 A) By the start of the first applicable monitoring period in Section
 6353 611.356(d), any small water system supplier applying for a
 6354 monitoring waiver must provide the documentation required to
 6355 demonstrate that it meets the waiver criteria of Sections
 6356 611.356(g)(1) and (g)(2).
 6357
- 6358 B) No later than nine years after the monitoring previously conducted
 6359 pursuant to Section 611.356(g)(2) or Section 611.356(g)(4)(A),
 6360 each small system supplier desiring to maintain its monitoring
 6361 waiver must provide the information required by Sections
 6362 611.356(g)(4)(A) and (g)(4)(B).
 6363
- 6364 C) No later than 60 days after it becomes aware that it is no longer
 6365 free of lead-containing or copper-containing material, as
 6366 appropriate, each small system supplier with a monitoring waiver
 6367 must provide written notification to the Agency, setting forth the
 6368 circumstances resulting in the lead-containing or copper-containing
 6369 materials being introduced into the system and what corrective
 6370 action, if any, the supplier plans to remove these materials.
 6371
- 6372 D) By October 10, 2000, any small system supplier with a waiver
 6373 granted prior to April 11, 2000 and that had not previously met the
 6374 requirements of Section 611.356(g)(2) must have provided the
 6375 information required by that subsection.
 6376
- 6377 5) Each GWS supplier that limits water quality parameter monitoring to a
 6378 subset of entry points under Section 611.357(c)(3) must provide, by the
 6379 commencement of such monitoring, written correspondence to the Agency
 6380 that identifies the selected entry points and includes information sufficient
 6381 to demonstrate that the sites are representative of water quality and
 6382 treatment conditions throughout the system.
 6383
- 6384 b) Reporting for source water monitoring.
- 6385
- 6386 1) A supplier must report the sampling results for all source water samples
 6387 collected in accordance with Section 611.358 within ten days of the end of
 6388 each source water sampling period (i.e., annually, per compliance period,
 6389 per compliance cycle) specified in Section 611.358.
 6390
- 6391 2) With the exception of the first round of source water sampling conducted
 6392 pursuant to Section 611.358(b), a supplier must specify any site that was
 6393 not sampled during previous sampling periods, and include an explanation
 6394 of why the sampling point has changed.

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- c) Reporting for corrosion control treatment.
- By the applicable dates under Section 611.351, a supplier must report the following information:
- 1) For a supplier demonstrating that it has already optimized corrosion control, the information required by Section 611.352(b)(2) or (b)(3).
 - 2) For a supplier required to optimize corrosion control, its recommendation regarding optimal corrosion control treatment pursuant to Section 611.352(a).
 - 3) For a supplier required to evaluate the effectiveness of corrosion control treatments pursuant to Section 611.352(c), the information required by Section 611.352(c).
 - 4) For a supplier required to install optimal corrosion control approved by the Agency pursuant to Section 611.352(d), a copy of the Agency permit letter, which acts as certification that the supplier has completed installing the permitted treatment.
- d) Reporting for source water treatment. On or before the applicable dates in Section 611.353, a supplier must provide the following information to the Agency:
- 1) If required by Section 611.353(b)(1), its recommendation regarding source water treatment; or
 - 2) For suppliers required to install source water treatment pursuant to Section 611.353(b)(2), a copy of the Agency permit letter, which acts as certification that the supplier has completed installing the treatment approved by the Agency within 24 months after the Agency approved the treatment.
- e) Reporting for lead service line replacement. A supplier must report the following information to the Agency to demonstrate compliance with the requirements of Section 611.354:
- 1) No later than 12 months after the end of a monitoring period in which~~Within 12 months after~~ a supplier exceeds the lead action level in sampling referred to in Section 611.354(a), the supplier must submit~~report~~ each of the following to the Agency in writing:

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- A) ~~The material~~ A demonstration that it has conducted a materials evaluation, including the evaluation conducted as required by Section 611.356(a);
 - B) ~~The~~ Identify the initial number of lead service lines in its distribution system at the time the supplier exceeds the lead action level; and
 - C) ~~The~~ Provide the Agency with the supplier's schedule for annually replacing at least seven percent of the initial number of lead service lines in its distribution system.
- 2) Action by the supplier.
- A) No later than ~~Within~~ 12 months after the end of a monitoring period in which a supplier exceeds the lead action level in sampling referred to in Section 611.354(a), and every 12 months thereafter, the supplier must demonstrate to the Agency in writing that the supplier has done either of the following:
 - iA) Replaced in the previous 12 months at least seven percent of the initial number of lead service lines in its distribution system (or any greater number of lines specified by the Agency pursuant to Section 611.354(e)); or
 - iiB) Conducted sampling that demonstrates that the lead concentration in all service line samples from individual lines, taken pursuant to Section 611.356(b)(3), is less than or equal to 0.015 mg/l.
 - B) ~~When~~ Where the supplier makes a demonstration under subsection (e)(2)(~~A~~)(ii) of this Section, the total number of lines that the supplier has replaced, combined with the total number that meet the criteria of Section ~~611.354(c)~~ 611.354(b), must equal at least seven percent of the initial number of lead lines identified pursuant to subsection (e)(1)(~~a~~) of this Section (or the percentage specified by the Agency pursuant to Section 611.354(e)).
- 3) The annual letter submitted to the Agency pursuant to subsection (e)(2) of this Section must contain the following information:
- A) The number of lead service lines originally scheduled to be

- 6481 replaced during the previous year of the supplier's replacement
 6482 schedule;
- 6483
- 6484 B) The number and location of each lead service line actually replaced
 6485 during the previous year of the supplier's replacement schedule;
 6486 and
- 6487
- 6488 C) If measured, the water lead concentration from each lead service
 6489 line sampled pursuant to Section 611.356(b)(3) and the location of
 6490 each lead service line sampled, the sampling method used, and the
 6491 date of sampling.
- 6492
- 6493 4) Any supplier that collects lead service line samples following partial lead
 6494 service line replacement required by Section 611.354 must report the
 6495 results to the Agency within the first ten days of the month following the
 6496 month in which the supplier receives the laboratory results, or as specified
 6497 by the Agency. The Agency may, by a SEP granted pursuant to Section
 6498 611.110, eliminate this requirement to report these monitoring results. A
 6499 supplier must also report any additional information as specified by the
 6500 Agency, and in a time and manner prescribed by the Agency, to verify that
 6501 all partial lead service line replacement activities have taken place.
- 6502
- 6503 f) Reporting for public education program.
- 6504
- 6505 1) Any water supplier that is subject to the public education requirements in
 6506 Section 611.355 must, within ten days after the end of each period in
 6507 which the supplier is required to perform public education tasks in
 6508 accordance with Section 611.355(b)~~611.355(e)~~, send written
 6509 documentation to the Agency that contains the following:
- 6510
- 6511 A) A demonstration that the supplier has delivered the public
 6512 education materials that meet the content requirements in
 6513 Section~~Sections~~ 611.355(a) ~~and (b)~~ and the delivery requirements
 6514 in Section 611.355(b)~~611.355(e)~~; and
- 6515
- 6516 B) A list of all the newspapers, radio stations, television stations, and
 6517 facilities and organizations to which the supplier delivered public
 6518 education materials during the period in which the supplier was
 6519 required to perform public education tasks.
- 6520
- 6521 2) Unless required by the Agency, by a SEP issued pursuant to Section
 6522 611.110, a supplier that previously has submitted the information required
 6523 by subsection (f)(1)(B) of this Section need not resubmit the information

6524 required by subsection (f)(1)(B) of this Section, as long as there have been
6525 no changes in the distribution list and the supplier certifies that the public
6526 education materials were distributed to the same list submitted previously.
6527

6528 3) No later than three months following the end of the monitoring period,
6529 each supplier must mail a sample copy of the consumer notification of tap
6530 results to the Agency, along with a certification that the notification has
6531 been distributed in a manner consistent with the requirements of Section
6532 611.355(d).
6533

6534 g) Reporting of additional monitoring data. Any supplier that collects sampling data
6535 in addition to that required by this Subpart G must report the results of that
6536 sampling to the Agency within the first ten days following the end of the
6537 applicable sampling periods specified by Sections 611.356 through 611.358
6538 during which the samples are collected.
6539

6540 h) Reporting of 90th percentile lead and copper concentrations where the Agency
6541 calculates a system's 90th percentile concentrations. A water supplier is not
6542 required to report the 90th percentile lead and copper concentrations measured
6543 from among all lead and copper tap water samples collected during each
6544 monitoring period, as required by subsection (a)(1)(D) of this Section if the
6545 following is true:
6546

6547 1) The Agency has previously notified the water supplier that it will calculate
6548 the water system's 90th percentile lead and copper concentrations, based on
6549 the lead and copper tap results submitted pursuant to subsection (h)(2)(A)
6550 of this Section, and has specified a date before the end of the applicable
6551 monitoring period by which the supplier must provide the results of lead
6552 and copper tap water samples;
6553

6554 2) The supplier has provided the following information to the Agency by the
6555 date specified in subsection (h)(1) of this Section:
6556

6557 A) The results of all tap samples for lead and copper including the
6558 location of each site and the criteria under Section 611.356(a)(3),
6559 (a)(4), (a)(5), (a)(6), or (a)(7) under which the site was selected for
6560 the system's sampling pool, pursuant to subsection (a)(1)(A) of this
6561 Section; and
6562

6563 B) An identification of sampling sites utilized during the current
6564 monitoring period that were not sampled during previous
6565 monitoring periods, and an explanation why sampling sites have
6566 changed; and

- 6567
6568 3) The Agency has provided the results of the 90th percentile lead and copper
6569 calculations, in writing, to the water supplier before the end of the
6570 monitoring period.
6571

6572 BOARD NOTE: Derived from 40 CFR 141.90 (2007), as amended at 72 Fed. Reg. 57782
6573 (October 10, 2007)(2003).

6574
6575 (Source: Amended at 33 Ill. Reg. _____, effective _____)
6576

6577 SUBPART I: DISINFECTANT RESIDUALS, DISINFECTION
6578 BYPRODUCTS, AND DISINFECTION BYPRODUCT PRECURSORS
6579

6580 **Section 611.381 Analytical Requirements**
6581

- 6582 a) A supplier must use only the analytical methods specified in this Section or
6583 alternative methods~~their equivalents~~ as approved by the Agency pursuant to
6584 Section 611.480 to demonstrate compliance with the requirements of this Subpart I
6585 and with the requirements of Subparts W and Y of this Part.
6586
6587 b) Disinfection byproducts (DBPs).
6588
6589 1) A supplier must measure disinfection byproducts (DBPs) by the appropriate
6590 of the following methods:
6591
6592 A) TTHM:
6593
6594 i) By purge and trap, gas chromatography, electrolytic
6595 conductivity detector, and photoionization detector:
6596 USEPA Organic Methods, Method 502.2. If TTHMs are
6597 the only analytes being measured in the sample, then a
6598 photoionization detector is not required.
6599
6600 ii) By purge and trap, gas chromatography, mass
6601 spectrometer: USEPA Organic Methods, Method 524.2.
6602
6603 iii) By liquid-liquid extraction, gas chromatography, electron
6604 capture detector: USEPA Organic Methods, Method 551.1.
6605
6606 B) HAA5:
6607

- 6608 i) By liquid-liquid extraction (diazomethane), gas
 6609 chromatography, electron capture detector: Standard
 6610 Methods, 19th or 21st ed., Method 6251 B.
 6611

6612 BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg.
 6613 388), USEPA amended the entry for HAA5 by liquid-liquid
 6614 extraction (diazomethane), gas chromatography, electron
 6615 capture detector, in the table at corresponding 40 CFR
 6616 141.131(b)(1) to allow the use of Standard Methods Online
 6617 (at www.standardmethods.org), Method 6251 B (as
 6618 approved in 1994). The Board has instead cited to the 21st
 6619 edition of Standard Methods for the Examination of Water
 6620 and Wastewater (the printed version of Standard Methods),
 6621 since the version of Method 6251 that appears in that
 6622 printed volume is that cited by USEPA as acceptable for
 6623 use. USEPA later added Method 6251 B from the 21st
 6624 edition of Standard Methods as an approved alternative
 6625 method in appendix A to subpart C, added on June 3, 2008
 6626 (at 73 Fed. Reg. 31616).
 6627

- 6628 ii) By solid phase extractor (acidic methanol), gas
 6629 chromatography, electron capture detector: USEPA
 6630 Organic Methods, Method 552.1.
 6631

- 6632 iii) By liquid-liquid extraction (acidic methanol), gas
 6633 chromatography, electron capture detector: USEPA
 6634 Organic Methods, Method 552.2 or 552.3.
 6635

6636 C) Bromate:

- 6637
 6638 i) By ion chromatography: USEPA Organic and Inorganic
 6639 Methods, Method 300.1.
 6640

- 6641 ii) By ion chromatography and post-column reaction: USEPA
 6642 OGWDW Methods, Method 317.0, rev 2.0, or 326.0, rev.
 6643 1.0.
 6644

- 6645 iii) By inductively-coupled plasma – /mass spectrometer:
 6646 USEPA Organic and Inorganic Methods, Method 321.8.
 6647

6648 BOARD NOTE: Ion chromatography and post column reaction or
 6649 inductively-coupled plasma – /mass spectrometry must be used for
 6650 monitoring of bromate for purposes of demonstrating eligibility of

6651 reduced monitoring, as prescribed in Section 611.382(b)(3)(B).
6652 For inductively-coupled plasma ~~–~~ mass spectrometry, samples
6653 must be preserved at the time of sampling with 50 mg
6654 ethylenediamine (EDA) per liter of sample, and the samples must
6655 be analyzed within 28 days.
6656

6657 D) Chlorite:

- 6658
6659 i) By amperometric titration: Standard Methods, 19th or 21st
6660 ed., Method 4500-ClO₂ E.
6661

6662 BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg.
6663 388), USEPA amended the entry for chlorite by
6664 amperometric titration, in the table at corresponding 40
6665 CFR 141.23(k)(1) to allow the use of Standard Methods
6666 Online (at www.standardmethods.org), Method 4500-ClO₂
6667 E (as approved in 2000). The Board has instead cited to the
6668 21st edition of Standard Methods for the Examination of
6669 Water and Wastewater (the printed version of Standard
6670 Methods), since the version of Method 4500-ClO₂ that
6671 appears in that printed volume is that cited by USEPA as
6672 acceptable for use. USEPA later added Method 4500-ClO₂
6673 E from the 21st edition of Standard Methods as an approved
6674 alternative method in appendix A to subpart C, added on
6675 June 3, 2008 (at 73 Fed. Reg. 31616).
6676

- 6677 ii) By spectrophotometry: USEPA OGWDW Methods,
6678 Method 327.0, rev. 1.1.
6679

- 6680 iii) By ion chromatography: USEPA Environmental Inorganic
6681 Methods, Method 300.0; USEPA Organic and Inorganic
6682 Methods, Method 300.1; USEPA OGWDW Methods,
6683 Method 317.0, rev. 2.0, or 326.0, rev. 1.0; or ASTM
6684 Method D6581-00.
6685

6686 BOARD NOTE: Amperometric titration or spectrophotometry
6687 may be used for routine daily monitoring of chlorite at the entrance
6688 to the distribution system, as prescribed in Section
6689 611.382(b)(2)(A)(i). Ion chromatography must be used for routine
6690 monthly monitoring of chlorite and additional monitoring of
6691 chlorite in the distribution system, as prescribed in Section
6692 611.382(b)(2)(A)(ii) and (b)(2)(B).
6693

- 6694 2) Analyses under this Section for DBPs must be conducted by laboratories
 6695 that have received certification by USEPA or the Agency except as
 6696 specified under subsection (b)(3) of this Section. To receive certification
 6697 to conduct analyses for the DBP contaminants listed in Sections 611.312
 6698 and 611.381 and Subparts W and Y of this Part, the laboratory must fulfill
 6699 the requirements of subsections (b)(2)(A), (b)(2)(C), and (b)(2)(D) of this
 6700 Section.
 6701
 6702 A) The laboratory must analyze performance evaluation (PE) samples
 6703 that are acceptable to USEPA or the Agency at least once during
 6704 each consecutive 12-month period by each method for which the
 6705 laboratory desires certification.
 6706
 6707 B) This subsection corresponds with 40 CFR 141.131(b)(2)(ii), which
 6708 has expired by its own terms. This statement maintains structural
 6709 consistency with the corresponding federal rule.
 6710
 6711 C) The laboratory must achieve quantitative results on the PE sample
 6712 analyses that are within the acceptance limits set forth in
 6713 subsections (b)(2)(C)(i) through (b)(2)(B)(xi) of this Section,
 6714 subject to the conditions of subsections (b)(2)(C)(xii) and
 6715 (b)(2)(C)(xiii) of this Section:
 6716
 6717 i) Chloroform (a THM): $\pm 20\%$ of true value;
 6718
 6719 ii) Bromodichloromethane (a THM): $\pm 20\%$ of true value;
 6720
 6721 iii) Dibromochloromethane (a THM): $\pm 20\%$ of true value;
 6722
 6723 iv) Bromoform (a THM): $\pm 20\%$ of true value;
 6724
 6725 v) Monochloroacetic Acid (an HAA5): $\pm 40\%$ of true value;
 6726
 6727 vi) Dichloroacetic Acid (an HAA5): $\pm 40\%$ of true value;
 6728
 6729 vii) Trichloroacetic Acid (an HAA5): $\pm 40\%$ of true value;
 6730
 6731 viii) Monobromoacetic Acid (an HAA5): $\pm 40\%$ of true value;
 6732
 6733 ix) Dibromoacetic Acid (an HAA5): $\pm 40\%$ of true value;
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 6735 x) Chlorite: $\pm 30\%$ of true value; and
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- xi) Bromate: $\pm 30\%$ of true value.
 - xii) The laboratory must meet all four of the individual THM acceptance limits set forth in subsections (b)(2)(B)(i) through (b)(2)(B)(iv) of this Section in order to successfully pass a PE sample for TTHM.
 - xiii) The laboratory must meet the acceptance limits for four out of the five HAA5 compounds set forth in subsections (b)(2)(B)(v) through (b)(2)(B)(ix) of this Section in order to successfully pass a PE sample for HAA5.
- D) The laboratory must report quantitative data for concentrations at least as low as the minimum reporting levels (MRLs) listed in subsections (b)(2)(D)(i) through (b)(2)(D)(xi) of this Section, subject to the limitations of subsections (b)(2)(D)(xii) and (b)(2)(D)(xiii) of this Section, for all DBP samples analyzed for compliance with Sections 611.312 and 611.385 and Subparts W and Y of this Part:
- i) Chloroform (a THM): 0.0010 mg/l;
 - ii) Bromodichloromethane (a THM): 0.0010 mg/l;
 - iii) Dibromochloromethane (a THM): 0.0010 mg/l;
 - iv) Bromoform (a THM): 0.0010 mg/l;
 - v) Monochloroacetic Acid (an HAA5): 0.0020 mg/l;
 - vi) Dichloroacetic Acid (an HAA5): 0.0010 mg/l;
 - vii) Trichloroacetic Acid (an HAA5): 0.0010 mg/l;
 - viii) Monobromoacetic Acid (an HAA5): 0.0010 mg/l;
 - ix) Dibromoacetic Acid (an HAA5): 0.0010 mg/l;
 - x) Chlorite: 0.020 mg/l, applicable to monitoring as required by Section 611.382(b)(2)(A)(ii) and (b)(2)(B); and
 - xi) Bromate: 0.0050, or 0.0010 mg/l if the laboratory uses USEPA OGWDW Methods, Method 317.0, rev. 2.0, or

- 6780 326.0 or USEPA Organic and Inorganic Methods, Method
 6781 321.8.
 6782
 6783 xii) The calibration curve must encompass the regulatory MRL
 6784 concentration. Data may be reported for concentrations
 6785 lower than the regulatory MRL as long as the precision and
 6786 accuracy criteria are met by analyzing an MRL check
 6787 standard at the lowest reporting limit chosen by the
 6788 laboratory. The laboratory must verify the accuracy of the
 6789 calibration curve at the MRL concentration by analyzing an
 6790 MRL check standard with a concentration less than or
 6791 equal to 110% of the MRL with each batch of samples.
 6792 The measured concentration for the MRL check standard
 6793 must be $\pm 50\%$ of the expected value, if any field sample in
 6794 the batch has a concentration less than five times the
 6795 regulatory MRL. Method requirements to analyze higher
 6796 concentration check standards and meet tighter acceptance
 6797 criteria for them must be met in addition to the MRL check
 6798 standard requirement.
 6799
 6800 xiii) When adding the individual trihalomethane or haloacetic
 6801 acid concentrations, for the compounds listed in
 6802 subsections (b)(2)(D)(v) through (b)(2)(D)(ix) of this
 6803 Section, to calculate the TTHM or HAA5 concentrations,
 6804 respectively, a zero is used for any analytical result that is
 6805 less than the MRL concentration for that DBP, unless
 6806 otherwise specified by the Agency.
 6807
 6808 3) A party approved by USEPA or the Agency must measure daily chlorite
 6809 samples at the entrance to the distribution system.
 6810
 6811 c) Disinfectant residuals.
 6812
 6813 1) A supplier must measure residual disinfectant concentrations for free
 6814 chlorine, combined chlorine (chloramines), and chlorine dioxide by the
 6815 appropriate of the methods listed in subsections (c)(1)(A) through (c)(1)(D)
 6816 of this Section, subject to the provisions of subsection (c)(1)(E) of this
 6817 Section:
 6818
 6819 A) Free Chlorine:
 6820
 6821 i) Amperometric titration using Standard Methods, 19th, 20th,
 6822 or 21st ed., Method 4500-Cl D, or ASTM Method 1253-86,
 6823 1253-96, or 1253-03;

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- ii) DPD ferrous titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl F;
 - iii) DPD colorimetric using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl G; or
 - iv) Syringaldazine (FACTS) using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl H.
- B) Combined Chlorine:
- i) Amperometric titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl D, or ASTM Method 1253-86, 1253-96, or 1253-03;
 - ii) DPD ferrous titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl F; or
 - iii) DPD colorimetric using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl G.
- C) Total Chlorine:
- i) Amperometric titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl D, or ASTM Method 1253-86, 1253-96, or 1253-03;
 - ii) Low-level amperometric titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl E;
 - iii) DPD ferrous titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl F;
 - iv) DPD colorimetric using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl G; or
 - v) Iodometric electrode using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl I.
- D) Chlorine Dioxide:

- 6866 i) DPD using Standard Methods, 19th, 20th, or 21st ed.,
6867 Method 4500-ClO₂ D;
6868
6869 ii) Amperometric Method II using Standard Methods, 19th,
6870 20th, or 21st ed., Method 4500-ClO₂ E; or
6871
6872 iii) Lissamine Green spectrophotometric using USEPA
6873 OGWDW Method 327.0 (rev. 1.1).
6874
6875 E) The methods listed are approved for measuring the specified
6876 disinfectant residual. The supplier may measure free chlorine or
6877 total chlorine for demonstrating compliance with the chlorine
6878 MRDL and combined chlorine, or total chlorine may be measured
6879 for demonstrating compliance with the chloramine MRDL.
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6881 BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA
6882 amended the entries for free chlorine, combined chlorine, and chlorine
6883 dioxide in the table at corresponding 40 CFR 141.23(k)(1) to allow the use
6884 of Standard Methods Online (at www.standardmethods.org), Method
6885 4500-Cl D, E, F, G, H, or I or Method 4500-ClO₂ E (as approved in 2000).
6886 The Board has instead cited to the 21st edition of Standard Methods for the
6887 Examination of Water and Wastewater (the printed version of Standard
6888 Methods), since the versions of Method 4500-Cl and Method 4500-ClO₂
6889 that appear in that printed volume is that cited by USEPA as acceptable
6890 for use. USEPA later added Method 4500-Cl D, E, F, G, H, or I or
6891 Method 4500-ClO₂ E from the 21st edition of Standard Methods as an
6892 approved alternative method in appendix A to subpart C, added on June 3,
6893 2008 (at 73 Fed. Reg. 31616).
6894

6895 2) Test strips.

6896 A) ITS Method D99-003.

6897 BOARD NOTE: USEPA added ITS Method D99-003 as an
6898 approved alternative method in appendix A to subpart C, added on
6900 June 3, 2008 (at 73 Fed. Reg. 31616).
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6902 B) If approved by the Agency, a supplier may also measure residual
6903 disinfectant concentrations for chlorine, chloramines, and chlorine
6904 dioxide by using DPD colorimetric test kits.
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6906 3) A party approved by USEPA or the Agency must measure residual
6907 disinfectant concentration.
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d) A supplier required to analyze parameters not included in subsections (b) and (c) of this Section must use the methods listed below. A party approved by USEPA or the Agency must measure the following parameters:

- 1) Alkalinity. All methods allowed in Section 611.611(a)(21) for measuring alkalinity.
- 2) Bromide:
 - A) USEPA Inorganic Methods, Method 300.0;
 - B) USEPA Organic and Inorganic Methods, Method 300.1;
 - C) USEPA OGWDW Methods, Method 317.0 (rev. 2.0) or Method 326.0 (rev. 1.0); or
 - D) ASTM Method D6581-00.
- 3) Total Organic Carbon (TOC), by any of the methods listed in subsection (d)(3)(A)(i), (d)(3)(A)(ii), (d)(3)(A)(iii), or (d)(3)(B) of this Section, subject to the limitations of subsection (d)(3)(C) of this Section:
 - A) Standard Methods, 19th, 20th, or 21st ed., using one of the following methods:
 - i) Method 5310 B (High-Temperature Combustion Method);
 - ii) Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method); or
 - iii) Method 5310 D (Wet-Oxidation Method).

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entries for total organic carbon, high-temperature combustion, persulfate-ultraviolet or heated persulfate, and wet oxidation at corresponding 40 CFR 141.131(d)(3) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 5310 B, C, or D (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of

- 6952 Method 5310 B, C, or D that appears in that printed volume is that
 6953 cited by USEPA as acceptable for use. USEPA later added
 6954 Method 5310 B, C, or D from the 21st edition of Standard Methods
 6955 as an approved alternative method in appendix A to subpart C,
 6956 added on June 3, 2008 (at 73 Fed. Reg. 31616).
 6957
- 6958 B) USEPA NERL Method 415.3 (rev. 1.1).
 6959
- 6960 C) Inorganic carbon must be removed from the samples prior to
 6961 analysis. TOC samples may not be filtered prior to analysis. TOC
 6962 samples must be acidified at the time of sample collection to
 6963 achieve pH less than or equal to 2 with minimal addition of the
 6964 acid specified in the method or by the instrument manufacturer.
 6965 Acidified TOC samples must be analyzed within 28 days.
 6966
- 6967 4) Specific Ultraviolet Absorbance (SUVA). SUVA is equal to the UV
 6968 absorption at 254 nm (UV_{254}) (measured in m^{-1}) divided by the dissolved
 6969 organic carbon (DOC) concentration (measured as mg/ℓ). In order to
 6970 determine SUVA, it is necessary to separately measure UV_{254} and DOC.
 6971 When determining SUVA, a supplier must use the methods stipulated in
 6972 subsection (d)(4)(A) of this Section to measure DOC and the method
 6973 stipulated in subsection (d)(4)(B) of this Section to measure UV_{254} . SUVA
 6974 must be determined on water prior to the addition of disinfectants/oxidants
 6975 by the supplier. DOC and UV_{254} samples used to determine a SUVA value
 6976 must be taken at the same time and at the same location.
 6977
- 6978 A) Dissolved Organic Carbon (DOC). Standard Methods, 19th ed., 20th
 6979 ed., or 21st ed., Method 5310 B (High-Temperature Combustion
 6980 Method), Method 5310 C (Persulfate-Ultraviolet or Heated-
 6981 Persulfate Oxidation Method), or Method 5310 D (Wet-Oxidation
 6982 Method) or USEPA NERL Method 415.3 (rev. 1.1). Prior to
 6983 analysis, DOC samples must be filtered through the 0.45 μm
 6984 pore-diameter filter as soon as practical after sampling, not to
 6985 exceed 48 hours. After filtration, DOC samples must be acidified
 6986 to achieve pH less than or equal to 2 with minimal addition of the
 6987 acid specified in the method or by the instrument manufacturer.
 6988 Acidified DOC samples must be analyzed within 28 days after
 6989 sample collection. Inorganic carbon must be removed from the
 6990 samples prior to analysis. Water passed through the filter prior to
 6991 filtration of the sample must serve as the filtered blank. This filtered
 6992 blank must be analyzed using procedures identical to those used for
 6993 analysis of the samples and must meet the following standards:
 6994 DOC less than 0.5 mg/ℓ ; and
 6995

6996 BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388),
6997 USEPA amended the entries for specific ultraviolet absorbance-
6998 dissolved organic carbon at corresponding 40 CFR
6999 141.131(d)(4)(i) to allow the use of Standard Methods Online (at
7000 www.standardmethods.org), Method 5310 B, C, or D (as approved
7001 in 2000). The Board has instead cited to the 21st edition of
7002 Standard Methods for the Examination of Water and Wastewater
7003 (the printed version of Standard Methods), since the version of
7004 Method 5310 B, C, or D that appears in that printed volume is that
7005 cited by USEPA as acceptable for use. USEPA later added
7006 Method 5310 B, C, or D from the 21st edition of Standard Methods
7007 as an approved alternative method in appendix A to subpart C,
7008 added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 7009
- 7010 B) Ultraviolet Absorption at 254 nm (UV₂₅₄). Method 5910 B
- 7011 (Ultraviolet Absorption Method). UV absorption must be measured
- 7012 at 253.7 nm (may be rounded off to 254 nm). Prior to analysis,
- 7013 UV₂₅₄ samples must be filtered through a 0.45 µm pore-diameter
- 7014 filter. The pH of UV₂₅₄ samples may not be adjusted. Samples
- 7015 must be analyzed as soon as practical after sampling, not to exceed
- 7016 48 hours; and

7017

7018 BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388),

7019 USEPA amended the entries for specific ultraviolet absorbance-

7020 ultraviolet absorption at 254 nm at corresponding 40 CFR

7021 141.131(d)(4)(ii) to allow the use of Standard Methods Online (at

7022 www.standardmethods.org), Method 5910 B (as approved in

7023 2000). The Board has instead cited to the 21st edition of Standard

7024 Methods for the Examination of Water and Wastewater (the

7025 printed version of Standard Methods), since the version of Method

7026 5910 B that appears in that printed volume is that cited by USEPA

7027 as acceptable for use. USEPA later added Method 5910 B from

7028 the 21st edition of Standard Methods as an approved alternative

7029 method in appendix A to subpart C, added on June 3, 2008 (at 73

7030 Fed. Reg. 31616).

- 7031
- 7032 5) pH. All methods allowed in Section 611.611(a)(17) for measuring pH.

- 7033
- 7034 6) Magnesium. All methods allowed in Section 611.611(a) for measuring
- 7035 magnesium.
- 7036

7037 BOARD NOTE: Derived from 40 CFR 141.131 (2007) and appendix A to 40 CFR 141,

7038 as added at 73 Fed. Reg. 31616 (June 3, 2008)(2006).

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(Source: Amended at 33 Ill. Reg. _____, effective _____)

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.480 Alternative Analytical Techniques

The Agency ~~must~~may approve, by a SEP issued pursuant to Section 611.110, an ~~alternative~~alternate analytical technique if it determines that USEPA has approved the method as an alternative method by adding it to 40CFR 141 and the Board has not incorporated the federal approval into this Part 611. The Agency must not approve an ~~alternative~~alternate analytical technique without the concurrence of USEPA. ~~The Agency must approve an alternate technique if it is substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with any MCL.~~ The use of the ~~alternative~~alternate analytical technique must not decrease the frequency of monitoring required by this Part.

BOARD NOTE: Derived from 40 CFR 141.27 (2007)(2002).

(Source: Amended at 33 Ill. Reg. _____, effective _____)

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.526 Analytical Methodology

- a) The standard sample volume required for total coliform analysis, regardless of analytical method used, is 100 mL.
- b) Suppliers need only determine the presence or absence of total coliforms; a determination of total coliform density is not required.
- c) Suppliers must conduct total coliform analyses in accordance with one of the following analytical methods, incorporated by reference in Section 611.102, or in accordance with an alternative method approved by the Agency pursuant to Section 611.480 (the time from sample collection to initiation of analysis may not exceed 30 hours, and the supplier is encouraged but not required to hold samples below 10° C during transit):
 - 1) Total Coliform Fermentation Technique, as set forth in Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Methods 9221 A and B, as follows:
 - A) Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth if the supplier conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the

7083 water normally tested and this comparison demonstrates that the
7084 false-positive rate and false-negative rate for total coliforms, using
7085 lactose broth, is less than 10 percent;

7086
7087 B) If inverted tubes are used to detect gas production, the media
7088 should cover these tubes at least one-half to two-thirds after the
7089 sample is added; and

7090
7091 C) No requirement exists to run the completed phase on 10 percent of
7092 all total coliform-positive confirmed tubes.

7093
7094 2) Total Coliform Membrane Filter Technique, as set forth in Standard
7095 Methods, 18th, 19th, ~~or 20th~~, or 21st ed.: Methods 9222 A, B, and C.

7096
7097 3) Presence-Absence (P-A) Coliform Test, as set forth in: Standard Methods,
7098 18th, 19th, ~~or 20th~~, or 21st ed.: Method 9221 D, as follows:

7099
7100 A) No requirement exists to run the completed phase on 10 percent of
7101 all total coliform-positive confirmed tubes; and

7102
7103 B) Six-times formulation strength may be used if the medium is filter-
7104 sterilized rather than autoclaved.

7105
7106 4) ONPG-MUG test: Standard Methods, 18th, 19th, ~~or 20th~~, or 21st ed.; ~~or~~
7107 ~~from Standard Methods outlined Method 9223.~~ (The ONPG-MUG test is
7108 also known as the Autoanalysis Colilert System).)

7109
7110 5) Colisure Test (Autoanalysis Colilert System). (The Colisure Test may be
7111 read after an incubation time of 24 hours.)

7112
7113 BOARD NOTE: USEPA included the P-A Coliform and Colisure Tests
7114 for testing finished water under the coliform rule, but did not include them
7115 for the purposes of the surface water treatment rule, under Section
7116 611.531, for which quantitation of total coliforms is necessary. For these
7117 reasons, USEPA included Standard Methods: Method 9221 C for the
7118 surface water treatment rule, but did not include it for the purposes of the
7119 total coliform rule, under this Section.

7120
7121 6) E*Colite® Test (Charm Sciences, Inc.).

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7123 7) m-ColiBlue24® Test (Hatch Company).

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7125 8) ReadyCult Coliforms 100 Presence/Absence Test.

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- 9) Membrane Filter Technique using Chromocult Coliform Agar.
- 10) Colitag® Test.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended note 1 to the table at corresponding 40 CFR 141.21(f)(3) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 9221 A, B, and D (as approved in 1999) or Method 9222 A, B, and C (as approved in 1997); and 9223 B (as approved in 1997). The Board has cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods) for Methods 9221 and 9223, since the cited versions of the methods appears in that reference. USEPA later added Method 9221 A, B, and D; Method 9222 A, B, and C; Method 9223 from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- d) This subsection corresponds with 40 CFR 141.21(f)(4), which USEPA has marked "reserved." This statement maintains structural consistency with the federal regulations.
- e) Suppliers must conduct fecal coliform analysis in accordance with the following procedure:
 - 1) When the MTF Technique or P-A Coliform Test is used to test for total coliforms, shake the lactose-positive presumptive tube or P-A vigorously and transfer the growth with a sterile 3-mm loop or sterile applicator stick into brilliant green lactose bile broth and EC medium, defined below, to determine the presence of total and fecal coliforms, respectively.
 - 2) For approved methods that use a membrane filter, transfer the total coliform-positive culture by one of the following methods: remove the membrane containing the total coliform colonies from the substrate with sterile forceps and carefully curl and insert the membrane into a tube of EC medium; (the laboratory may first remove a small portion of selected colonies for verification); swab the entire membrane filter surface with a sterile cotton swab and transfer the inoculum to EC medium (do not leave the cotton swab in the EC medium); or inoculate individual total coliform-positive colonies into EC medium. Gently shake the inoculated tubes of EC medium to insure adequate mixing and incubate in a waterbath at 44.5 ±0.2° C for 24 ±2 hours. Gas production of any amount in the inner fermentation tube of the EC medium indicates a positive fecal coliform test.

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- 3) EC medium is described in Standard Methods, 18th ed., 19th ed., and 20th ed.: Method 9221E.
 - 4) Suppliers need only determine the presence or absence of fecal coliforms; a determination of fecal coliform density is not required.
- f) Suppliers must conduct analysis of E. coli in accordance with one of the following analytical methods, incorporated by reference in Section 611.102:
- 1) EC medium supplemented with 50 $\mu\text{g}/\ell$ of MUG (final concentration). EC medium is as described in subsection (e) of this Section. MUG may be added to EC medium before autoclaving. EC medium supplemented with 50 $\mu\text{g}/\ell$ MUG is commercially available. At least 10 ml of EC medium supplemented with MUG must be used. The inner inverted fermentation tube may be omitted. The procedure for transferring a total coliform-positive culture to EC medium supplemented with MUG is as in subsection (e) of this Section for transferring a total coliform-positive culture to EC medium. Observe fluorescence with an ultraviolet light (366 nm) in the dark after incubating tube at $44.5 \pm 2^\circ \text{C}$ for 24 ± 2 hours; or
 - 2) Nutrient agar supplemented with 100 $\mu\text{g}/\ell$ MUG (final concentration), as described in Standard Methods, 19th ed. and 20th ed.: Method 9222 G. This test is used to determine if a total coliform-positive sample, as determined by the MF technique, contains E. coli. Alternatively, Standard Methods, 18th ed.: Method 9221 B may be used if the membrane filter containing a total coliform-positive colony or colonies is transferred to nutrient agar, as described in Method 9221 B (paragraph 3), supplemented with 100 $\mu\text{g}/\ell$ MUG . If Method 9221 B is used, incubate the agar plate at 35°C for four hours, then observe the colony or colonies under ultraviolet light (366-nm) in the dark for fluorescence. If fluorescence is visible, E. coli are present.
 - 3) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in Appendix D of this Part. (The Autoanalysis Colilert System is a MMO-MUG test.) If the MMO-MUG test is total coliform positive after a 24-hour incubation, test the medium for fluorescence with a 366-nm ultraviolet light (preferably with a six-watt lamp) in the dark. If fluorescence is observed, the sample is E. coli-positive. If fluorescence is questionable (cannot be definitively read) after 24 hours incubation, incubate the culture for an additional four hours (but not to exceed 28 hours total), and again test the medium for fluorescence. The MMO-MUG test with hepes buffer is the only approved formulation for the detection of

- 7212 E. coli.
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 7214 4) The Colisure Test (Autoanalysis Colilert System).
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 7216 5) The membrane filter method with MI agar.
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 7218 6) The E*Colite® Test.
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 7220 7) The m-ColiBlue24® Test.
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 7222 8) ReadyCult Coliforms 100 Presence/Absence Test.
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 7224 9) Membrane Filter Technique using Chromocult Coliform Agar.
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 7226 10) Colitag® Test.
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 7228 g) As an option to the method set forth in subsection (f)(3) of this Section, a supplier
 7229 with a total coliform-positive, MUG-negative, MMO-MUG test may further
 7230 analyze the culture for the presence of E. coli by transferring a 0.1 ml, 28-hour
 7231 MMO-MUG culture to EC medium + MUG with a pipet. The formulation and
 7232 incubation conditions of the EC medium + MUG, and observation of the results,
 7233 are described in subsection (f)(1) of this Section.
 7234
 7235 h) This subsection corresponds with 40 CFR 141.21(f)(8), a central listing of all
 7236 documents incorporated by reference into the federal microbiological analytical
 7237 methods. The corresponding Illinois incorporations by reference are located at
 7238 Section 611.102. This statement maintains structural parity with USEPA
 7239 regulations.
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7241 BOARD NOTE: Derived from 40 CFR 141.21(f) (2007) and appendix A to 40 CFR 141,
 7242 as added at 73 Fed. Reg. 31616 (June 3, 2008)(2003).

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 7244 (Source: Amended at 33 Ill. Reg. _____, effective _____)
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7246 **Section 611.531 Analytical Requirements**
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7248 The analytical methods specified in this Section, or alternative methods approved by the Agency
 7249 pursuant to Section 611.480, must be used to demonstrate compliance with the requirements of
 7250 only 611.Subpart B; they do not apply to analyses performed for the purposes of Sections
 7251 611.521 through 611.527 of this Subpart L. Measurements for pH, temperature, turbidity, and
 7252 RDCs must be conducted under the supervision of a certified operator. Measurements for total
 7253 coliforms, fecal coliforms and HPC must be conducted by a laboratory certified by the Agency to
 7254 do such analysis. The following procedures must be performed by the following methods,

7255 incorporated by reference in Section 611.102:
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7257 a) A supplier shall do as follows:
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7259 1) Conduct analyses of pH in accordance with one of the methods listed at
7260 Section 611.611; and

7261
7262 2) Conduct analyses of total coliforms, fecal coliforms, heterotrophic
7263 bacteria, and turbidity in accordance with one of the following methods,
7264 and by using analytical test procedures contained in USEPA Technical
7265 Notes, incorporated by reference in Section 611.102, as follows:
7266

7267 A) Total Coliforms.
7268

7269 BOARD NOTE: The time from sample collection to initiation of
7270 analysis for source (raw) water samples required by Sections
7271 611.521 and 611.532 and Subpart B of this Part only must not
7272 exceed eight hours. The supplier is encouraged but not required to
7273 hold samples below 10° C during transit.
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7275 i) Total coliform fermentation technique: Standard Methods,
7276 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9221 A, B, and C.
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7278 BOARD NOTE: Lactose broth, as commercially available,
7279 may be used in lieu of lauryl tryptose broth if the supplier
7280 conducts at least 25 parallel tests between this medium and
7281 lauryl tryptose broth using the water normally tested and
7282 this comparison demonstrates that the false-positive rate
7283 and false-negative rate for total coliforms, using lactose
7284 broth, is less than 10 percent. If inverted tubes are used to
7285 detect gas production, the media should cover these tubes at
7286 least one-half to two-thirds after the sample is added. No
7287 requirement exists to run the completed phase on 10
7288 percent of all total coliform-positive confirmed tubes.
7289

7290 ii) Total coliform membrane filter technique: Standard
7291 Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9222 A, B,
7292 and C.
7293

7294 iii) ONPG-MUG test (also known as the Autoanalysis Colilert
7295 System): Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.:
7296 Method 9223.
7297

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

B) Fecal Coliforms.

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

- i) Fecal coliform procedure: Standard Methods, 18th, 19th, or 20th, or 21st ed.: Method 9221 E.

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

- ii) Fecal Coliform Membrane Filter Procedure: Standard Methods, 18th, 19th, or 20th, or 21st ed.: Method 9222 D.

C) Heterotrophic bacteria.

- i) Pour plate method: Standard Methods, 18th, 19th, or 20th, or 21st ed.: Method 9215 B.

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

- ii) SimPlate method.

D) Turbidity.

7339 BOARD NOTE: Styrene divinyl benzene beads (e.g., AMCO-
 7340 AEPA-1 or equivalent) and stabilized formazin (e.g., Hach
 7341 StablCal™ or equivalent) are acceptable substitutes for formazin.

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 7343
 7344 i) Nephelometric method: Standard Methods, 18th, 19th, ~~or~~
 7345 20th, or 21st ed.: Method 2130 B.
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 7347 ii) Nephelometric method: USEPA Environmental Inorganic
 7348 Methods: Method 180.1
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 7350 iii) GLI Method 2.
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 7352 iv) Hach FilterTrak Method 10133.
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 7354 E) Temperature: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.:
 7355 Method 2550.
 7356

7357 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended
 7358 the entries for total coliforms, fecal coliforms, heterotrophic bacteria, turbidity,
 7359 and temperature at corresponding 40 CFR 141.74(a)(1) to allow the use of
 7360 Standard Methods Online (at www.standardmethods.org), Method 2130 B (as
 7361 approved in 2001); Method 9215 B (as approved in 2000); Method 9221 A, B,
 7362 and C (as approved in 1999); Method 9222 A, B, C, and D (as approved in 1997);
 7363 and Method 9223 B (as approved in 1997). The Board has instead cited to the
 7364 21st edition of Standard Methods for the Examination of Water and Wastewater
 7365 (the printed version of Standard Methods), since the versions of Method 2130,
 7366 Method 9215, Method 9221, Method 9222, and Method 9223 that appear in that
 7367 printed volume are those cited by USEPA as acceptable for use. USEPA later
 7368 added Method 2130 B; Method 9215 B; Method 9221 A, B, C, and E; Method
 7369 9222 A, B, C, and D; and Method 9223 from the 21st edition of Standard Methods
 7370 as an approved alternative method in appendix A to subpart C, added on June 3,
 7371 2008 (at 73 Fed. Reg. 31616).
 7372

- 7373 b) A supplier must measure residual disinfectant concentrations with one of the
 7374 following analytical methods ~~from Standard Methods, 18th, 19th, or 20th ed. (the~~
 7375 ~~method for ozone, Method 4500-O₃B, appears only in the 18th and 19th editions):~~
 7376
 7377 1) Free chlorine.
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 7379 A) Amperometric Titration: ~~Method 4500-ClD.~~
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- i) Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI D.
 - ii) ASTM Method D 1253-03.
 - B) DPD Ferrous Titrimetric: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI F.
 - C) DPD Colimetric: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI G.
 - D) Syringaldazine (FACTS): Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI H.
- 2) Total chlorine.
- A) ~~Amperometric Titration: Method 4500-CI D.~~
 - i) Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI D.
 - ii) ASTM Method D 1253-03.
 - B) Amperometric Titration (low level measurement): Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI E.
 - C) DPD Ferrous Titrimetric: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI F.
 - D) DPD Colimetric: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI G.
 - E) Iodometric Electrode: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CI I.
- 3) Chlorine dioxide.
- A) Amperometric Titration: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-CIO₂ C or E.
 - B) DPD Method: Standard Methods, 18th, 19th or 20th ed.: Method 4500-CIO₂ D.

- 7424 C) Spectrophotometric: USEPA OGWDW Methods, Method 327.0.
7425
7426 4) Ozone: Indigo Method: Standard Methods, 18th, 19th, 20th, or 21st ed.:
7427 Method 4500-O₃ B.
7428
7429 5) Alternative test methods: The Agency may grant a SEP pursuant to
7430 Section 611.110 that allows a supplier to use alternative chlorine test
7431 methods as follows:

7432
7433 A) DPD colorimetric test kits: Residual disinfectant concentrations
7434 for free chlorine and combined chlorine may also be measured by
7435 using DPD colorimetric test kits.

7436
7437 B) Continuous monitoring for free and total chlorine: Free and total
7438 chlorine residuals may be measured continuously by adapting a
7439 specified chlorine residual method for use with a continuous
7440 monitoring instrument, provided the chemistry, accuracy, and
7441 precision remain the same. Instruments used for continuous
7442 monitoring must be calibrated with a grab sample measurement at
7443 least every five days or as otherwise provided by the Agency.

7444
7445 BOARD NOTE: Suppliers may use a five-tube test or a 10-tube
7446 test.

7447
7448 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended
7449 the entries for free chlorine, total chlorine, chlorine dioxide, and ozone at
7450 corresponding 40 CFR 141.74(a)(2) to allow the use of Standard Methods Online
7451 (at www.standardmethods.org), Method 4500-Cl D, E, F, G, and H (as approved
7452 in 2000); Method 4500-ClO₂ C and E (as approved in 2000); and Method 4500-
7453 O₃ B (as approved in 1997). The Board has instead cited to the 21st edition of
7454 Standard Methods for the Examination of Water and Wastewater (the printed
7455 version of Standard Methods), since the versions of Method 4500-Cl, Method
7456 4500-ClO₂, and Method 4500-O₃ that appear in that printed volume are those
7457 cited by USEPA as acceptable for use. USEPA later added Method 4500-Cl D, E,
7458 F, G, and H; Method 4500-ClO₂ C and E; and Method 4500-O₃ B from the 21st
7459 edition of Standard Methods as an approved alternative method in appendix A to
7460 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

7461
7462 BOARD NOTE: Derived from 40 CFR 141.74(a) (2007) and appendix A to 40 CFR
7463 141, as added at 73 Fed. Reg. 31616 (June 3, 2008)(2002).

7464
7465 (Source: Amended at 33 Ill. Reg. _____, effective _____)
7466

7467 SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

7468

7469 **Section 611.600 Applicability**

7470

7471 The following types of suppliers must conduct monitoring to determine compliance with the old
 7472 MCLs in Section 611.300 and the revised MCLs in 611.301, as appropriate, in accordance with
 7473 this Subpart N:

7474

7475 a) CWS suppliers.

7476

7477 b) NTNCWS suppliers.

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7479 c) Transient non-CWS suppliers to determine compliance with the nitrate and nitrite
 7480 MCLs.

7481

7482 d) Detection limits. The following are detection limits for purposes of this Subpart
 7483 N (MCLs from Section 611.301 are set forth for information purposes only):

7484

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	0.010 ⁶	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.00005 ⁷

		Atomic absorption-gaseous hydride technique	0.001
		Inductively-coupled plasma – mass spectrometry	0.0014 ⁸
Asbestos	7 MFL ¹	Transmission electron microscopy	0.01 MFL
Barium	2	Atomic absorption-furnace technique	0.002
		Atomic absorption-direct aspiration technique	0.1
		Inductively-coupled plasma arc furnace	0.002
		Inductively-coupled plasma	0.001
Beryllium	0.004	Atomic absorption-furnace technique	0.0002
		Atomic absorption-furnace technique (stabilized temperature)	0.00002 ⁵
		Inductively-coupled plasma ²	0.0003
		Inductively-coupled plasma – mass spectrometry	0.0003
Cadmium	0.005	Atomic absorption-furnace technique	0.0001
		Inductively-coupled plasma	0.001
Chromium	0.1	Atomic absorption-furnace technique	0.001
		Inductively-coupled plasma	0.007
		Inductively-coupled plasma	0.001

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Cyanide	0.2	Distillation, spectrophotometric ³	0.02
		Automated distillation, spectrophotometric ³	0.005
		Distillation, selective electrode ³	0.05
		Distillation, amenable, spectrophotometric ⁴	0.002
		UV, distillation, spectrophotometric ⁹	0.0005
		<u>Micro distillation, flow injection, Distillation, spectrophotometric³</u>	0.0006
		<u>Ligand exchange with amperometry⁴</u>	<u>0.0005</u>
Mercury	0.002	Manual cold vapor technique	0.0002
		Automated cold vapor technique	0.0002
Nickel	No MCL	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.0006 ⁵
		Inductively-coupled plasma ²	0.005
		Inductively-coupled plasma – mass spectrometry	0.0005
Nitrate (as N)	10	Manual cadmium reduction	0.01

		Automated hydrazine reduction	0.01
		Automated cadmium reduction	0.05
		Ion-selective electrode	1
		Ion chromatography	0.01
		<u>Capillary ion electrophoresis</u>	<u>0.076</u>
Nitrite (as N)	1	Spectrophotometric	0.01
		Automated cadmium reduction	0.05
		Manual cadmium reduction	0.01
		Ion chromatography	0.004
		<u>Capillary ion electrophoresis</u>	<u>0.103</u>
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 2x preconcentration step as noted in Method 200.7. Lower MDLs may be achieved when using a 4x preconcentration.
- ³ Screening method for total cyanides.
- ⁴ Measures "free" cyanides when distillation, digestion, or ligand exchange

is omitted.

- 5 Lower MDLs are reported using stabilized temperature graphite furnace atomic absorption.
- 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 2x 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.
- 9 Measures total cyanides when UV-digester is used, and "free" cyanides when UV-digester is bypassed.

7485
 7486 BOARD NOTE: Subsections (a) through (c) of this Section are derived from 40 CFR 141.23
 7487 preamble (2007)(2003), and subsection (d) of this Section is derived from 40 CFR 141.23
 7488 (a)(4)(i) (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3,
 7489 2008)(2003). See the Board Note at Section 611.301(b) relating to the MCL for nickel.

7490
 7491 (Source: Amended at 33 Ill. Reg. _____, effective _____)
 7492

7493 **Section 611.611 Inorganic Analysis**

7494
 7495 Analytical methods are from documents incorporated by reference in Section 611.102. These are
 7496 mostly referenced by a short name defined by Section 611.102(a). Other abbreviations are
 7497 defined in Section 611.101.

- 7498
- 7499 a) Analysis for the following contaminants must be conducted using the following
 7500 methods or an alternative method approved pursuant to Section 611.480. Criteria
 7501 for analyzing arsenic, chromium, copper, lead, nickel, selenium, sodium, and
 7502 thallium with digestion or directly without digestion, and other analytical
 7503 procedures, are contained in USEPA Technical Notes, incorporated by reference
 7504 in Section 611.102. (~~This document also contains approved analytical test
 7505 methods that remained available for compliance monitoring until July 1, 1996.
 7506 These methods are not available for use after July 1, 1996.~~)
 7507

7508 BOARD NOTE: Because MDLs reported in USEPA Environmental Metals
 7509 Methods 200.7 and 200.9 were determined using a 2x preconcentration step
 7510 during sample digestion, MDLs determined when samples are analyzed by direct
 7511 analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium
 7512 and arsenic by USEPA Environmental Metals Method 200.7, and arsenic by

7513 Standard Methods, 18th, 19th, ~~or 20th~~, or 21st ed., Method 3120 B sample
 7514 preconcentration using pneumatic nebulization may be required to achieve lower
 7515 detection limits. Preconcentration may also be required for direct analysis of
 7516 antimony, lead, and thallium by USEPA Environmental Metals Method 200.9;
 7517 antimony and lead by Standard Methods, 18th, ~~or 19th~~, or 21st ed., Method 3113 B;
 7518 and lead by ASTM Method D3559-96 D or D3559-03 D unless multiple in-
 7519 furnace depositions are made.

7520
 7521 1) Alkalinity.

7522
 7523 A) Titrimetric.

7524
 7525 i) ASTM Method D1067-92 B or D1067-02 B; or

7526
 7527 ii) Standard Methods, 18th, 19th, ~~or 20th~~, or 21st ed.: Method
 7528 2320 B.

7529
 7530 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 7531 11200), USEPA amended the entry for alkalinity by
 7532 titrimetric alkalinity in the table at corresponding 40 CFR
 7533 141.23(k)(1) to allow the use of Standard Methods Online
 7534 (at www.standardmethods.org), Method 2320 B (as
 7535 approved in 1997). The Board has instead cited to the 21st
 7536 edition of Standard Methods for the Examination of Water
 7537 and Wastewater (the printed version of Standard Methods),
 7538 since the version of Method 2320 that appears in that
 7539 printed volume is that cited by USEPA as acceptable for
 7540 use. USEPA later added Method 2320 B from the 21st
 7541 edition of Standard Methods as an approved alternative
 7542 method in appendix A to subpart C, added on June 3, 2008
 7543 (at 73 Fed. Reg. 31616).
 7544

7545 B) Electrometric titration: USGS Methods: Method I-1030-85.

7546
 7547 2) Antimony.

7548
 7549 A) Inductively-coupled plasma – mass spectrometry: USEPA
 7550 Environmental Metals Methods: Method 200.8.

7551
 7552 B) Atomic absorption, hydride technique: ASTM Method D3697-92
 7553 or D3697-02.

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- C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.
- D) Atomic absorption, furnace technique: Standard Methods, 18th, 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for antimony by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- E) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

3) Arsenic.

BOARD NOTE: If ultrasonic nebulization is used in the determination of arsenic by Methods 200.7, 200.8, or Standard Methods, 18th, 19th, or 20th, or 21st ed., 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 µl 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 0.010 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, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for arsenic by inductively-coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method for several other metals in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA, however, did not specifically add Method 2130 B as to arsenic in the June 3, 2008 action.

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

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

D) Atomic absorption, furnace technique.

- i) ASTM Method D2972-97 C or 2972-03 C; or
- ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

7641
7642 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
7643 11200), USEPA amended the entry for arsenic by atomic
7644 absorption, furnace technique, in the table at corresponding
7645 40 CFR 141.23(k)(1) to allow the use of Standard Methods
7646 Online (at www.standardmethods.org), Method 3113 B (as
7647 approved in 1999). The Board has instead cited to the 21st
7648 edition of Standard Methods for the Examination of Water
7649 and Wastewater (the printed version of Standard Methods),
7650 since the version of Method 3113 that appears in that
7651 printed volume is that cited by USEPA as acceptable for
7652 use. USEPA later added Method 3113 B from the 21st
7653 edition of Standard Methods as an approved alternative
7654 method in appendix A to subpart C, added on June 3, 2008
7655 (at 73 Fed. Reg. 31616).
7656

7657 E) Atomic absorption, hydride technique.

7658
7659 i) ASTM Method D2972-97 B or 2972-03 B; or

7660
7661 ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3114
7662 B.
7663

7664 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
7665 11200), USEPA amended the entry for antimony by atomic
7666 absorption, hydride technique, in the table at corresponding
7667 40 CFR 141.23(k)(1) to allow the use of Standard Methods
7668 Online (at www.standardmethods.org), Method 3114 B (as
7669 approved in 1997). The Board has instead cited to the 21st
7670 edition of Standard Methods for the Examination of Water
7671 and Wastewater (the printed version of Standard Methods),
7672 since the version of Method 3114 that appears in that
7673 printed volume is that cited by USEPA as acceptable for
7674 use. USEPA later added Method 3114 B from the 21st
7675 edition of Standard Methods as an approved alternative
7676 method in appendix A to subpart C, added on June 3, 2008
7677 (at 73 Fed. Reg. 31616).
7678

7679 F) Axially viewed inductively-coupled plasma – atomic emission
7680 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.
7681

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 4) Asbestos: Transmission electron microscopy: USEPA Asbestos Methods-100.1 and USEPA Asbestos Methods-100.2.
- 5) Barium.
 - A) Inductively-coupled plasma.
 - i) USEPA Environmental Metals Methods: Method 200.7; or
 - ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for barium by inductively-coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- B) Inductively-coupled plasma – mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.
- C) Atomic absorption, direct aspiration technique: Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3111 D.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for barium by atomic absorption, direct aspiration technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 D (as approved in 1999). The Board has instead cited to the 21st edition of Standard

Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- D) Atomic absorption, furnace technique: Standard Methods, 18th, 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for barium by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- E) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 6) Beryllium.

- A) Inductively-coupled plasma.

- i) USEPA Environmental Metals Methods: Method 200.7; or
 ii) Standard Methods, 18th, 19th, ~~or 20th~~, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for beryllium by

7768 inductively-coupled plasma in the table at corresponding 40
 7769 CFR 141.23(k)(1) to allow the use of Standard Methods
 7770 Online (at www.standardmethods.org), Method 3120 B (as
 7771 approved in 1999). The Board has instead cited to the 21st
 7772 edition of Standard Methods for the Examination of Water
 7773 and Wastewater (the printed version of Standard Methods),
 7774 since the version of Method 3120 that appears in that
 7775 printed volume is that cited by USEPA as acceptable for
 7776 use. USEPA later added Method 3120 B from the 21st
 7777 edition of Standard Methods as an approved alternative
 7778 method in appendix A to subpart C, added on June 3, 2008
 7779 (at 73 Fed. Reg. 31616).

7780
 7781 B) Inductively-coupled plasma – mass spectrometry: USEPA
 7782 Environmental Metals Methods: Method 200.8.

7783
 7784 C) Atomic absorption, platform furnace technique: USEPA
 7785 Environmental Metals Methods: Method 200.9.

7786
 7787 D) Atomic absorption, furnace technique.

7788
 7789 i) ASTM Method D3645-97 B or D3645-03 B; or

7790
 7791 ii) Standard Methods, 18th, ~~19th~~, or 21st ed.: Method 3113
 7792 B.

7793
 7794 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 7795 11200), USEPA amended the entry for beryllium by atomic
 7796 absorption, furnace technique, in the table at corresponding
 7797 40 CFR 141.23(k)(1) to allow the use of Standard Methods
 7798 Online (at www.standardmethods.org), Method 3113 B (as
 7799 approved in 1999). The Board has instead cited to the 21st
 7800 edition of Standard Methods for the Examination of Water
 7801 and Wastewater (the printed version of Standard Methods),
 7802 since the version of Method 3113 that appears in that
 7803 printed volume is that cited by USEPA as acceptable for
 7804 use. USEPA later added Method 3113 B from the 21st
 7805 edition of Standard Methods as an approved alternative
 7806 method in appendix A to subpart C, added on June 3, 2008
 7807 (at 73 Fed. Reg. 31616).

7808
 7809 E) Axially viewed inductively-coupled plasma – atomic emission
 7810 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

7) Cadmium.

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

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

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

D) Atomic absorption, furnace technique: Standard Methods, 18th, or 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for cadmium by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

8) Calcium.

A) EDTA titrimetric.

- 7854
7855 i) ASTM Method D511-93 A or D511-03 A; or
7856
7857 ii) Standard Methods, 18th ~~or~~, 19th, ~~or~~ 20th ed.: Method 3500-
7858 Ca D or Standard Methods, 20th or 21st ed.: Method 3500-
7859 Ca B.

7860
7861 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
7862 11200), USEPA amended the entry for calcium by EDTA
7863 titrimetric in the table at corresponding 40 CFR
7864 141.23(k)(1) to allow the use of Standard Methods Online
7865 (at www.standardmethods.org), Method 3500-Ca D (as
7866 approved in 1997). The Board has instead cited to the 21st
7867 edition of Standard Methods for the Examination of Water
7868 and Wastewater (the printed version of Standard Methods),
7869 since the version of Method 3500-Ca that appears in that
7870 printed volume is that cited by USEPA as acceptable for
7871 use. USEPA later added Method 3500-Ca B from the 21st
7872 edition of Standard Methods as an approved alternative
7873 method in appendix A to subpart C, added on June 3, 2008
7874 (at 73 Fed. Reg. 31616).

7875
7876 B) Atomic absorption, direct aspiration.

- 7877
7878 i) ASTM Method D511-93 B or D511-03 B; or
7879
7880 ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3111
7881 B.

7882
7883 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
7884 11200), USEPA amended the entry for calcium by atomic
7885 absorption, direct aspiration, in the table at corresponding
7886 40 CFR 141.23(k)(1) to allow the use of Standard Methods
7887 Online (at www.standardmethods.org), Method 3111 B (as
7888 approved in 1999). The Board has instead cited to the 21st
7889 edition of Standard Methods for the Examination of Water
7890 and Wastewater (the printed version of Standard Methods),
7891 since the version of Method 3111 that appears in that
7892 printed volume is that cited by USEPA as acceptable for
7893 use. USEPA later added Method 3111 B from the 21st
7894 edition of Standard Methods as an approved alternative
7895 method in appendix A to subpart C, added on June 3, 2008
7896 (at 73 Fed. Reg. 31616).

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- C) Inductively-coupled plasma.
 - i) USEPA Environmental Metals Methods: Method 200.7; or
 - ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for calcium by inductively-coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- D) Ion chromatography: ASTM Method D6919-03.
- E) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 9) Chromium.
 - A) Inductively-coupled plasma.
 - i) USEPA Environmental Metals Methods: Method 200.7; or
 - ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for chromium by

7940 inductively-coupled plasma in the table at corresponding 40
 7941 CFR 141.23(k)(1) to allow the use of Standard Methods
 7942 Online (at www.standardmethods.org), Method 3120 B (as
 7943 approved in 1999). The Board has instead cited to the 21st
 7944 edition of Standard Methods for the Examination of Water
 7945 and Wastewater (the printed version of Standard Methods),
 7946 since the version of Method 3120 that appears in that
 7947 printed volume is that cited by USEPA as acceptable for
 7948 use. USEPA later added Method 3120 B from the 21st
 7949 edition of Standard Methods as an approved alternative
 7950 method in appendix A to subpart C, added on June 3, 2008
 7951 (at 73 Fed. Reg. 31616).

7952
 7953 B) Inductively-coupled plasma – mass spectrometry: USEPA
 7954 Environmental Metals Methods: Method 200.8.

7955
 7956 C) Atomic absorption, platform furnace technique: USEPA
 7957 Environmental Metals Methods: Method 200.9.

7958
 7959 D) Atomic absorption, furnace technique: Standard Methods, 18th, or
 7960 19th, or 21st ed.: Method 3113 B.

7961
 7962 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 7963 USEPA amended the entry for chromium by atomic absorption,
 7964 furnace technique, in the table at corresponding 40 CFR
 7965 141.23(k)(1) to allow the use of Standard Methods Online (at
 7966 www.standardmethods.org), Method 3113 B (as approved in
 7967 1999). The Board has instead cited to the 21st edition of Standard
 7968 Methods for the Examination of Water and Wastewater (the
 7969 printed version of Standard Methods), since the version of Method
 7970 3113 that appears in that printed volume is that cited by USEPA as
 7971 acceptable for use. USEPA later added Method 3113 B from the
 7972 21st edition of Standard Methods as an approved alternative
 7973 method in appendix A to subpart C, added on June 3, 2008 (at 73
 7974 Fed. Reg. 31616).

7975
 7976 E) Axially viewed inductively-coupled plasma – atomic emission
 7977 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

7978
 7979 BOARD NOTE: USEPA added this method as an approved
 7980 alternative method in appendix A to subpart C of 40 CFR 141,
 7981 added on June 3, 2008 (at 73 Fed. Reg. 31616).
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10) Copper.

A) Atomic absorption, furnace technique.

- i) ASTM Method D1688-95 C or D1688-02 C; or
- ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for copper by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Atomic absorption, direct aspiration.

- i) ASTM Method D1688-95 A or 1688-02 A; or
- ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3111 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for copper by atomic absorption, direct aspiration, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 B from the 21st edition of Standard Methods as an approved alternative

method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- C) Inductively-coupled plasma.
 - i) USEPA Environmental Metals Methods: Method 200.7; or
 - ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for copper by inductively-coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 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.

- F) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 11) Conductivity; Conductance.

- A) ASTM Method D1125-95(1999) A; or

- B) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 2510 B.

8069
8070 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
8071 USEPA amended the entry for conductivity by conductance in the
8072 table at corresponding 40 CFR 141.23(k)(1) to allow the use of
8073 Standard Methods Online (at www.standardmethods.org), Method
8074 2510 B (as approved in 1997). The Board has instead cited to the
8075 21st edition of Standard Methods for the Examination of Water and
8076 Wastewater (the printed version of Standard Methods), since the
8077 version of Method 2510 that appears in that printed volume is that
8078 cited by USEPA as acceptable for use. USEPA later added
8079 Method 2510 B from the 21st edition of Standard Methods as an
8080 approved alternative method in appendix A to subpart C, added on
8081 June 3, 2008 (at 73 Fed. Reg. 31616).

8082
8083 12) Cyanide.

8084
8085 A) Manual distillation (ASTM Method D2036-98 A or Standard
8086 Methods, 18th, 19th, or 20th ed.: Method 4500-CN C), followed by
8087 spectrophotometric, amenable.

8088
8089 i) ASTM Method D2036-98 B or 2036-06 B; or

8090
8091 BOARD NOTE: USEPA added ASTM Method 2036-06 A
8092 as an approved alternative method in appendix A to subpart
8093 C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg.
8094 31616).

8095
8096 ii) Standard Methods, 18th, 19th, or 20th, or 21st ed.: Method
8097 4500-CN G.

8098
8099 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8100 11200), USEPA amended the entry for cyanide by
8101 spectrophotometric, amenable, in the table at corresponding
8102 40 CFR 141.23(k)(1) to allow the use of Standard Methods
8103 Online (at www.standardmethods.org), Method 4500-CN
8104 G (as approved in 1999). The Board has instead cited to
8105 the 21st edition of Standard Methods for the Examination of
8106 Water and Wastewater (the printed version of Standard
8107 Methods), since the version of Method 4500-CN that
8108 appears in that printed volume is that cited by USEPA as
8109 acceptable for use. USEPA later added Method 4500-CN
8110 G from the 21st edition of Standard Methods as an approved

8111 alternative method in appendix A to subpart C, added on
8112 June 3, 2008 (at 73 Fed. Reg. 31616).

8113
8114 B) Manual distillation (ASTM Method D2036-98 A or Standard
8115 Methods, 18th, 19th, or 20th ed.: Method 4500-CN C), followed
8116 by spectrophotometric, manual.

8117
8118 i) ASTM Method D2036-98 A or 2036-06 A;

8119
8120 ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
8121 4500-CN E; or

8122
8123 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8124 11200), USEPA amended the entry for cyanide by
8125 spectrophotometric, manual, in the table at corresponding
8126 40 CFR 141.23(k)(1) to allow the use of Standard Methods
8127 Online (at www.standardmethods.org), Method 4500-CN
8128 E (as approved in 1999). The Board has instead cited to the
8129 21st edition of Standard Methods for the Examination of
8130 Water and Wastewater (the printed version of Standard
8131 Methods), since the version of Method 4500-CN that
8132 appears in that printed volume is that cited by USEPA as
8133 acceptable for use. USEPA later added Method 4500-CN
8134 E from the 21st edition of Standard Methods as an approved
8135 alternative method in appendix A to subpart C, added on
8136 June 3, 2008 (at 73 Fed. Reg. 31616).

8137
8138 iii) USGS Methods: Method I-3300-85.

8139
8140 C) Spectrophotometric, semiautomated; Manual distillation (ASTM
8141 Method D2036-98 A or Standard Methods, 18th, 19th, or 20th ed.:
8142 Method 4500-CN C), followed by semiautomated
8143 spectrophotometric; USEPA Environmental Inorganic Methods:
8144 Method 335.4.

8145
8146 D) Selective electrode: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st
8147 ed.: Method 4500-CN F.

8148
8149 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
8150 USEPA amended the entry for cyanide by selective electrode in the
8151 table at corresponding 40 CFR 141.23(k)(1) to allow the use of
8152 Standard Methods Online (at www.standardmethods.org), Method
8153 4500-CN F (as approved in 1999). The Board has instead cited to

8154 the 21st edition of Standard Methods for the Examination of Water
8155 and Wastewater (the printed version of Standard Methods), since
8156 the version of Method 4500-CN that appears in that printed
8157 volume is that cited by USEPA as acceptable for use. USEPA
8158 later added Method 4500-CN F from the 21st edition of Standard
8159 Methods as an approved alternative method in appendix A to
8160 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 8161
- 8162 E) UV/Distillation/Spectrophotometric: Kelada 01.
- 8163
- 8164 F) Microdistillation/Flow Injection/Spectrophotometric:
8165 Distillation/Spectrophotometric: QuickChem 10-204-00-1-X.
- 8166
- 8167 G) Ligand exchange and amperometry.
- 8168
- 8169 i) ASTM Method D6888-03.
- 8170
- 8171 ii) OI Analytical Method OIA-1677 DW.

8172

8173 13) Fluoride.

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- 8175 A) Ion Chromatography.
- 8176
- 8177 i) USEPA Environmental Inorganic Methods: Method 300.0
8178 or Method 300.1;
- 8179
- 8180 ii) ASTM Method D4327-97 or D4327-03; or
- 8181
- 8182 iii) Standard Methods, 18th, 19th, ~~20th~~, or 21st ed.: Method
8183 4110 B.

8184

8185 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8186 11200), USEPA amended the entry for fluoride by ion
8187 chromatography in the table at corresponding 40 CFR
8188 141.23(k)(1) to allow the use of Standard Methods Online
8189 (at www.standardmethods.org), Method 4110 B (as
8190 approved in 2000). The Board has instead cited to the 21st
8191 edition of Standard Methods for the Examination of Water
8192 and Wastewater (the printed version of Standard Methods),
8193 since the version of Method 4110 that appears in that
8194 printed volume is that cited by USEPA as acceptable for
8195 use. USEPA later added Method 4110 B from the 21st
8196 edition of Standard Methods as an approved alternative

8197 method in appendix A to subpart C, added on June 3, 2008
8198 (at 73 Fed. Reg. 31616).

- 8199
8200 B) Manual distillation, colorimetric SPADNS: Standard Methods,
8201 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-F⁻ B and D.

8202
8203 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
8204 USEPA amended the entry for fluoride by manual distillation,
8205 colorimetry SPADNS, in the table at corresponding 40 CFR
8206 141.23(k)(1) to allow the use of Standard Methods Online (at
8207 www.standardmethods.org), Method 4500-F⁻ B and D (as
8208 approved in 1997). The Board has instead cited to the 21st edition
8209 of Standard Methods for the Examination of Water and
8210 Wastewater (the printed version of Standard Methods), since the
8211 version of Method 4500-F⁻ that appears in that printed volume is
8212 that cited by USEPA as acceptable for use. USEPA later added
8213 Method 4500-F⁻ B and D from the 21st edition of Standard
8214 Methods as an approved alternative method in appendix A to
8215 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 8216
8217 C) Manual electrode.

- 8218
8219 i) ASTM Method D1179-93 B, D1179-99 B, or D1179-04 B;
8220 or

8221
8222 BOARD NOTE: USEPA added ASTM Method D1179-04
8223 B as an approved alternative method in appendix A to
8224 subpart C of 40 CFR 141, added on June 3, 2008 (at 73
8225 Fed. Reg. 31616).

- 8226
8227 ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
8228 4500-F⁻ C.

8229
8230 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8231 11200), USEPA amended the entry for fluoride by manual
8232 electrode in the table at corresponding 40 CFR
8233 141.23(k)(1) to allow the use of Standard Methods Online
8234 (at www.standardmethods.org), Method 4500-F⁻ C (as
8235 approved in 1997). The Board has instead cited to the 21st
8236 edition of Standard Methods for the Examination of Water
8237 and Wastewater (the printed version of Standard Methods),
8238 since the version of Method 4500-F⁻ that appears in that
8239 printed volume is that cited by USEPA as acceptable for

8240 use. USEPA later added Method 4500-F⁻ C from the 21st
8241 edition of Standard Methods as an approved alternative
8242 method in appendix A to subpart C, added on June 3, 2008
8243 (at 73 Fed. Reg. 31616).
8244

8245 D) Automated electrode: Technicon Methods: Method 380-75WE.

8246
8247 E) Automated alizarin.

8248
8249 i) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
8250 4500-F⁻ E; or
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8252 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8253 11200), USEPA amended the entry for fluoride by
8254 automated alizarin in the table at corresponding 40 CFR
8255 141.23(k)(1) to allow the use of Standard Methods Online
8256 (at www.standardmethods.org), Method 4500-F⁻ E (as
8257 approved in 1997). The Board has instead cited to the 21st
8258 edition of Standard Methods for the Examination of Water
8259 and Wastewater (the printed version of Standard Methods),
8260 since the version of Method 4500-F⁻ that appears in that
8261 printed volume is that cited by USEPA as acceptable for
8262 use. USEPA later added Method 4500-F⁻ E from the 21st
8263 edition of Standard Methods as an approved alternative
8264 method in appendix A to subpart C, added on June 3, 2008
8265 (at 73 Fed. Reg. 31616).
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8267 ii) Technicon Methods: Method 129-71W.

8268
8269 F) Capillary ion electrophoresis: ASTM Method D6508-00(2005)e2
8270 (rev. 2).

8271
8272 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
8273 USEPA amended the entry for fluoride to add capillary ion
8274 electrophoresis in the table at corresponding 40 CFR 141.23(k)(1)
8275 to allow the use of "Waters Method D6508, Rev. 2." The Board
8276 attempt to locate a copy of the method disclosed that it is an
8277 ASTM method originally approved in 2000 and revised in 2005.
8278 The Board has cited to the ASTM Method D6508-00(2005)e2.
8279

8280 14) Lead.

8281
8282 A) Atomic absorption, furnace technique.

- 8283
8284 i) ASTM Method D3559-96 D or D3559-03 D; or
8285
8286 ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113
8287 B.
8288

8289 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8290 11200), USEPA amended the entry for lead by atomic
8291 absorption, furnace technique, in the table at corresponding
8292 40 CFR 141.23(k)(1) to allow the use of Standard Methods
8293 Online (at www.standardmethods.org), Method 3113 B (as
8294 approved in 1999). The Board has instead cited to the 21st
8295 edition of Standard Methods for the Examination of Water
8296 and Wastewater (the printed version of Standard Methods),
8297 since the version of Method 3113 that appears in that
8298 printed volume is that cited by USEPA as acceptable for
8299 use. USEPA later added Method 3113 B from the 21st
8300 edition of Standard Methods as an approved alternative
8301 method in appendix A to subpart C, added on June 3, 2008
8302 (at 73 Fed. Reg. 31616).
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8304 B) Inductively-coupled plasma – mass spectrometry: USEPA
8305 Environmental Metals Methods: Method 200.8.

8306
8307 C) Atomic absorption, platform furnace technique: USEPA
8308 Environmental Metals Methods: Method 200.9.

8309
8310 D) Differential Pulse Anodic Stripping Voltammetry: Palintest
8311 Method 1001.

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8313 E) Axially viewed inductively-coupled plasma – atomic emission
8314 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.
8315

8316 BOARD NOTE: USEPA added this method as an approved
8317 alternative method in appendix A to subpart C of 40 CFR 141,
8318 added on June 3, 2008 (at 73 Fed. Reg. 31616).
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8320 15) Magnesium.

8321
8322 A) Atomic absorption.

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8324 i) ASTM Method D511-93 B or D511-03 B; or
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- ii) Standard Methods, 18th, ~~19th~~, or 21st ed.: Method 3111 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for magnesium by atomic absorption in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Inductively-coupled plasma.

- i) USEPA Environmental Metals Methods: Method 200.7; or
- ii) Standard Methods, 18th, 19th, ~~20th~~, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for magnesium by inductively-coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) Complexation titrimetric.

- i) ASTM Method D511-93 A or D511-03 A; or

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- ii) Standard Methods, 18th or 19th ed.: Method 3500-Mg E or Standard Methods, 20th or 21st ed.: Method 3500-Mg B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for magnesium by complexation titrimetric in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3500-Mg B (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3500-Mg that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3500-Mg B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- iii) ~~Standard Methods, 20th ed.: Method 3500-Mg B.~~

D) Ion chromatography: ASTM Method D6919-03.

E) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

16) Mercury.

A) Manual cold vapor technique.

- i) USEPA Environmental Metals Methods: Method 245.1;
- ii) ASTM Method D3223-97 or D3223-02; or
- iii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3112 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for mercury by manual

8412 cold vapor technique in the table at corresponding 40 CFR
8413 141.23(k)(1) to allow the use of Standard Methods Online
8414 (at www.standardmethods.org), Method 3112 B (as
8415 approved in 1999). The Board has instead cited to the 21st
8416 edition of Standard Methods for the Examination of Water
8417 and Wastewater (the printed version of Standard Methods),
8418 since the version of Method 3112 that appears in that
8419 printed volume is that cited by USEPA as acceptable for
8420 use. USEPA later added Method 3112 B from the 21st
8421 edition of Standard Methods as an approved alternative
8422 method in appendix A to subpart C, added on June 3, 2008
8423 (at 73 Fed. Reg. 31616).

8424
8425 B) Automated cold vapor technique: USEPA Inorganic Methods:
8426 Method 245.2.

8427
8428 C) Inductively-coupled plasma – mass spectrometry: USEPA
8429 Environmental Metals Methods: Method 200.8.

8430
8431 17) Nickel.

8432
8433 A) Inductively-coupled plasma.

8434
8435 i) USEPA Environmental Metals Methods: Method 200.7; or

8436
8437 ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
8438 3120 B.

8439
8440 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8441 11200), USEPA amended the entry for nickel by
8442 inductively-coupled plasma in the table at corresponding 40
8443 CFR 141.23(k)(1) to allow the use of Standard Methods
8444 Online (at www.standardmethods.org), Method 3120 B (as
8445 approved in 1999). The Board has instead cited to the 21st
8446 edition of Standard Methods for the Examination of Water
8447 and Wastewater (the printed version of Standard Methods),
8448 since the version of Method 3120 that appears in that
8449 printed volume is that cited by USEPA as acceptable for
8450 use. USEPA later added Method 3120 B from the 21st
8451 edition of Standard Methods as an approved alternative
8452 method in appendix A to subpart C, added on June 3, 2008
8453 (at 73 Fed. Reg. 31616).
8454

- 8455 B) Inductively-coupled plasma – mass spectrometry: USEPA
 8456 Environmental Metals Methods: Method 200.8.
 8457
- 8458 C) Atomic absorption, platform furnace technique: USEPA
 8459 Environmental Metals Methods: Method 200.9.
 8460
- 8461 D) Atomic absorption, direct aspiration technique: Standard Methods,
 8462 18th, or 19th, or 21st ed.: Method 3111 B.
 8463
- 8464 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 8465 USEPA amended the entry for nickel by atomic absorption, direct
 8466 aspiration technique, in the table at corresponding 40 CFR
 8467 141.23(k)(1) to allow the use of Standard Methods Online (at
 8468 www.standardmethods.org), Method 3111 B (as approved in
 8469 1999). The Board has instead cited to the 21st edition of Standard
 8470 Methods for the Examination of Water and Wastewater (the
 8471 printed version of Standard Methods), since the version of Method
 8472 3111 that appears in that printed volume is that cited by USEPA as
 8473 acceptable for use. USEPA later added Method 3111 B from the
 8474 21st edition of Standard Methods as an approved alternative
 8475 method in appendix A to subpart C, added on June 3, 2008 (at 73
 8476 Fed. Reg. 31616).
 8477
- 8478 E) Atomic absorption, furnace technique: Standard Methods, 18th, or
 8479 19th, or 21st ed.: Method 3113 B.
 8480
- 8481 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 8482 USEPA amended the entry for nickel by atomic absorption,
 8483 furnace technique, in the table at corresponding 40 CFR
 8484 141.23(k)(1) to allow the use of Standard Methods Online (at
 8485 www.standardmethods.org), Method 3113 B (as approved in
 8486 1999). The Board has instead cited to the 21st edition of Standard
 8487 Methods for the Examination of Water and Wastewater (the
 8488 printed version of Standard Methods), since the version of Method
 8489 3113 that appears in that printed volume is that cited by USEPA as
 8490 acceptable for use. USEPA later added Method 3113 B from the
 8491 21st edition of Standard Methods as an approved alternative
 8492 method in appendix A to subpart C, added on June 3, 2008 (at 73
 8493 Fed. Reg. 31616).
 8494
- 8495 F) Axially viewed inductively-coupled plasma – atomic emission
 8496 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.
 8497

8498 BOARD NOTE: USEPA added this method as an approved
 8499 alternative method in appendix A to subpart C of 40 CFR 141,
 8500 added on June 3, 2008 (at 73 Fed. Reg. 31616).

8501
 8502 18) Nitrate.

8503
 8504 A) Ion chromatography.

8505
 8506 i) USEPA Environmental Inorganic Methods: Method 300.0
 8507 or Method 300.1;

8508
 8509 ii) ASTM Method D4327-97 or D4327-03;

8510
 8511 iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
 8512 4110 B; or

8513
 8514 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 8515 11200), USEPA amended the entry for nitrate by ion
 8516 chromatography in the table at corresponding 40 CFR
 8517 141.23(k)(1) to allow the use of Standard Methods Online
 8518 (at www.standardmethods.org), Method 4110 B (as
 8519 approved in 2000). The Board has instead cited to the 21st
 8520 edition of Standard Methods for the Examination of Water
 8521 and Wastewater (the printed version of Standard Methods),
 8522 since the version of Method 4110 that appears in that
 8523 printed volume is that cited by USEPA as acceptable for
 8524 use. USEPA later added Method 4110 B from the 21st
 8525 edition of Standard Methods as an approved alternative
 8526 method in appendix A to subpart C, added on June 3, 2008
 8527 (at 73 Fed. Reg. 31616).

8528
 8529 iv) Waters Test Method B-1011, available from Millipore
 8530 Corporation.

8531
 8532 B) Automated cadmium reduction.

8533
 8534 i) USEPA Environmental Inorganic Methods: Method 353.2;

8535
 8536 ii) ASTM Method D3867-90 A; or

8537
 8538 iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
 8539 4500-NO₃⁻ F.
 8540

8541 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 8542 11200), USEPA amended the entry for nitrate by
 8543 automated cadmium reduction in the table at corresponding
 8544 40 CFR 141.23(k)(1) to allow the use of Standard Methods
 8545 Online (at www.standardmethods.org), Method 4500-NO₃⁻
 8546 F (as approved in 2000). The Board has instead cited to the
 8547 21st edition of Standard Methods for the Examination of
 8548 Water and Wastewater (the printed version of Standard
 8549 Methods), since the version of Method 4500-NO₃⁻ that
 8550 appears in that printed volume is that cited by USEPA as
 8551 acceptable for use. USEPA later added Method 4500-NO₃⁻
 8552 F from the 21st edition of Standard Methods as an approved
 8553 alternative method in appendix A to subpart C, added on
 8554 June 3, 2008 (at 73 Fed. Reg. 31616).
 8555

8556 C) Ion selective electrode.

- 8557
 8558 i) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
 8559 4500-NO₃⁻ D; or
 8560

8561 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 8562 11200), USEPA amended the entry for nitrate by ion
 8563 selective electrode in the table at corresponding 40 CFR
 8564 141.23(k)(1) to allow the use of Standard Methods Online
 8565 (at www.standardmethods.org), Method 4500-NO₃⁻ D (as
 8566 approved in 2000). The Board has instead cited to the 21st
 8567 edition of Standard Methods for the Examination of Water
 8568 and Wastewater (the printed version of Standard Methods),
 8569 since the version of Method 4500-NO₃⁻ that appears in that
 8570 printed volume is that cited by USEPA as acceptable for
 8571 use. USEPA later added Method 4500-NO₃⁻ D from the
 8572 21st edition of Standard Methods as an approved alternative
 8573 method in appendix A to subpart C, added on June 3, 2008
 8574 (at 73 Fed. Reg. 31616).
 8575

- 8576 ii) Technical Bulletin 601.
 8577

8578 D) Manual cadmium reduction.

- 8579
 8580 i) ASTM Method D3867-90 B; or
 8581
 8582 ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
 8583 4500-NO₃⁻ E.

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BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate by manual cadmium reduction in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-NO₃⁻ E (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-NO₃⁻ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-NO₃⁻ E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- E) Capillary ion electrophoresis: ASTM Method D6508-00(2005)e2 (rev. 2).

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of "Waters Method D6508, Rev. 2." The Board attempt to locate a copy of the method disclosed that it is an ASTM method originally approved in 2000 and revised in 2005. The Board has cited to the ASTM Method D6508-00(2005)e2.

19) Nitrite.

- A) Ion chromatography.
 - i) USEPA Environmental Inorganic Methods: Method 300.0 or Method 300.1;
 - ii) ASTM Method D4327-97 or D4327-03;
 - iii) Standard Methods, 18th, 19th, or 20th, or 21st ed.: Method 4110 B; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrite by ion chromatography in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online

(at www.standardmethods.org), Method 4110 B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4110 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4110 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

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, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-NO₃⁻ F.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrite by automated cadmium reduction in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-NO₃⁻ F (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-NO₃⁻ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-NO₃⁻ F from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) Manual cadmium reduction.

i) ASTM Method D3867-90 B; or

- 8669 ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
 8670 4500-NO₃⁻ E.
 8671

8672 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 8673 11200), USEPA amended the entry for nitrite by manual
 8674 cadmium reduction in the table at corresponding 40 CFR
 8675 141.23(k)(1) to allow the use of Standard Methods Online
 8676 (at www.standardmethods.org), Method 4500-NO₃⁻ E (as
 8677 approved in 2000). The Board has instead cited to the 21st
 8678 edition of Standard Methods for the Examination of Water
 8679 and Wastewater (the printed version of Standard Methods),
 8680 since the version of Method 4500-NO₃⁻ that appears in that
 8681 printed volume is that cited by USEPA as acceptable for
 8682 use. USEPA later added Method 4500-NO₃⁻ E from the
 8683 21st edition of Standard Methods as an approved alternative
 8684 method in appendix A to subpart C, added on June 3, 2008
 8685 (at 73 Fed. Reg. 31616).
 8686

- 8687 D) Spectrophotometric: Standard Methods, 18th, 19th, ~~or~~ 20th or 21st
 8688 ed.: Method 4500-NO₂⁻ B.
 8689

8690 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 8691 USEPA amended the entry for nitrite by spectrophotometric in the
 8692 table at corresponding 40 CFR 141.23(k)(1) to allow the use of
 8693 Standard Methods Online (at www.standardmethods.org), Method
 8694 4500-NO₂⁻ B (as approved in 2000). The Board has instead cited
 8695 to the 21st edition of Standard Methods for the Examination of
 8696 Water and Wastewater (the printed version of Standard Methods),
 8697 since the version of Method 4500-NO₂⁻ that appears in that printed
 8698 volume is that cited by USEPA as acceptable for use. USEPA
 8699 later added Method 4500-NO₂⁻ B from the 21st edition of Standard
 8700 Methods as an approved alternative method in appendix A to
 8701 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
 8702

- 8703 E) Capillary ion electrophoresis: ASTM Method D6508-00(2005)e2
 8704 (rev. 2).
 8705

8706 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 8707 USEPA amended the entry for nitrite to add capillary ion
 8708 electrophoresis in the table at corresponding 40 CFR 141.23(k)(1)
 8709 to allow the use of "Waters Method D6508, Rev. 2." The Board
 8710 attempt to locate a copy of the method disclosed that it is an

8711 ASTM method originally approved in 2000 and revised in 2005.
8712 The Board has cited to the ASTM Method D6508-00(2005)e2.

8713
8714 20) Orthophosphate (unfiltered, without digestion or hydrolysis).

8715
8716 A) Automated colorimetric, ascorbic acid.

8717
8718 i) USEPA Environmental Inorganic Methods: Method 365.1;
8719 or

8720
8721 ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
8722 4500-P F.

8723
8724 BOARD NOTE: USEPA added Method 4500-P F from the
8725 21st edition of Standard Methods as an approved alternative
8726 method in appendix A to subpart C of 40 CFR 141, added
8727 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA also
8728 added Method 4500-P F (as approved in 1999) as available
8729 from Standard Methods Online (at
8730 www.standardmethods.org). The Board has instead cited
8731 only to the 21st edition of Standard Methods for the
8732 Examination of Water and Wastewater (the printed version
8733 of Standard Methods), since the version of Method 4500-P
8734 F that appears in the printed volume is the 1999 version
8735 available from the online source.

8736
8737 B) Single reagent colorimetric, ascorbic acid.

8738
8739 i) ASTM Method D515-88 A; or

8740
8741 ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
8742 4500-P E.

8743
8744 BOARD NOTE: USEPA added Method 4500-P E from
8745 the 21st edition of Standard Methods as an approved
8746 alternative method in appendix A to subpart C of 40 CFR
8747 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).
8748 USEPA also added Method 4500-P E (as approved in
8749 1999) as available from Standard Methods Online (at
8750 www.standardmethods.org). The Board has instead cited
8751 only to the 21st edition of Standard Methods for the
8752 Examination of Water and Wastewater (the printed version
8753 of Standard Methods), since the version of Method 4500-P

8754 E that appears in the printed volume is the 1999 version
8755 available from the online source.

8756
8757 C) Colorimetric, phosphomolybdate: USGS Methods: Method I-
8758 1601-85.

8759
8760 D) Colorimetric, phosphomolybdate, automated-segmented flow:
8761 USGS Methods: Method I-2601-90.

8762
8763 E) Colorimetric, phosphomolybdate, automated discrete: USGS
8764 Methods: Method I-2598-85.

8765
8766 F) Ion Chromatography.

8767
8768 i) USEPA Environmental Inorganic Methods: Method 300.0
8769 or Method 300.1;

8770
8771 ii) ASTM Method D4327-97 or D4327-03; or

8772
8773 iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method
8774 4110 B.

8775
8776 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8777 11200), USEPA amended the entry for orthophosphate by
8778 ion chromatography in the table at corresponding 40 CFR
8779 141.23(k)(1) to allow the use of Standard Methods Online
8780 (at www.standardmethods.org), Method 4110 B (as
8781 approved in 2000). The Board has instead cited to the 21st
8782 edition of Standard Methods for the Examination of Water
8783 and Wastewater (the printed version of Standard Methods),
8784 since the version of Method 4110 that appears in that
8785 printed volume is that cited by USEPA as acceptable for
8786 use. USEPA later added Method 4110 B from the 21st
8787 edition of Standard Methods as an approved alternative
8788 method in appendix A to subpart C, added on June 3, 2008
8789 (at 73 Fed. Reg. 31616).

8790
8791 G) Capillary ion electrophoresis: Waters Method D6508, rev. 2.

8792
8793 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
8794 USEPA amended the entry for orthophosphate to add capillary ion
8795 electrophoresis in the table at corresponding 40 CFR 141.23(k)(1)
8796 to allow the use of "Waters Method D6508, Rev. 2." The Board

8797 attempt to locate a copy of the method disclosed that it is an
8798 ASTM method originally approved in 2000 and revised in 2005.
8799 The Board has cited to the ASTM Method D6508-00(2005)e2.
8800

8801 21) pH: electrometric.

8802
8803 A) Electrometric.

8804
8805 Ai) USEPA Inorganic Methods: Method 150.1 or Method 150.2;

8806
8807 Bi) ASTM Method D1293-95 or D1293-99; or

8808
8809 Ciii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-
8810 H⁺4500-H+ B.

8811
8812 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
8813 USEPA amended the entry for pH by electrometric in the table at
8814 corresponding 40 CFR 141.23(k)(1) to allow the use of Standard
8815 Methods Online (at www.standardmethods.org), Method 4500-H⁺
8816 B (as approved in 2000). The Board has instead cited to the 21st
8817 edition of Standard Methods for the Examination of Water and
8818 Wastewater (the printed version of Standard Methods), since the
8819 version of Method 4500-H⁺ that appears in that printed volume is
8820 that cited by USEPA as acceptable for use. USEPA later added
8821 Method 4500-H⁺ B from the 21st edition of Standard Methods as
8822 an approved alternative method in appendix A to subpart C, added
8823 on June 3, 2008 (at 73 Fed. Reg. 31616).

8824
8825 B) USEPA Inorganic Methods: Method 150.2.

8826
8827 22) Selenium.

8828
8829 A) Atomic absorption, hydride.

8830
8831 i) ASTM Method D3859-98 A or D3859-03 A; or

8832
8833 ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3114
8834 B.

8835
8836 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8837 11200), USEPA amended the entry for selenium by atomic
8838 absorption, hydride, in the table at corresponding 40 CFR
8839 141.23(k)(1) to allow the use of Standard Methods Online

8840 (at www.standardmethods.org), Method 3114 B (as
8841 approved in 1997). The Board has instead cited to the 21st
8842 edition of Standard Methods for the Examination of Water
8843 and Wastewater (the printed version of Standard Methods),
8844 since the version of Method 3114 that appears in that
8845 printed volume is that cited by USEPA as acceptable for
8846 use. USEPA later added Method 3114 B from the 21st
8847 edition of Standard Methods as an approved alternative
8848 method in appendix A to subpart C, added on June 3, 2008
8849 (at 73 Fed. Reg. 31616).

8850
8851 B) Inductively-coupled plasma – mass spectrometry: USEPA
8852 Environmental Metals Methods: Method 200.8.

8853
8854 C) Atomic absorption, platform furnace technique: USEPA
8855 Environmental Metals Methods: Method 200.9.

8856
8857 D) Atomic absorption, furnace technique.

8858
8859 i) ASTM Method D3859-98 B or D3859-03 B; or

8860
8861 ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113
8862 B.

8863
8864 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
8865 11200), USEPA amended the entry for selenium by atomic
8866 absorption, furnace technique, in the table at corresponding
8867 40 CFR 141.23(k)(1) to allow the use of Standard Methods
8868 Online (at www.standardmethods.org), Method 3113 B (as
8869 approved in 1999). The Board has instead cited to the 21st
8870 edition of Standard Methods for the Examination of Water
8871 and Wastewater (the printed version of Standard Methods),
8872 since the version of Method 3113 that appears in that
8873 printed volume is that cited by USEPA as acceptable for
8874 use. USEPA later added Method 3113 B from the 21st
8875 edition of Standard Methods as an approved alternative
8876 method in appendix A to subpart C, added on June 3, 2008
8877 (at 73 Fed. Reg. 31616).

8878
8879 E) Axially viewed inductively-coupled plasma – atomic emission
8880 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.
8881

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

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 D859-94, D859-00, or D859-05~~D859-95~~.

BOARD NOTE: USEPA added ASTM Method D859-05 as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) Molybdosilicate: Standard Methods, 18th or 19th ed.: Method 4500-Si D or Standard Methods, 20th or 21st ed.: Method 4500-SiO₂4500-Si C.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for silica by molybdosilicate in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-SiO₂ C (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-SiO₂ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-SiO₂ C from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Heteropoly blue: Standard Methods, 18th or 19th ed.: Method 4500-Si E or Standard Methods, 20th or 21st ed.: Method 4500-SiO₂4500-Si D.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for silica by heteropoly blue in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of

8925 Standard Methods Online (at www.standardmethods.org), Method
 8926 4500-SiO₂ D (as approved in 1997). The Board has instead cited
 8927 to the 21st edition of Standard Methods for the Examination of
 8928 Water and Wastewater (the printed version of Standard Methods),
 8929 since the version of Method 4500-SiO₂ that appears in that printed
 8930 volume is that cited by USEPA as acceptable for use. USEPA
 8931 later added Method 4500-SiO₂ D from the 21st edition of Standard
 8932 Methods as an approved alternative method in appendix A to
 8933 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 8934
- 8935 F) Automated method for molybdate-reactive silica: Standard
 8936 Methods, 18th or 19th ed.: Method 4500-Si F or Standard Methods,
 8937 20th or 21st ed.: Method 4500-Si ~~4500-SiO₂~~ E.
 8938

8939 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 8940 USEPA amended the entry for silica by automated method for
 8941 molybdate-reactive silica in the table at corresponding 40 CFR
 8942 141.23(k)(1) to allow the use of Standard Methods Online (at
 8943 www.standardmethods.org), Method 4500-SiO₂ E (as approved in
 8944 1997). The Board has instead cited to the 21st edition of Standard
 8945 Methods for the Examination of Water and Wastewater (the
 8946 printed version of Standard Methods), since the version of Method
 8947 4500-SiO₂ that appears in that printed volume is that cited by
 8948 USEPA as acceptable for use. USEPA later added Method 4500-
 8949 SiO₂ E from the 21st edition of Standard Methods as an approved
 8950 alternative method in appendix A to subpart C, added on June 3,
 8951 2008 (at 73 Fed. Reg. 31616).

- 8952
- 8953 G) Inductively-coupled plasma.
 8954

- 8955 i) USEPA Environmental Metals Methods: Method 200.7; or
 8956
 8957 ii) Standard Methods, 18th, 19th, ~~or 20th~~, or 21st ed.: Method
 8958 3120 B.
 8959

8960 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 8961 11200), USEPA amended the entry for silica by
 8962 inductively-coupled plasma in the table at corresponding 40
 8963 CFR 141.23(k)(1) to allow the use of Standard Methods
 8964 Online (at www.standardmethods.org), Method 3120 B (as
 8965 approved in 1999). The Board has instead cited to the 21st
 8966 edition of Standard Methods for the Examination of Water
 8967 and Wastewater (the printed version of Standard Methods),

8968 since the version of Method 3120 that appears in that
8969 printed volume is that cited by USEPA as acceptable for
8970 use. USEPA later added Method 3120 B from the 21st
8971 edition of Standard Methods as an approved alternative
8972 method in appendix A to subpart C, added on June 3, 2008
8973 (at 73 Fed. Reg. 31616).

8974
8975 H) Axially viewed inductively-coupled plasma – atomic emission
8976 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

8977
8978 BOARD NOTE: USEPA added this method as an approved
8979 alternative method in appendix A to subpart C of 40 CFR 141,
8980 added on June 3, 2008 (at 73 Fed. Reg. 31616).

8981
8982 24) Sodium.

8983
8984 A) Inductively-coupled plasma: USEPA Environmental Metals
8985 Methods: Method 200.7.

8986
8987 B) Atomic absorption, direct aspiration: Standard Methods, 18th, or
8988 19th, or 21st ed.: Method 3111 B.

8989
8990 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
8991 USEPA amended the entry for sodium by atomic absorption, direct
8992 aspiration, in the table at corresponding 40 CFR 141.23(k)(1) to
8993 allow the use of Standard Methods Online (at
8994 www.standardmethods.org), Method 3111 B (as approved in
8995 1999). The Board has instead cited to the 21st edition of Standard
8996 Methods for the Examination of Water and Wastewater (the
8997 printed version of Standard Methods), since the version of Method
8998 3111 that appears in that printed volume is that cited by USEPA as
8999 acceptable for use. USEPA later added Method 3111 B from the
9000 21st edition of Standard Methods as an approved alternative
9001 method in appendix A to subpart C, added on June 3, 2008 (at 73
9002 Fed. Reg. 31616).

9003
9004 C) Ion chromatography: ASTM Method D6919-03.

9005
9006 D) Axially viewed inductively-coupled plasma – atomic emission
9007 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.
9008

9009 BOARD NOTE: USEPA added this method as an approved
9010 alternative method in appendix A to subpart C of 40 CFR 141,
9011 added on June 3, 2008 (at 73 Fed. Reg. 31616).
9012

- 9013 25) Temperature; thermometric: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st
9014 ed.: Method 2550.
9015

9016 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA
9017 amended the entry for temperature by thermometric in the table at
9018 corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods
9019 Online (at www.standardmethods.org), Method 2550 (as approved in
9020 2000). The Board has instead cited to the 21st edition of Standard
9021 Methods for the Examination of Water and Wastewater (the printed
9022 version of Standard Methods), since the version of Method 2550 that
9023 appears in that printed volume is that cited by USEPA as acceptable for
9024 use. USEPA later added Method 2550 from the 21st edition of Standard
9025 Methods as an approved alternative method in appendix A to subpart C,
9026 added on June 3, 2008 (at 73 Fed. Reg. 31616).
9027

- 9028 26) Thallium.
9029

9030 A) Inductively-coupled plasma – mass spectrometry: USEPA
9031 Environmental Metals Methods: Method 200.8.
9032

9033 B) Atomic absorption, platform furnace technique: USEPA
9034 Environmental Metals Methods: Method 200.9.
9035

- 9036 b) Sample collection for antimony, arsenic (effective January 22, 2004), asbestos,
9037 barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel,
9038 nitrate, nitrite, selenium, and thallium pursuant to Sections 611.600 through
9039 611.604 must be conducted using the following sample preservation, container,
9040 and maximum holding time procedures:
9041

9042 BOARD NOTE: For cyanide determinations samples must be adjusted with
9043 sodium hydroxide to pH 12 at the time of collection. When chilling is indicated
9044 the sample must be shipped and stored at 4° C or less. Acidification of nitrate or
9045 metals samples may be with a concentrated acid or a dilute (50% by volume)
9046 solution of the applicable concentrated acid. Acidification of samples for metals
9047 analysis is encouraged and allowed at the laboratory rather than at the time of
9048 sampling provided the shipping time and other instructions in Section 8.3 of
9049 USEPA Environmental Metals Method 200.7, 200.8, or 200.9 are followed.
9050

- 9051 1) Antimony.

- 9052
9053 A) Preservative: Concentrated nitric acid to pH less than 2.
9054
9055 B) Plastic or glass (hard or soft).
9056
9057 C) Holding time: Samples must be analyzed as soon after collection
9058 as possible, but in any event within six months.
9059
- 2) Arsenic.
- 9060
9061 A) Preservative: Concentrated nitric acid to pH less than 2.
9062
9063 B) Plastic or glass (hard or soft).
9064
9065 C) Holding time: Samples must be analyzed as soon after collection
9066 as possible, but in any event within six months.
9067
9068
- 3) Asbestos.
- 9069
9070 A) Preservative: Cool to 4° C.
9071
9072 B) Plastic or glass (hard or soft).
9073
9074 C) Holding time: Samples must be analyzed as soon after collection
9075 as possible, but in any event within 48 hours.
9076
9077
- 4) Barium.
- 9078
9079 A) Preservative: Concentrated nitric acid to pH less than 2.
9080
9081 B) Plastic or glass (hard or soft).
9082
9083 C) Holding time: Samples must be analyzed as soon after collection
9084 as possible, but in any event within six months.
9085
9086
- 5) Beryllium.
- 9087
9088 A) Preservative: Concentrated nitric acid to pH less than 2.
9089
9090 B) Plastic or glass (hard or soft).
9091
9092 C) Holding time: Samples must be analyzed as soon after collection
9093 as possible, but in any event within six months.
9094

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9137
- 6) Cadmium.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
 - 7) Chromium.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
 - 8) Cyanide.
 - A) Preservative: Cool to 4° C. Add sodium hydroxide to pH greater than 12. See the analytical methods for information on sample preservation.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
 - 9) Fluoride.
 - A) Preservative: None.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within one month.
 - 10) Mercury.
 - A) Preservative: Concentrated nitric acid to pH less than 2.

- 9138 B) Plastic or glass (hard or soft).
9139
9140 C) Holding time: Samples must be analyzed as soon after collection
9141 as possible, but in any event within 28 days.
9142
9143 11) Nickel.
9144
9145 A) Preservative: Concentrated nitric acid to pH less than 2.
9146
9147 B) Plastic or glass (hard or soft).
9148
9149 C) Holding time: Samples must be analyzed as soon after collection
9150 as possible, but in any event within six months.
9151
9152 12) Nitrate, chlorinated.
9153
9154 A) Preservative: Cool to 4° C.
9155
9156 B) Plastic or glass (hard or soft).
9157
9158 C) Holding time: Samples must be analyzed as soon after collection
9159 as possible, but in any event within 14 days.
9160
9161 13) Nitrate, non-chlorinated.
9162
9163 A) Preservative: Concentrated sulfuric acid to pH less than 2.
9164
9165 B) Plastic or glass (hard or soft).
9166
9167 C) Holding time: Samples must be analyzed as soon after collection
9168 as possible, but in any event within 14 days.
9169
9170 14) Nitrite.
9171
9172 A) Preservative: Cool to 4° C.
9173
9174 B) Plastic or glass (hard or soft).
9175
9176 C) Holding time: Samples must be analyzed as soon after collection
9177 as possible, but in any event within 48 hours.
9178
9179 15) Selenium.
9180

- 9181 A) Preservative: Concentrated nitric acid to pH less than 2.
9182
9183 B) Plastic or glass (hard or soft).
9184
9185 C) Holding time: Samples must be analyzed as soon after collection
9186 as possible, but in any event within six months.
9187
9188 16) Thallium.
9189
9190 A) Preservative: Concentrated nitric acid to pH less than 2.
9191
9192 B) Plastic or glass (hard or soft).
9193
9194 C) Holding time: Samples must be analyzed as soon after collection
9195 as possible, but in any event within six months.
9196
9197 c) Analyses under this Subpart N must be conducted by laboratories that received
9198 approval from USEPA or the Agency. The Agency must certify laboratories to
9199 conduct analyses for antimony, arsenic (effective January 23, 2006), asbestos,
9200 barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel,
9201 nitrate, nitrite, selenium, and thallium if the laboratory does as follows:
9202
9203 1) It analyzes performance evaluation (PE) samples, provided by the Agency
9204 pursuant to 35 Ill. Adm. Code 186, that include those substances at levels
9205 not in excess of levels expected in drinking water; and
9206
9207 2) It achieves quantitative results on the analyses within the following
9208 acceptance limits:
9209
9210 A) Antimony: $\pm 30\%$ at greater than or equal to 0.006 mg/l.
9211
9212 B) Arsenic: $\pm 30\%$ at greater than or equal to 0.003 mg/l.
9213
9214 C) Asbestos: 2 standard deviations based on study statistics.
9215
9216 D) Barium: $\pm 15\%$ at greater than or equal to 0.15 mg/l.
9217
9218 E) Beryllium: $\pm 15\%$ at greater than or equal to 0.001 mg/l.
9219
9220 F) Cadmium: $\pm 20\%$ at greater than or equal to 0.002 mg/l.
9221
9222 G) Chromium: $\pm 15\%$ at greater than or equal to 0.01 mg/l.
9223

- 9224 H) Cyanide: $\pm 25\%$ at greater than or equal to 0.1 mg/l.
- 9225
- 9226 I) Fluoride: $\pm 10\%$ at 1 to 10 mg/l.
- 9227
- 9228 J) Mercury: $\pm 30\%$ at greater than or equal to 0.0005 mg/l.
- 9229
- 9230 K) Nickel: $\pm 15\%$ at greater than or equal to 0.01 mg/l.
- 9231
- 9232 L) Nitrate: $\pm 10\%$ at greater than or equal to 0.4 mg/l.
- 9233
- 9234 M) Nitrite: $\pm 15\%$ at greater than or equal to 0.4 mg/l.
- 9235
- 9236 N) Selenium: $\pm 20\%$ at greater than or equal to 0.01 mg/l.
- 9237
- 9238 O) Thallium: $\pm 30\%$ at greater than or equal to 0.002 mg/l.
- 9239

9240 BOARD NOTE: Derived from 40 CFR 141.23(k) (2007) and appendix A to 40 CFR 141, as
9241 added at 73 Fed. Reg. 31616 (June 3, 2008)(2003).

9242 (Source: Amended at 33 Ill. Reg. _____, effective _____)

9243
9244 **Section 611.612 Monitoring Requirements for Old Inorganic MCLs**

- 9245 a) Analyses for the purpose of determining compliance with the old inorganic
- 9246 MCLs of Section 611.300 are required as follows:
- 9247
- 9248 1) Analyses for all CWSs utilizing surface water sources must be repeated at
- 9249 yearly intervals.
- 9250
- 9251 2) Analyses for all CWSs utilizing only groundwater sources must be
- 9252 repeated at three-year intervals.
- 9253
- 9254 3) This subsection (a)(3) corresponds with 40 CFR 141.23(1)(3), which
- 9255 requires monitoring for the repealed old MCL for nitrate at a frequency
- 9256 specified by the state. The Board has followed the USEPA lead and
- 9257 repealed that old MCL. This statement maintains structural consistency
- 9258 with USEPA rules.
- 9259
- 9260 4) This subsection (a)(4) corresponds with 40 CFR 141.23(1)(4), which
- 9261 authorizes the state to determine compliance and initiate enforcement
- 9262 action. This statement maintains structural consistency with USEPA
- 9263 rules.
- 9264
- 9265
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- b) If the result of an analysis made under subsection (a) of this Section indicates that the level of any contaminant listed in Section 611.300 exceeds the old MCL, the supplier must report to the Agency within seven days and initiate three additional analyses at the same sampling point within one month.
 - c) When the average of four analyses made pursuant to subsection (b) of this Section, rounded to the same number of significant figures as the old MCL for the substance in question, exceeds the old MCL, the supplier must notify the Agency and give notice to the public pursuant to Subpart V of this Part. Monitoring after public notification must be at a frequency designated by the Agency by a SEP granted pursuant to Section 611.110 and must continue until the old MCL has not been exceeded in two successive samples or until a different monitoring schedule becomes effective as a condition to a variance, an adjusted standard, a site specific rule, an enforcement action, or another SEP granted pursuant to Section 611.110.
 - d) This subsection (d) corresponds with 40 CFR 141.23(o), which pertains to monitoring for the repealed old MCL for nitrate. This statement maintains structural consistency with USEPA rules.
 - e) This subsection (e) corresponds with 40 CFR 141.23(p), which pertains to the use of existing data up until a date long since expired. This statement maintains structural consistency with USEPA rules.
 - f) Except for arsenic, for which analyses must be made in accordance with Section 611.611, analyses conducted to determine compliance with the old MCLs of Section 611.300 must be made in accordance with the following methods, incorporated by reference in Section 611.102, or alternative methods approved by the Agency pursuant to Section 611.480.
 - 1) Fluoride: The methods specified in Section 611.611(c) must apply for the purposes of this Section.
 - 2) Iron.
 - A) Standard Methods.
 - i) Method 3111 B, 18th, ~~or 19th~~, or 21st ed.;
 - ii) Method 3113 B, 18th, ~~or 19th~~, or 21st ed.;
 - iii) Method 3120 B, 18th, 19th, ~~or 20th~~, or 21st ed.

9310 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
9311 USEPA amended the entries for iron in the table at 40 CFR
9312 143.4(b) to allow the use of Standard Methods Online (at
9313 www.standardmethods.org), Method 3111 B, Method 3113 B, and
9314 Method 3120 B (as approved in 1999). The Board has instead
9315 cited to the 21st edition of Standard Methods for the Examination
9316 of Water and Wastewater (the printed version of Standard
9317 Methods), since the versions of Method 3111, Method 3113, and
9318 Method 3120 that appear in that printed volume are those cited by
9319 USEPA as acceptable for use. USEPA later added Method 3111
9320 B, Method 3113 B, and Method 3120 B from the 21st edition of
9321 Standard Methods as approved alternative methods in appendix A
9322 to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

9323
9324 B) USEPA Environmental Metals Methods.

9325
9326 i) Method 200.7; or

9327
9328 ii) Method 200.9.

9329
9330 C) Axially viewed inductively-coupled plasma – atomic emission
9331 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

9332
9333 BOARD NOTE: USEPA added this method as an approved
9334 alternative method in appendix A to subpart C of 40 CFR 141,
9335 added on June 3, 2008 (at 73 Fed. Reg. 31616).

9336
9337 3) Manganese.

9338
9339 A) Standard Methods.

9340
9341 i) Method 3111 B, 18th, ~~or~~ 19th, or 21st ed.;

9342
9343 ii) Method 3113 B, 18th, ~~or~~ 19th, or 21st ed.; or

9344
9345 iii) Method 3120 B, 18th, 19th, ~~or~~ 20th, or 21st ed.

9346
9347 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
9348 USEPA amended the entries for manganese in the table at 40 CFR
9349 143.4(b) to allow the use of Standard Methods Online (at
9350 www.standardmethods.org), Method 3111 B, Method 3113 B, and
9351 Method 3120 B (as approved in 1999). The Board has instead
9352 cited to the 21st edition of Standard Methods for the Examination

of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 3111, Method 3113, and Method 3120 that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 3111 B, Method 3113 B, and Method 3120 B from the 21st edition of Standard Methods as approved alternative methods in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) USEPA Environmental Metals Methods.

- i) Method 200.7;
- ii) Method 200.8; or
- iii) Method 200.9.

C) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

4) Zinc.

A) Standard Methods.

- i) Method 3111 B, 18th, ~~or~~ 19th, or 21st ed.; or
- ii) Method 3120 B, 18th, 19th, ~~or~~ 20th, or 21st ed.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for zinc in the table at 40 CFR 143.4(b) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B and Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 3111 and Method 3120 that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 3111 B, Method 3113 B, and Method 3120 B from the 21st edition of Standard Methods as approved

9395 alternative methods in appendix A to subpart C, added on June 3,
9396 2008 (at 73 Fed. Reg. 31616).

9397
9398 B) USEPA Environmental Metals Methods.

9399
9400 i) Method 200.7; or

9401
9402 ii) Method 200.8.

9403
9404 C) Axially viewed inductively-coupled plasma – atomic emission
9405 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

9406
9407 BOARD NOTE: USEPA added this method as an approved
9408 alternative method in appendix A to subpart C of 40 CFR 141,
9409 added on June 3, 2008 (at 73 Fed. Reg. 31616).

9410
9411 BOARD NOTE: The provisions of subsections (a) through (f) of this Section derive from 40
9412 CFR 141.23(1) through (p) (2007)(2002). Subsections (f)(2) through (f)(4) of this Section relate
9413 exclusively to additional State requirements. The Board retained subsection (f) of this Section to
9414 set forth methods for the inorganic contaminants for which there is a State-only MCL. The
9415 methods specified are those set forth in 40 CFR 143.4(b) (2007) and appendix A to 40 CFR 141,
9416 as added at 73 Fed. Reg. 31616 (June 3, 2008)(2002), for secondary MCLs.

9417
9418 (Source: Amended at 33 Ill. Reg. _____, effective _____)

9419
9420 SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

9421
9422 **Section 611.645 Analytical Methods for Organic Chemical Contaminants**

9423
9424 Analysis for the Section 611.311(a) VOCs under Section 611.646; the Section 611.311(c) SOCs
9425 under Section 611.648; the Section 611.310 old MCLs under Section 611.641; and for THMs,
9426 TTHMs, and TTHM potential must be conducted using the methods listed in this Section or by
9427 alternative equivalent methods as approved by the Agency pursuant to Section 611.480. All
9428 methods are from USEPA Organic Methods, unless otherwise indicated. All methods are
9429 incorporated by reference in Section 611.102. Other required analytical test procedures germane
9430 to the conduct of these analyses are contained in the USEPA document, "Technical Notes of
9431 Drinking Water Methods," incorporated by reference in Section 611.102.

9432
9433 Volatile Organic Chemical Contaminants (VOCs).

9434	Contaminant	Analytical Methods
	Benzene	502.2, 524.2
	Carbon tetrachloride	502.2, 524.2, 551.1

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

9435

9436 Synthetic Organic Chemical Contaminants (SOCs).

9437

Contaminant	Analytical Methods
2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD or dioxin)	Dioxin and Furan Method 1613
2,4-D	515.2, 555, 515.1, 515.3, <u>OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98</u>
2,4,5-TP (Silvex)	515.2, 555, 515.1, 515.3, <u>OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98</u>
Alachlor	505* ¹ , 507, 508.1, 525.2, 551.1
Atrazine	505* ¹ , 507, 508.1, 525.2, 551.1, Syngenta AG-625 ²
Benzo(a)pyrene	525.2, 550, 550.1

Carbofuran	531.1, <u>OGWDW Methods, Method 531.2, Standard Methods, 18th ed. Supplement, 19th ed., or 20th ed.: Method 6610 or Standard Methods 21st ed. or Standard Methods Online: Method 6610 B</u>
Chlordane	505, 508, 508.1, 525.2
Dalapon	515.1, 552.1, 552.2, 515.3, <u>OGWDW Methods, Method 515.4, OGWDW Methods, Method 552.3</u>
Di(2-ethylhexyl)adipate	506, 525.2
Di(2-ethylhexyl)phthalate	506, 525.2
Dibromochloropropane (DBCP)	504.1, 551.1
Dinoseb	515.1, 515.2, 515.3, <u>OGWDW Methods, Method 515.4, 555</u>
Diquat	549.1
Endothall	548.1
Endrin	505, 508, 508.1, 525.2, 551.1
Ethylene Dibromide (EDB)	504.1, 551.1
Glyphosate	547, Standard Methods, 18 th ed., 19 th ed., or 20 th ed.: Method 6651
Heptachlor	505, 508, 508.1, 525.2, 551.1
Heptachlor Epoxide	505, 508, 508.1, 525.2, 551.1
Hexachlorobenzene	505, 508, 508.1, 525.2, 551.1
Hexachlorocyclopentadiene	505, 508, 508.1, 525.2, 551.1
Lindane	505, 508, 508.1, 525.2, 551.1
Methoxychlor	505, 508, 508.1, 525.2, 551.1

Oxamyl	531.1, <u>OGWDW Methods, Method 531.2, Standard Methods, 18th ed. Supplement, 19th ed., or 20th ed.: Method 6610 or Standard Methods 21st ed. or Standard Methods Online: Method 6610 B 508A</u>
PCBs (measured for compliance purposes as decchlorobiphenyl) PCBs (qualitatively identified as Aroclors) Pentachlorophenol	505, 508, 508.1, 525.2 515.1, 515.2, 525.2, 555, 515.3, <u>OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98(2003)</u>
Picloram	515.1, 515.2, 555, 515.3, <u>OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98(2003)</u>
Simazine	505* ¹ , 507, 508.1, 525.2, 551.2
Toxaphene	505, 508, 525.2, 508.1
9438	
9439 Total Trihalomethanes (TTHMs).	
9440	
Contaminant Total Trihalomethanes (TTHMs), Trihalomethanes (THMs), and Maximum Total Trihalomethane Potential	Analytical Methods 502.2, 524.2, 551.1
9441	
9442 State-Only MCLs (for which a method is not listed above).	
9443	
Contaminant	Analytical Methods
Aldrin	505, 508, 508.1, 525.2
DDT	505, 508
Dieldrin	505, 508, 508.1, 525.2
9444	
9445 * ¹ denotes that, for the particular contaminant, a nitrogen-phosphorus detector should be substituted for the electron capture detector in method 505 (or another approved method should be used) to determine alachlor, atrazine, and simazine if lower detection limits are required.	
9446	
9447	
9448	
9449	

9450 ² denotes that Syngenta Method AG-625 may not be used for the analysis of atrazine in any
 9451 system where chlorine dioxide is used for drinking water treatment. In samples from all other
 9452 systems, any result for atrazine generated by Syngenta Method AG-625 that is greater than
 9453 one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015mg/ℓ or
 9454 1.5 μg/ℓ) must be confirmed using another approved method for this contaminant and should
 9455 use additional volume of the original sample collected for compliance monitoring. In
 9456 instances where a result from Syngenta Method AG-625 triggers such confirmatory testing,
 9457 the confirmatory result is to be used to determine compliance.

9458
 9459 BOARD NOTE: Derived from 40 CFR 141.24(e) (2007) and appendix A to 40 CFR 141, as
 9460 added at 73 Fed. Reg. 31616 (June 3, 2008)(2005).

9461
 9462 (Source: Amended at 33 Ill. Reg. _____, effective _____)

9463
 9464 SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

9465
 9466 **Section 611.720 Analytical Methods**

9467
 9468 a) The methods specified below, or alternative methods approved by the Agency
 9469 pursuant to Section 611.480, incorporated by reference in Section 611.102, are to
 9470 be used to determine compliance with Section 611.330, except in cases where
 9471 alternative methods have been approved in accordance with Section 611.480.

9472
 9473 1) Gross Alpha and Beta.

9474
 9475 A) Standard Methods.

9476
 9477 i) Method 302, 13th ed.; or

9478
 9479 ii) Method 7110 B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

9480
 9481 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 9482 11200), USEPA amended the entry for gross alpha and beta
 9483 by evaporation in the table at corresponding 40 CFR
 9484 141.25(a) to allow the use of Standard Methods Online (at
 9485 www.standardmethods.org), Method 7110 B (as approved
 9486 in 2000). The Board has instead cited to the 21st edition of
 9487 Standard Methods for the Examination of Water and
 9488 Wastewater (the printed version of Standard Methods),
 9489 since the version of Method 7110 that appears in that
 9490 printed volume is that cited by USEPA as acceptable for
 9491 use. USEPA later added Method 7110 B from the 21st
 9492 edition of Standard Methods as an approved alternative

method in appendix A to subpart C, added on June 3, 2008
(at 73 Fed. Reg. 31616).

- B) USEPA Interim Radiochemical Methods: page 1;
- C) USEPA Radioactivity Methods: Method 900.0;
- D) USEPA Radiochemical Analyses: page 1;
- E) USEPA Radiochemistry Methods: Method 00-01; or
- F) USGS Methods: Method R-1120-76.

2) Gross Alpha.

- A) Standard Methods, 18th, 19th, ~~or 20th~~, or 21st ed.: Method 7110 C;
or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
USEPA amended the entry for gross alpha by coprecipitation in the
table at corresponding 40 CFR 141.25(a) to allow the use of
Standard Methods Online (at www.standardmethods.org), Method
7110 C (as approved in 2000). The Board has instead cited to the
21st edition of Standard Methods for the Examination of Water and
Wastewater (the printed version of Standard Methods), since the
version of Method 7110 that appears in that printed volume is that
cited by USEPA as acceptable for use. USEPA later added
Method 7110 C from the 21st edition of Standard Methods as an
approved alternative method in appendix A to subpart C, added on
June 3, 2008 (at 73 Fed. Reg. 31616).

- B) USEPA Radiochemistry Methods: Method 00-02.

3) Radium-226.

- A) ASTM Methods.
 - i) Method ~~D2460-97~~D2460-90; or
 - ii) Method D3454-97;
- B) New York Radium Method;

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- 9536 C) Standard Methods.
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 9538 i) Method 304, 13th ed.;
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 9540 ii) Method 305, 13th ed.;
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 9542 iii) Method 7500-Ra B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.; or
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 9544 iv) Method 7500-Ra C, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;
 9545
 9546 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 9547 USEPA amended the entries for radium-226 in the table at
 9548 corresponding 40 CFR 141.25(a) to allow the use of Standard
 9549 Methods Online (at www.standardmethods.org), Method 7500-Ra
 9550 B and C (as approved in 2000). The Board has instead cited to the
 9551 21st edition of Standard Methods for the Examination of Water and
 9552 Wastewater (the printed version of Standard Methods), since the
 9553 version of Method 7500-Ra that appears in that printed volume is
 9554 that cited by USEPA as acceptable for use. USEPA later added
 9555 Method 7500-Ra B and C from the 21st edition of Standard
 9556 Methods as an approved alternative method in appendix A to
 9557 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
 9558
 9559 D) USDOE Manual: Method Ra-04;
 9560
 9561 E) USEPA Interim Radiochemical Methods: pages 13 and 16;
 9562
 9563 F) USEPA Radioactivity Methods: Methods 903.0, 903.1;
 9564
 9565 G) USEPA Radiochemical Analyses: page 19;
 9566
 9567 H) USEPA Radiochemistry Methods: Methods Ra-03, Ra-04; or
 9568
 9569 I) USGS Methods.
 9570
 9571 i) Method R-1140-76; or
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 9573 ii) Method R-1141-76.
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 9575 J) Georgia Radium Method.
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 9577 4) Radium-228.
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- A) Standard Methods, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 7500-Ra D;
- BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for radium-228 by radiochemical in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-Ra D (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-Ra that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-Ra D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
- B) New York Radium Method;
- C) USEPA Interim Radiochemical Methods: page 24;
- D) USEPA Radioactivity Methods: Method 904.0;
- E) USEPA Radiochemical Analyses: page 19;
- F) USEPA Radiochemistry Methods: Method Ra-05;
- G) USGS Methods: Method R-1142-76; ~~or~~
- H) New Jersey Radium Method; or-
- I) Georgia Radium Method.
- 5) Uranium.
- A) Standard Methods, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 7500-U C;
- BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for uranium by radiochemical and alpha spectrometry in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-U C (as approved in 2000). The Board has instead cited to the 21st edition of Standard

Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-U that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-U B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- B) Standard Methods, 20th ed.: Method 3125;
- C) ASTM Methods.
 - i) Method D2907-97;
 - ii) Method D3972-97 or D3972-02;
 - iii) Method D5174-97 or D5174-02; or
 - iv) Method D5673-03 or Method 5673-05;

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- D) USEPA Radioactivity Methods: Methods 908.0, 908.1;
- E) USEPA Environmental Metals Methods: Method 200.8;
- F) USEPA Radiochemical Analyses: page 33;
- G) USEPA Radiochemistry Methods: Method 00-07;
- H) USDOE Manual: Method U-02 or U-04; or
- I) USGS Methods.
 - i) Method R-1180-76;
 - ii) Method R-1181-76; or
 - iii) Method R-1182-76.

9664 BOARD NOTE: If uranium (U) is determined by mass, a conversion
 9665 factor of 0.67 pCi/μg of uranium must be used. This conversion factor is
 9666 based on the 1:1 activity ratio of ²³⁴U and ²³⁸U that is characteristic of
 9667 naturally occurring uranium.

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 9669 6) Radioactive Cesium.

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 9671 A) ASTM Methods.

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 9673 i) Method D2459-72; or

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 9675 ii) Method D3649-91 or D3649-98a;

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 9677 B) Standard Methods.

9678
 9679 i) Method 7120, 19th, ~~or~~ 20th, or 21st ed.; or

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 9681 ii) Method 7500-Cs B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

9682
 9683 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 9684 USEPA amended the entries for radioactive cesium in the table at
 9685 corresponding 40 CFR 141.25(a) to allow the use of Standard
 9686 Methods Online (at www.standardmethods.org), Method 7120 (as
 9687 approved in 1997) and Method 7500-Cs B (as approved in 2000).
 9688 The Board has instead cited to the 21st edition of Standard Methods
 9689 for the Examination of Water and Wastewater (the printed version
 9690 of Standard Methods), since the versions of Method 7120 and
 9691 Method 7500-Cs that appear in that printed volume are those cited
 9692 by USEPA as acceptable for use. USEPA later added Method
 9693 7120 and Method 7500-Cs B from the 21st edition of Standard
 9694 Methods as an approved alternative method in appendix A to
 9695 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

9696
 9697 C) USDOE Manual: Method 4.5.2.3;

9698
 9699 D) USEPA Interim Radiochemical Methods: page 4;

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 9701 E) USEPA Radioactivity Methods: Methods 901.0, 901.1;

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 9703 F) USEPA Radiochemical Analyses: page 92; or

9704
 9705 G) USGS Methods.

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 9707 i) Method R-1110-76; or

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- ii) Method R-1111-76.
 - 7) Radioactive Iodine.
 - A) ASTM Methods.
 - i) D3649-91 or D3649-98a; or
 - ii) D4785-93 or D4785-98;
 - B) Standard Methods.
 - i) Method 7120, 19th, ~~or~~ 20th, or 21st ed.;
 - ii) Method 7500-I B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;
 - iii) Method 7500-I C, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.; or
 - iv) Method 7500-I D, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;
- BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for radioactive iodine in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7120 (as approved in 1997) and Method 7500-I B, C, and D (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 7120 and Method 7500-I that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 7500-I B, C, and D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
- C) USDOE Manual: Method 4.5.2.3;
 - D) USEPA Interim Radiochemical Methods: pages 6, 9;
 - E) USEPA Radiochemical Analyses: page 92; or
 - F) USEPA Radioactivity Methods: Methods 901.1, 902.0.

- 9751 8) Radioactive Strontium-89 & 90.
 9752
 9753 A) Standard Methods.
 9754
 9755 i) Method 303, 13th ed.; or
 9756
 9757 ii) Method 7500-Sr B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;
 9758
 9759 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.
 9760 11200), USEPA amended the entry for radioactive
 9761 strontium in the table at corresponding 40 CFR 141.25(a) to
 9762 allow the use of Standard Methods Online (at
 9763 www.standardmethods.org), Method 7500-Sr B (as
 9764 approved in 2001). The Board has instead cited to the 21st
 9765 edition of Standard Methods for the Examination of Water
 9766 and Wastewater (the printed version of Standard Methods),
 9767 since the version of Method 7500-Sr that appears in that
 9768 printed volume is that cited by USEPA as acceptable for
 9769 use. USEPA later added Method 7500-Sr B from the 21st
 9770 edition of Standard Methods as an approved alternative
 9771 method in appendix A to subpart C, added on June 3, 2008
 9772 (at 73 Fed. Reg. 31616).
 9773
 9774 B) USDOE Manual.
 9775
 9776 i) Method Sr-01; or
 9777
 9778 ii) Method Sr-02;
 9779
 9780 C) USEPA Interim Radiochemical Methods: page 29;
 9781
 9782 D) USEPA Radioactivity Methods: Method 905.0;
 9783
 9784 E) USEPA Radiochemical Analyses: page 65;
 9785
 9786 F) USEPA Radiochemistry Methods: Method Sr-04; or
 9787
 9788 G) USGS Methods: Method R-1160-76.
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 9790 9) Tritium.
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 9792 A) ASTM Methods: Method D4107-91 or D4107-98;
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- B) Standard Methods.
 - i) Method 306, 13th ed.; or
 - ii) Method 7500-³H B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for tritium in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-³H B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-³H that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-³H B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
 - C) USEPA Interim Radiochemical Methods: page 34;
 - D) USEPA Radioactivity Methods: Method 906.0;
 - E) USEPA Radiochemical Analyses: page 87;
 - F) USEPA Radiochemistry Methods: Method H-02; or
 - G) USGS Methods: Method R-1171-76.
- 10) Gamma Emitters.
- A) ASTM Methods.
 - i) Method D3649-91 or D3649-98a; or
 - ii) Method D4785-93 or D4785-00a;
 - B) Standard Methods.
 - i) Method 7120, 19th, ~~or~~ 20th, or 21st ed.;
 - ii) Method 7500-Cs B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.; or

9837
 9838 iii) Method 7500-I B, 17th, 18th, 19th, or 21st ed.;

9839
 9840 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),
 9841 USEPA amended the entries for gamma emitters in the table at
 9842 corresponding 40 CFR 141.25(a) to allow the use of Standard
 9843 Methods Online (at www.standardmethods.org), Method 7120 (as
 9844 approved in 1997), Method 7500-Cs B (as approved in 2000), and
 9845 Method 7500-I B (as approved in 2000). The Board has instead
 9846 cited to the 21st edition of Standard Methods for the Examination
 9847 of Water and Wastewater (the printed version of Standard
 9848 Methods), since the versions of Method 7120, Method 7500-Cs,
 9849 and Method 7500-I that appear in that printed volume are those
 9850 cited by USEPA as acceptable for use. USEPA later added
 9851 Method 7150, Method 7500-Cs B, and Method 7500-I B from the
 9852 21st edition of Standard Methods as an approved alternative
 9853 method in appendix A to subpart C, added on June 3, 2008 (at 73
 9854 Fed. Reg. 31616).

9855
 9856 C) USDOE Manual: Method Ga-01-R;

9857
 9858 D) USEPA Radioactivity Methods: Methods 901.0, 901.1, or 902.0;

9859
 9860 E) USEPA Radiochemical Analyses: page 92; or

9861
 9862 F) USGS Methods: Method R-1110-76.

9863
 9864 b) When the identification and measurement of radionuclides other than those listed
 9865 in subsection (a) of this Section are required, the following methods, incorporated
 9866 by reference in Section 611.102, are to be used, except in cases where alternative
 9867 methods have been approved in accordance with Section 611.480:

9868
 9869 1) "Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous
 9870 Solutions," available from NTIS.

9871
 9872 2) HASL Procedure Manual, HASL 300, available from ERDA Health and
 9873 Safety Laboratory.

9874
 9875 c) For the purpose of monitoring radioactivity concentrations in drinking water, the
 9876 required sensitivity of the radioanalysis is defined in terms of a detection limit.
 9877 The detection limit must be that concentration which can be counted with a
 9878 precision of plus or minus 100 percent at the 95 percent confidence level (1.96σ ,
 9879 where σ is the standard deviation of the net counting rate of the sample).

9880
 9881 1) To determine compliance with Section 611.330(b), (c), and (e), the
 9882 detection limit must not exceed the concentrations set forth in the
 9883 following table:
 9884

Contaminant	Detection Limit
Gross alpha particle activity	3 pCi/ℓ
Radium-226	1 pCi/ℓ
Radium-228	1 pCi/ℓ
Uranium	1 µg/ℓ

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 9886 BOARD NOTE: Derived from 40 CFR 141.25(c) Table B (2007)~~(2005)~~.
 9887

9888 2) To determine compliance with Section 611.330(d), the detection limits
 9889 must not exceed the concentrations listed in the following table:
 9890

Radionuclide	Detection Limit
Tritium	1,000 pCi/ℓ
Strontium-89	10 pCi/ℓ
Strontium-90	2 pCi/ℓ
Iodine-131	1 pCi/ℓ
Cesium-134	10 pCi/ℓ
Gross beta	4 pCi/ℓ
Other radionuclides	1/10 of applicable limit

9891
 9892 BOARD NOTE: Derived from 40 CFR 141.25(c) Table C (2007)~~(2005)~~.
 9893

9894 d) To judge compliance with the MCLs listed in Section 611.330, averages of data
 9895 must be used and must be rounded to the same number of significant figures as
 9896 the MCL for the substance in question.
 9897

9898 BOARD NOTE: Derived from 40 CFR 141.25 (2007) and appendix A to 40 CFR 141, as added
 9899 at 73 Fed. Reg. 31616 (June 3, 2008)~~(2005)~~.
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9901 (Source: Amended at 33 Ill. Reg. _____, effective _____)
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9903 **SUBPART S: GROUNDWATER RULE**
 9904

9905 **Section 611.801 Sanitary Surveys for GWS Suppliers**
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9907 a) A GWS supplier must provide the Agency, at the Agency's request, any existing
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- b) For the purposes of this Subpart S, a "sanitary survey," as conducted by the Agency, includes but is not limited to, an onsite review of the delineated WHPAs (identifying sources of contamination within the WHPAs and evaluations ~~of~~ the hydrogeologic sensitivity of the delineated WHPAs conducted under source water assessments or utilizing other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

- c) The sanitary survey must include an evaluation of the applicable components listed in subsections (c)(1) through (c)(8) of this Section:
 - 1) Source,
 - 2) Treatment,
 - 3) Distribution system,
 - 4) Finished water storage,
 - 5) Pumps, pump facilities, and controls,
 - 6) Monitoring, reporting, and data verification,
 - 7) System management and operation, and
 - 8) Operator compliance with Agency requirements.

- d) The Agency must repeat the sanitary survey as follows:
 - 1) The Agency must conduct a sanitary survey that addresses the eight sanitary survey components listed in subsection (c) of this Section no less frequently than every three years for a CWS supplier, except as provided in subsection (d)(3) of this Section, and every five years for a non-CWS supplier. The Agency may conduct more frequent sanitary surveys for any supplier. The initial sanitary survey for each community water system must be conducted before December 31, 2012, unless the supplier meets the requirements of subsection (d)(3) of this Section. The initial sanitary survey for each CWS supplier that meets the requirements of subsection (d)(3) of this Section and for each non-CWS supplier must be conducted before December 31, 2014. The sanitary survey must include an

- 9951 evaluation of each of the elements set forth in subsection (c) of this
9952 Section, as applicable.
9953
- 9954 2) The Agency may use a phased review process to meet the requirements of
9955 subsection (d)(1) of this Section if all the applicable elements of
9956 subsection (c) of this Section are evaluated within the required interval.
9957
- 9958 3) The Agency may conduct sanitary surveys once every five years for
9959 community water systems under any of the following circumstances:
9960
- 9961 A) If the system either provides at least 4-log treatment of viruses
9962 (using inactivation, removal, or an Agency-approved combination
9963 of 4-log inactivation and removal) before or at the first customer
9964 for all its groundwater sources; or
9965
- 9966 B) If the supplier has an outstanding performance record, as
9967 determined by the Agency and documented in previous sanitary
9968 surveys, and the supplier has no history of total coliform MCL or
9969 monitoring violations under Sections 611.521 through 611.527
9970 since the last sanitary survey.
9971
- 9972 4) This subsection (d)(4) corresponds with 40 CFR 142.16(o)(2)(iv), which
9973 imposes requirements for describing the elements of the State's regulatory
9974 system. This statement maintains structural consistency with the
9975 corresponding federal provision.
9976
- 9977 5) The Agency must provide a GWS supplier with written notice by a SEP
9978 issued pursuant to Section 611.110 that describes any significant
9979 deficiency which it has found no later than 30 days after the Agency has
9980 identified the significant deficiency. The notice may specify corrective
9981 actions and deadlines for completion of corrective actions. The Agency
9982 may provide the written notice at the time of the sanitary survey.
9983

9984 BOARD NOTE: Subsections (a) through (c) are derived from 40 CFR 141.401 (2007);
9985 as added at 71 Fed. Reg. 65574 (Nov. 8, 2006). Subsection (d) is derived from 40 CFR
9986 142.16(o)(2) (2007), as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

9987
9988 (Source: Amended at 33 Ill. Reg. _____, effective _____)
9989

9990 **Section 611.802 Groundwater Source Microbial Monitoring and Analytical Methods**
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- 9992 a) Triggered source water monitoring.
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- 1) General requirements. A GWS supplier must conduct triggered source water monitoring if the following conditions exist:
 - A) The supplier does not provide at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for each groundwater source; and
 - B) The supplier is notified that a sample collected pursuant to Section 611.521 is total coliform-positive, and the sample is not invalidated by the Agency pursuant to Section 611.523.

 - 2) Sampling requirements. A GWS supplier must collect, within 24 hours after notification of the total coliform-positive sample, at least one groundwater source sample from each groundwater source in use at the time the total coliform-positive sample was collected pursuant to Section 611.521, except as provided in subsection (a)(2)(B) of this Section.
 - A) The Agency may, by a SEP issued pursuant to Section 611.110, extend the 24-hour time limit on a case-by-case basis if it determines that the supplier cannot collect the groundwater source water sample within 24 hours due to circumstances beyond the supplier's control. In the case of an extension, the Agency must specify how much time the supplier has to collect the sample.
 - B) If approved by the Agency, a supplier with more than one groundwater source may meet the requirements of this subsection (a)(2) by sampling a representative groundwater source or sources. If directed by the Agency by a SEP issued pursuant to Section 611.110, the supplier must submit for Agency approval a triggered source water monitoring plan that identifies one or more groundwater sources that are representative of each monitoring site in the system's sample siting plan pursuant to Section 611.521 and that the system intends to use for representative sampling pursuant to this subsection (a).
 - C) A GWS supplier that serves 1,000 or fewer people may use a repeat sample collected from a groundwater source to meet both the requirements of Section 611.522 and to satisfy the monitoring requirements of subsection (a)(2) of this Section for that groundwater source only if the Agency approves the use of E. coli as a fecal indicator for source water monitoring pursuant to this subsection (a) by a SEP issued pursuant to Section 611.110. If the

repeat sample collected from the groundwater source is E.coli positive, the system must comply with subsection (a)(3) of this Section.

- 3) Additional requirements. If the Agency does not require corrective action pursuant to Section 611.803(a)(2) for a fecal indicator-positive source water sample collected pursuant to subsection (a)(2) of this Section that is not invalidated pursuant to subsection (d) of this Section, the system must collect five additional source water samples from the same source within 24 hours after being notified of the fecal indicator-positive sample.
- 4) Consecutive and wholesale systems.
 - A) In addition to the other requirements of this subsection (a), a consecutive GWS supplier that has a total coliform-positive sample collected pursuant to Section 611.521 must notify the wholesale systems within 24 hours after being notified of the total coliform-positive sample.
 - B) In addition to the other requirements of this subsection (a), a wholesale GWS supplier must comply with the following requirements:
 - i) A wholesale GWS supplier that receives notice from a consecutive system it serves that a sample collected pursuant to Section 611.521 is total coliform-positive must, within 24 hours after being notified, collect a sample from its groundwater sources pursuant to subsection (a)(2) of this Section and analyze it for a fecal indicator pursuant to subsection (c) of this Section.
 - ii) If the sample collected pursuant to subsection (a)(4)(B)(i) of this section is fecal indicator-positive, the wholesale GWS supplier must notify all consecutive systems served by that groundwater source of the fecal indicator source water positive within 24 hours of being notified of the groundwater source sample monitoring result and must meet the requirements of subsection (a)(3) of this Section.
- 5) Exceptions to the triggered source water monitoring requirements. A GWS supplier is not required to comply with the source water monitoring requirements of subsection (a) of this Section if either of the following conditions exists:

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- A) The Agency determines, and documents in writing, by a SEP issued pursuant to Section 611.110, that the total coliform-positive sample collected pursuant to Section 611.521 is caused by a distribution system deficiency; or
 - B) The total coliform-positive sample collected pursuant to Section 611.521 is collected at a location that meets Agency criteria for distribution system conditions that will cause total coliform-positive samples.
- b) Assessment source water monitoring. If directed by the Agency by a SEP issued pursuant to Section 611.110, a GWS supplier must conduct assessment source water monitoring that meets Agency-determined requirements for such monitoring. A GWS supplier conducting assessment source water monitoring may use a triggered source water sample collected pursuant to subsection (a)(2) of this Section to meet the requirements of subsection (b) of this Section. Agency-determined assessment source water monitoring requirements may include the following:
- 1) Collection of a total of 12 groundwater source samples that represent each month the system provides groundwater to the public;
 - 2) Collection of samples from each well, unless the system obtains written Agency approval to conduct monitoring at one or more wells within the GWS that are representative of multiple wells used by that system and which draw water from the same hydrogeologic setting;
 - 3) Collection of a standard sample volume of at least 100 ml for fecal indicator analysis, regardless of the fecal indicator or analytical method used;
 - 4) Analysis of all groundwater source samples using one of the analytical methods listed in subsection (c)(2) of this Section for the presence of E. coli, enterococci, or coliphage;
 - 5) Collection of groundwater source samples at a location prior to any treatment of the groundwater source unless the Agency approves a sampling location after treatment; and
 - 6) Collection of groundwater source samples at the well itself, unless the system's configuration does not allow for sampling at the well itself and the Agency approves an alternate sampling location by a SEP issued

10123 pursuant to Section 611.110 that is representative of the water quality of
 10124 that well.

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c) Analytical methods.

- 1) A GWS supplier subject to the source water monitoring requirements of subsection (a) of this Section must collect a standard sample volume of at least 100 mℓ for fecal indicator analysis, regardless of the fecal indicator or analytical method used.
- 2) A GWS supplier must analyze all groundwater source samples collected pursuant to subsection (a) of this Section using one of the analytical methods listed in subsections (c)(2)(A) through (c)(2)(C) of this Section, or alternative methods approved by the Agency pursuant to Section 611.480, subject to the limitations of subsection (c)(2)(D) of this Section, for the presence of E. coli, enterococci, or coliphage:

A) E. coli:

- i) Autoanalysis Colilert System, Standard Methods, 20th or 21st ed., Method 9223 B.
- ii) Colisure Test, Standard Methods, 20th or 21st ed., Method 9223 B.
- iii) Membrane Filter Method with MI Agar, USEPA Method 1604.
- iv) m-ColiBlue24 Test.
- v) E*Colite Test.
- vi) EC-MUG, Standard Methods, 20th ed., Method 9221 F.
- vii) NA-MUG, Standard Methods, 20th ed., Method 9222 G.
- viii) Colilert-18, Standard Methods, 20th or 21st ed., Method 9222 G.

BOARD NOTE: EC-MUG (Standard Methods, Method 9221F) or NA-MUG (Standard Methods, Method 9222G) can be used for E. coli testing step, as described in Section 611.526(a) or (b) after use of Standard Methods, Method 9221 B, 9221 D, 9222 B, or 9222 C.

10166 On June 3, 2008 (at 73 Fed. Reg. 31616), USEPA added appendix
10167 A to subpart C of 40 CFR 141, which authorized alternative
10168 methods to those listed for E. coli by Colilert and Colisure and
10169 added Colilert-18 in the table at corresponding 40 CFR
10170 141.402(c)(2) to allow the use of the 21st edition of Standard
10171 Methods for the Examination of Water and Wastewater and
10172 Standard Methods Online (at www.standardmethods.org), Method
10173 9223 B (as approved in 1997). The Board has instead cited only to
10174 the 21st edition of Standard Methods for the Examination of Water
10175 and Wastewater (the printed version of Standard Methods), since
10176 the version of Method 9223 B that appears in that printed volume
10177 is that cited by USEPA as acceptable for use. USEPA also added
10178 the version of Method 9223 B that appears in the 20th edition of
10179 Standard Methods as to Colilert-18.

10180
10181 B) Enterococci:

- 10182
10183 i) Multiple-Tube Technique, Standard Methods, 20th ed.,
10184 Method 9230 B or Standard Methods Online, Method 9230
10185 B.

10186
10187 BOARD NOTE: On June 3, 2008 (at 73 Fed. Reg. 31616),
10188 USEPA added appendix A to subpart C of 40 CFR 141,
10189 which authorized alternative methods to those listed for
10190 enterococci by multiple-tube technique at corresponding 40
10191 CFR 141.402(c)(2) to allow the use of the Standard
10192 Methods Online (at www.standardmethods.org), Method
10193 9230 B (as approved in 2004).

- 10194
10195 ii) Membrane Filter Technique, Standard Methods, 20th ed.,
10196 Method 9230 C, and USEPA Method 1600.

10197
10198 BOARD NOTE: The holding time and temperature for
10199 groundwater samples are specified in subsection (c)(2)(D)
10200 of this Section, rather than as specified in Section 8 of
10201 USEPA Method 1600.

- 10202
10203 iii) Enterolert.

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10205 BOARD NOTE: Medium is available through IDEXX
10206 Laboratories, Inc., at the address set forth in Section
10207 611.102(b). Preparation and use of the medium must be as

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set forth in the article that embodies the method as incorporated by reference in Section 611.102(b).

- C) Coliphage:
 - i) Two-Step Enrichment Presence-Absence Procedure, USEPA Method 1601.
 - ii) Single Agar Layer Procedure, USEPA Method 1602.
- D) Limitation on methods use. The time from sample collection to initiation of analysis may not exceed 30 hours. The GWS supplier is encouraged but is not required to hold samples below 10°C during transit.

d) Invalidation of a fecal indicator-positive groundwater source sample.

- 1) A GWS supplier may obtain Agency invalidation of a fecal indicator-positive groundwater source sample collected pursuant to subsection (a) of this Section only under either of the following conditions:
 - A) The supplier provides the Agency with written notice from the laboratory that improper sample analysis occurred; or
 - B) The Agency determines and documents in writing by a SEP issued pursuant to Section 611.110 that there is substantial evidence that a fecal indicator-positive groundwater source sample is not related to source water quality.
- 2) If the Agency invalidates a fecal indicator-positive groundwater source sample, the GWS supplier must collect another source water sample pursuant to subsection (a) of this Section within 24 hours after being notified by the Agency of its invalidation decision, and the supplier must have it analyzed for the same fecal indicator using the analytical methods in subsection (c) of this Section. The Agency may extend the 24-hour time limit on a case-by-case basis if the supplier cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Agency must specify how much time the system has to collect the sample.

e) Sampling location.

- 10250 1) Any groundwater source sample required pursuant to subsection (a) of this
10251 Section must be collected at a location prior to any treatment of the
10252 groundwater source unless the Agency approves a sampling location after
10253 treatment.
10254
- 10255 2) If the supplier's system configuration does not allow for sampling at the
10256 well itself, it may collect a sample at an Agency-approved location to meet
10257 the requirements of subsection (a) of this Section if the sample is
10258 representative of the water quality of that well.
10259
- 10260 f) New sources. If directed by the Agency by a SEP issued pursuant to Section
10261 611.110, a GWS supplier that places a new groundwater source into service after
10262 November 30, 2009 must conduct assessment source water monitoring pursuant
10263 to subsection (b) of this Section. If directed by the SEP, the system must begin
10264 monitoring before the groundwater source is used to provide water to the public.
10265
- 10266 g) Public Notification. A GWS supplier with a groundwater source sample collected
10267 pursuant to subsection (a) or (b) of this Section that is fecal indicator-positive and
10268 which is not invalidated pursuant to subsection (d) of this Section, including a
10269 consecutive system supplier served by the groundwater source, must conduct
10270 public notification pursuant to Section 611.902.
10271
- 10272 h) Monitoring Violations. A failure to meet the requirements of subsections (a)
10273 through (f) of this Section is a monitoring violation that requires the GWS
10274 supplier to provide public notification pursuant to Section 611.904.
10275

10276 BOARD NOTE: Derived from 40 CFR 141.402 (2007) and appendix A to 40 CFR 141,
10277 as added at 73 Fed. Reg. 31616 (June 3, 2008), as added at 71 Fed. Reg. 65574 (Nov. 8,
10278 2006).
10279

10280 (Source: Amended at 33 Ill. Reg. _____, effective _____)
10281

10282 SUBPART U: CONSUMER CONFIDENCE REPORTS 10283

10284 **Section 611.884 Required Additional Health Information** 10285

- 10286 a) All reports must prominently display the following language: "Some people may
10287 be more vulnerable to contaminants in drinking water than the general population.
10288 Immuno-compromised persons such as persons with cancer undergoing
10289 chemotherapy, persons who have undergone organ transplants, people with
10290 HIV/AIDS or other immune system disorders, some elderly, and infants can be
10291 particularly at risk from infections. These people should seek advice about
10292 drinking water from their health care providers. USEPA or Centers for Disease

- 10293 Control and Prevention guidelines on appropriate means to lessen the risk of
10294 infection by Cryptosporidium and other microbial contaminants are available
10295 from the USEPA Safe Drinking Water Hotline (800-426-4791)."
10296
- 10297 b) A supplier that detects arsenic above 0.005 mg/ℓ and up to and including 0.010
10298 mg/ℓ must do the following:
10299
- 10300 1) The supplier must include in its report a short informational statement
10301 about arsenic, using the following language: "While your drinking water
10302 meets USEPA's standard for arsenic, it does contain low levels of arsenic.
10303 USEPA's standard balances the current understanding of arsenic's possible
10304 health effects against the costs of removing arsenic from drinking water.
10305 USEPA continues to research the health effects of low levels of arsenic,
10306 which is a naturally-occurring mineral known to cause cancer in humans
10307 at high concentrations and is linked to other health effects such as skin
10308 damage and circulatory problems."; or
10309
- 10310 2) The supplier may write its own educational statement, but only in
10311 consultation with the Agency.
10312
- 10313 c) A supplier that detects nitrate at levels above 5 mg/ℓ, but below the MCL, must
10314 do the following:
10315
- 10316 1) The supplier must include a short informational statement about the
10317 impacts of nitrate on children, using the following language: "Nitrate in
10318 drinking water at levels above 10 ppm is a health risk for infants of less
10319 than six months of age. High nitrate levels in drinking water can cause
10320 blue baby syndrome. Nitrate levels may rise quickly for short periods of
10321 time because of rainfall or agricultural activity. If you are caring for an
10322 infant you should ask advice from your health care provider"; or
10323
- 10324 2) The CWS supplier may write its own educational statement, but only in
10325 consultation with the Agency.~~d) A CWS supplier that detects lead above
10326 the action level in more than five percent, and up to and including ten
10327 percent, of homes sampled must do the following:~~
10328
- 10329 d) Every report must include the following lead-specific information:
10330
- 10331 1) A short informational statement about lead in drinking water and its
10332 effects on children. The statement must include the following
10333 information:
10334

10335 If present, elevated levels of lead can cause serious health
10336 problems, especially for pregnant women and young children.
10337 Lead in drinking water is primarily from materials and components
10338 associated with service lines and home plumbing. [NAME OF
10339 SUPPLIER] is responsible for providing high quality drinking
10340 water, but cannot control the variety of materials used in plumbing
10341 components. When your water has been sitting for several hours,
10342 you can minimize the potential for lead exposure by flushing your
10343 tap for 30 seconds to two minutes before using water for drinking
10344 or cooking. If you are concerned about lead in your water, you
10345 may wish to have your water tested. Information on lead in
10346 drinking water, testing methods, and steps you can take to
10347 minimize exposure is available from the Safe Drinking Water
10348 Hotline or at <http://www.epa.gov/safewater/lead>.
10349

10350 2) A supplier may write its own educational statement, but only in
10351 consultation with the Agency.
10352

10353 1) ~~The CWS supplier must include a short informational statement about the~~
10354 ~~special impact of lead on children, using the following language: "Infants~~
10355 ~~and young children are typically more vulnerable to lead in drinking water~~
10356 ~~than the general population. It is possible that lead levels at your home~~
10357 ~~may be higher than at other homes in the community as a result of~~
10358 ~~materials used in your home's plumbing. If you are concerned about~~
10359 ~~elevated lead levels in your home's water, you may wish to have your~~
10360 ~~water tested and flush your tap for 30 seconds to two minutes before using~~
10361 ~~tap water. Additional information is available from the USEPA Safe~~
10362 ~~Drinking Water Hotline (800-426-4791)"; or~~
10363

10364 2) ~~The CWS supplier may write its own educational statement, but only in~~
10365 ~~consultation with the Agency.~~
10366

10367 e) A CWS supplier that detects TTHM above 0.080 mg/l, but below the MCL in
10368 Section 611.312, as an annual average, monitored and calculated under the
10369 provisions of former Section 611.680, must include the health effects language
10370 prescribed by Appendix A of this Part.
10371

10372 f) Until January 22, 2006, a CWS supplier that detects arsenic above 0.010 mg/l and
10373 up to and including 0.05 mg/l must include the arsenic health effects language
10374 prescribed by Appendix A to this Part.
10375

10376 BOARD NOTE: Derived from 40 CFR 141.154 (2007), as amended at 72 Fed. Reg.
10377 7782 (October 12, 2007)(2003).

(Source: Amended at 33 Ill. Reg. _____, effective _____)

SUBPART W: INITIAL DISTRIBUTION SYSTEM EVALUATIONS

Section 611.920 General Requirements

- a) USEPA has designated that the requirements of this Subpart W constitute National Primary Drinking Water Regulations. The regulations in this Subpart W establish monitoring and other requirements for identifying Subpart Y compliance monitoring locations for determining compliance with maximum contaminant levels for TTHMs and HAA5. The supplier must use an initial distribution system evaluation (IDSE) to determine the locations in its distribution system that are representative of high TTHM and HAA5 concentrations throughout the supplier's distribution system. An IDSE is used in conjunction with, but separate from, Subpart I compliance monitoring, to identify and select Subpart Y compliance monitoring locations.

- b) **Applicability.** A supplier is subject to the requirements of this Subpart W if it fulfills any of the following conditions:
 - 1) The supplier owns or operates a community water system that uses a primary or residual disinfectant other than ultraviolet light;
 - 2) The supplier delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light; or
 - 3) The supplier owns or operates a non-transient non-community water system that serves at least 10,000 people, and it either uses a primary or residual disinfectant other than ultraviolet light, or it delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.

- c) **Schedule.** A supplier must comply with the requirements of this Subpart W on the schedule provided in subsection (c)(1) of this Section based on its system type, as set forth in the applicable of subsections (c)(1)(A) through (c)(1)(E)(e)(1)(D) of this Section, subject to the conditions of subsections (c)(1)(F)(e)(1)(E) through (c)(1)(H)(e)(1)(G) of this Section:
 - 1) **Compliance dates.**
 - A) A supplier that is not part of a combined distribution system, or a supplier that serves the largest population in a combined

10421 distribution system, and which serves a population of 100,000 or
 10422 more persons must either have submitted its standard monitoring
 10423 plan, its system-specific study plan, or its 40/30 certification or
 10424 must have obtained or have been subject to a very small system
 10425 waiver before October 1, 2006. The supplier must further
 10426 complete its standard monitoring or system-specific study before
 10427 September 30, 2008 and submit its IDSE report to the Agency
 10428 before January 1, 2009.

10429
 10430 B) A supplier that is not part of a combined distribution system, or a
 10431 supplier that serves the largest population in a combined
 10432 distribution system, and which serves a population of 50,000 to
 10433 99,999 persons must either have submitted its standard monitoring
 10434 plan, its system-specific study plan, or its 40/30 certification or
 10435 must have obtained or have been subject to a very small system
 10436 waiver before April 1, 2007. The supplier must further complete
 10437 its standard monitoring or system-specific study before March 31,
 10438 2009 and submit its IDSE report to the Agency before July 1,
 10439 2009.

10440
 10441 C) A supplier that is not part of a combined distribution system, or a
 10442 supplier that serves the largest population in a combined
 10443 distribution system, and which serves a population of 10,000 to
 10444 49,999 persons must submit its standard monitoring plan, its
 10445 system-specific study plan, or its 40/30 certification or must obtain
 10446 or be subject to a very small system waiver before October 1,
 10447 2007. The supplier must further complete its standard monitoring
 10448 or system-specific study before September 30, 2009 and submit its
 10449 IDSE report to the Agency before January 1, 2010.

10450
 10451 D) A supplier that is not part of a combined distribution system, or a
 10452 supplier that serves the largest population in a combined
 10453 distribution system, and which serves a population of fewer than
 10454 10,000 persons (and which is a CWS) must submit its standard
 10455 monitoring plan, its system-specific study plan, or its 40/30
 10456 certification or must obtain or be subject to a very small system
 10457 waiver before April 1, 2008. The supplier must further complete
 10458 its standard monitoring or system-specific study before March 31,
 10459 2010 and submit its IDSE report to the Agency before July 1,
 10460 2010.

10461
 10462 E) A supplier that is part of a combined distribution system which
 10463 does not serve the largest population in the combined system,

10464 which is a wholesale system supplier or a consecutive system
 10465 supplier, must submit its standard monitoring plan, its system-
 10466 specific study plan, or its 40/30 certification or must obtain or be
 10467 subject to a very small system waiver; must further complete its
 10468 standard monitoring or system-specific study; and submit its IDSE
 10469 report to the Agency at the same time as the supplier in the
 10470 combined system that has the earliest compliance date.

10471
 10472 FE) If, within 12 months after the date when submission of the standard
 10473 monitoring plan, the system-specific study plan, or the 40/30
 10474 certification or becoming subject to a very small system waiver is
 10475 due, as identified in the applicable of subsections (a)(1) through
 10476 (a)(4) of this Section, the Agency does not approve a supplier's
 10477 plan or notify the supplier that it has not yet completed its review,
 10478 the supplier may consider the plan that it submitted as approved.
 10479 The supplier must implement that plan, and it must complete
 10480 standard monitoring or a system-specific study no later than the
 10481 date when completion of the standard monitoring or system-
 10482 specific study is due, as identified in the applicable of subsections
 10483 (a)(1) through (a)(4) of this Section.

10484
 10485 GF) The supplier must submit its 40/30 certification pursuant to Section
 10486 611.923 before the date indicated in the applicable of subsections
 10487 (a)(1) through (a)(4) of this Section.

10488
 10489 HG) If, within three months after the due date for submission of the
 10490 IDSE report identified in this subsection (c)(1) (nine months after
 10491 this date if the supplier must comply on the schedule in subsection
 10492 (c)(1)(C) of this Section), the Agency does not approve the
 10493 supplier's IDSE report or notify the supplier that it has not yet
 10494 completed its review, the supplier may consider the report that it
 10495 submitted to the Agency, and the supplier must implement the
 10496 recommended Subpart Y monitoring as required.

10497
 10498 2) For the purpose of determining the applicable compliance schedule in
 10499 subsection (c)(1) of this Section, the Agency may, by a SEP issued
 10500 pursuant to Section 611.110, determine that a combined distribution
 10501 system does not include certain consecutive systems based on such factors
 10502 as the receipt of water from a wholesale system only on an emergency
 10503 basis or the receipt of only a small percentage and small volume of water
 10504 from a wholesale system. The Agency may also determine, by a SEP
 10505 issued pursuant to Section 611.110, that a combined distribution system
 10506 does not include certain wholesale systems based on such factors as the

10507 delivery of water to a consecutive system only on an emergency basis or
10508 the delivery of only a small percentage and small volume of water to a
10509 consecutive system.
10510

- 10511 d) A supplier must do one of the following: it must conduct standard monitoring
10512 that meets the requirements in Section 611.921; it must conduct a system-specific
10513 study that meets the requirements in Section 611.922; it must certify to the
10514 Agency that it meets the 40/30 certification criteria under Section 611.923; or it
10515 must qualify for a very small system waiver under Section 611.924.
10516
- 10517 1) The supplier must have taken the full complement of routine TTHM and
10518 HAA5 compliance samples required of a system that serves the
10519 appropriate population and which uses the appropriate source water under
10520 Subpart I of this Part (or the supplier must have taken the full complement
10521 of reduced TTHM and HAA5 compliance samples required of a system
10522 with the supplier's population and source water under Subpart I of this Part
10523 if the supplier meets reduced monitoring criteria under Subpart I of this
10524 Part) during the period specified in Section 611.923(a) to meet the 40/30
10525 certification criteria in Section 611.923. The supplier must have taken
10526 TTHM and HAA5 samples under Sections 611.381 and 611.382 to be
10527 eligible for the very small system waiver in Section 611.924.
10528
- 10529 2) If the supplier has not taken the required samples, the supplier must
10530 conduct standard monitoring that meets the requirements in Section
10531 611.921, or a system-specific study that meets the requirements in Section
10532 611.922.
10533
- 10534 e) The supplier must use only the analytical methods specified in Section 611.381,
10535 or otherwise approved by the Agency for monitoring under this Subpart W, to
10536 demonstrate compliance with the requirements of this Subpart W.
10537
- 10538 f) IDSE results will not be used for the purpose of determining compliance with
10539 MCLs in Section 611.312.
10540

10541 BOARD NOTE: Derived from 40 CFR 141.600 (2007)(2006).

10542 (Source: Amended at 33 Ill. Reg. _____, effective _____)
10543

10544
10545 **SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM**
10546

10547 **Section 611.1004 Source Water Monitoring Requirements: Analytical Methods**
10548

- 10549 a) Cryptosporidium. A supplier must analyze for Cryptosporidium using USEPA
10550 OGWDW Methods, Method 1623 (05) or USEPA OGWDW Methods, Method

10551 1622 (05), or alternative methods approved by the Agency pursuant to Section
 10552 611.480, each incorporated by reference in Section 611.102.

10553
 10554 1) The supplier must analyze at least a 10 ℓ sample or a packed pellet volume
 10555 of at least 2 mℓ as generated by the methods listed in subsection (a) of this
 10556 Section. A supplier unable to process a 10 ℓ sample must analyze as much
 10557 sample volume as can be filtered by two filters approved by USEPA for
 10558 the methods listed in subsection (a) of this Section, up to a packed pellet
 10559 volume of at least 2 mℓ.

10560
 10561 2) Matrix spike (MS) samples.

10562
 10563 A) MS samples, as required by the methods in subsection (a) of this
 10564 Section, must be spiked and filtered by a laboratory approved for
 10565 Cryptosporidium analysis pursuant to Section 611.1005.

10566
 10567 B) If the volume of the MS sample is greater than 10 ℓ, the supplier
 10568 may filter all but 10 ℓ of the MS sample in the field, and ship the
 10569 filtered sample and the remaining 10 ℓ of source water to the
 10570 laboratory. In this case, the laboratory must spike the remaining
 10571 10 ℓ of water and filter it through the filter used to collect the
 10572 balance of the sample in the field.

10573
 10574 3) Flow cytometer-counted spiking suspensions must be used for MS
 10575 samples and ongoing precision and recovery samples.

10576
 10577 b) E. coli. A supplier must use methods for enumeration of E. coli in source water
 10578 approved in 40 CFR 136.3(a), or alternative methods approved by the Agency
 10579 pursuant to Section 611.480, incorporated by reference in Section 611.102.

10580
 10581 1) The time from sample collection to initiation of analysis may not exceed
 10582 30 hours, unless the supplier meets the condition of subsection (b)(2) of
 10583 this Section.

10584
 10585 2) The Agency may, by a SEP issued pursuant to Section 611.110, approve
 10586 on a case-by-case basis the holding of an E. coli sample for up to 48 hours
 10587 between sample collection and initiation of analysis if it determines that
 10588 analyzing an E. coli sample within 30 hours is not feasible. E. coli
 10589 samples held between 30 to 48 hours must be analyzed by the
 10590 Autoanalysis Colilert System reagent version of Standard Methods, 18th,
 10591 19th, or 20th ed., Method 9223 B, as listed in 40 CFR 136.3(a),
 10592 incorporated by reference in Section 611.102.
 10593

10594 3) A supplier must maintain the temperature of its samples between 0°C and
10595 10°C during storage and transit to the laboratory.

10596
10597 4) The supplier may use the membrane filtration, two-step procedure
10598 described in Standard Methods, 20th ed., Method 9222 D and G,
10599 incorporated by reference in Section 611.102.

10600
10601 BOARD NOTE: On June 3, 2008 (at 73 Fed. Reg. 31616), USEPA added
10602 appendix A to subpart C of 40 CFR 141, which authorized alternative
10603 methods to those listed for E. coli by multiple-tube technique at
10604 corresponding 40 CFR 141.402(c)(2) to allow the use of Standard
10605 Methods for the Examination of Water and Wastewater, Method 9222 D
10606 and G.

10607
10608 c) Turbidity. A supplier must use methods for turbidity measurement approved in
10609 Section 611.531(a).

10610
10611 BOARD NOTE: Derived from 40 CFR 141.704 (2007) and appendix A to 40 CFR 141, as
10612 added at 73 Fed. Reg. 31616 (June 3, 2008)(2006).

10613
10614 (Source: Amended at 33 Ill. Reg. _____, effective _____)

10615
10616 **Section 611.1007 Source Water Monitoring Requirements: Grandfathering Previously**
10617 **Collected Data**

10618
10619 a) Initial source monitoring and Cryptosporidium samples.

10620
10621 1) A supplier may comply with the initial source water monitoring
10622 requirements of Section 611.1001(a) by grandfathering sample results
10623 collected before the supplier is required to begin monitoring (i.e.,
10624 previously collected data). To be grandfathered, the sample results and
10625 analysis must meet the criteria in this Section and the Agency must
10626 approve the use of the data by a SEP issued pursuant to Section 611.110.

10627
10628 2) A filtered system supplier may grandfather Cryptosporidium samples to
10629 meet the requirements of Section 611.1001(a) when the supplier does not
10630 have corresponding E. coli and turbidity samples. A supplier that
10631 grandfathers Cryptosporidium samples without E. coli and turbidity
10632 samples is not required to collect E. coli and turbidity samples when it
10633 completes the requirements for Cryptosporidium monitoring pursuant to
10634 Section 611.1001(a).
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- b) E. coli sample analysis. The analysis of E. coli samples must meet the analytical method and approved laboratory requirements of Sections 611.1004 and 611.1005.
 - c) Cryptosporidium sample analysis. The analysis of Cryptosporidium samples must meet the criteria in this subsection (c).
 - 1) Laboratories ~~must analyze~~analyzed Cryptosporidium samples using one of the following analytical methods, or alternative methods approved by the Agency pursuant to Section 611.480:
 - A) USEPA OGWDW Methods, Method 1623 (05), incorporated by reference in Section 611.102;
 - B) USEPA OGWDW Methods, Method 1622 (05), incorporated by reference in Section 611.102;
 - C) USEPA OGWDW Methods, Method 1623 (01), incorporated by reference in Section 611.102;
 - D) USEPA OGWDW Methods, Method 1622 (01), incorporated by reference in Section 611.102;
 - E) USEPA OGWDW Methods, Method 1623 (99), incorporated by reference in Section 611.102; or
 - F) USEPA OGWDW Methods, Method 1622 (99), incorporated by reference in Section 611.102.
 - 2) For each Cryptosporidium sample, the laboratory analyzed at least 10 ℓ of sample or at least 2 ml of packed pellet or as much volume as could be filtered by two filters that USEPA approved for the methods listed in subsection (c)(1) of this Section.
 - d) Sampling location. The sampling location must meet the conditions in Section 611.1003.
 - e) Sampling frequency. Cryptosporidium samples were collected no less frequently than each calendar month on a regular schedule, beginning no earlier than January 1999. Sample collection intervals may vary for the conditions specified in Section 611.1002(b)(1) and (b)(2) if the supplier provides documentation of the condition when reporting monitoring results.

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- 1) The Agency may, by a SEP issued pursuant to Section 611.110, approve grandfathering of previously collected data where there are time gaps in the sampling frequency if the supplier conducts additional monitoring that the Agency has specified by a SEP issued pursuant to Section 611.110 to ensure that the data used to comply with the initial source water monitoring requirements of Section 611.1001(a) are seasonally representative and unbiased.
 - 2) A supplier may grandfather previously collected data where the sampling frequency within each month varied. If the Cryptosporidium sampling frequency varied, the supplier must follow the monthly averaging procedure in Section 611.1010(b)(5) or Section 611.1012(a)(3), as applicable, when calculating the bin classification for a filtered system supplier or the mean Cryptosporidium concentration for an unfiltered system supplier.
- f) Reporting monitoring results for grandfathering. A supplier that requests to grandfather previously collected monitoring results must report the following information by the applicable dates listed in this subsection. A supplier must report this information to the Agency.
- 1) A supplier must report that it intends to submit previously collected monitoring results for grandfathering. This report must specify the number of previously collected results the supplier will submit, the dates of the first and last sample, and whether a supplier will conduct additional source water monitoring to meet the requirements of Section 611.1001(a). The supplier must report this information no later than the applicable date set forth in Section 611.1002.
 - 2) A supplier must report previously collected monitoring results for grandfathering, along with the associated documentation listed in subsections (f)(2)(A) through (f)(2)(D) of this Section, no later than two months after the applicable date listed in Section 611.1001(c).
 - A) For each sample result, a supplier must report the applicable data elements in Section 611.1006.
 - B) A supplier must certify that the reported monitoring results include all results that it generated during the time period beginning with the first reported result and ending with the final reported result. This applies to samples that were collected from the sampling location specified for source water monitoring pursuant to this Subpart Z, which were not spiked, and which were analyzed using

10722 the laboratory's routine process for the analytical methods listed in
10723 this Section.

10724
10725 C) The supplier must certify that the samples were representative of a
10726 plant's source waters and the source waters have not changed. It
10727 must report a description of the sampling locations, which must
10728 address the position of the sampling location in relation to its water
10729 sources and treatment processes, including points of chemical
10730 addition and filter backwash recycle.

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10732 D) For Cryptosporidium samples, the laboratory or laboratories that
10733 analyzed the samples must provide a letter certifying that the
10734 quality control criteria specified in the methods listed in subsection
10735 (c)(1) of this Section were met for each sample batch associated
10736 with the reported results. Alternatively, the laboratory may
10737 provide bench sheets and sample examination report forms for
10738 each field, matrix spike, initial precision and recovery, ongoing
10739 precision and recovery, and method blank sample associated with
10740 the reported results.

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10742 g) If the Agency determines that a previously collected data set submitted for
10743 grandfathering was generated during source water conditions that were not normal
10744 for the supplier, such as a drought, the Agency may, by a SEP issued pursuant to
10745 Section 611.110, disapprove the data. Alternatively, the Agency may, by a SEP
10746 issued pursuant to Section 611.110, approve the previously collected data if the
10747 supplier reports additional source water monitoring data, as determined by the
10748 Agency, to ensure that the data set used pursuant to Section 611.1010 or Section
10749 611.1012 represents average source water conditions for the supplier.

10750
10751 h) If a supplier submits previously collected data that fully meet the number of
10752 samples required for initial source water monitoring pursuant to Section
10753 611.1001(a), and some of the data are rejected due to not meeting the
10754 requirements of this Section, the supplier must conduct additional monitoring to
10755 replace rejected data on a schedule that the Agency has approved by a SEP issued
10756 pursuant to Section 611.110. A supplier is not required to begin this additional
10757 monitoring until two months after notification that data have been rejected and
10758 additional monitoring is necessary.

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10760 BOARD NOTE: Derived from 40 CFR 141.707 (2007)~~(2006)~~.

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10762 (Source: Amended at 33 Ill. Reg. _____, effective _____)